

Orthoptera and Mantodea in the collection of the Macedonian Museum of Natural History (Skopje) with an annotated check-list of the groups in Macedonia

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Abstract

During the revision of the Orthoptera collection of the Macedonian Museum of Natural History (Skopje) in 2004, four Mantodea and 102 Orthoptera species (altogether 1057 specimens) collected in the Republic of Macedonia were determined. Furthermore, a revision of the literature about the Macedonian orthopteran fauna was executed and some own unpublished records were added. As a result of the present study, eight taxa are added and 27 taxa are subtracted from the list of the Macedonian fauna. Thus, the updated check list of the Orthoptera fauna of Macedonia comprises four species of Mantodea, 167 Orthoptera taxa and two additional subspecies. The study also revealed that two Orthoptera species must be eliminated from the list of the Serbian fauna.

Zusammenfassung

Im Zuge der Bearbeitung der Orthopterensammlung des Naturhistorischen Museums von Mazedonien (Skopje), im Jahre 2004, konnten vier Mantiden- und 102 Orthopterenarten (zusammen 1057 Individuen), die in der Republik Mazedonien gesammelt wurden, untersucht werden. Zusätzlich wurde eine umfangreiche Literaturstudie über die mazedonische Orthopterenfauna durchgeführt, die weitere Nachweise lieferte. Die vorliegende Studie ergab acht neue Taxa für Mazedonien, wohingegen 27 der für die mazedonische Fauna angegebenen Taxa nicht in Mazedonien vorkommen. Die aktuelle Checkliste der Orthopterenfauna Mazedoniens enthält somit vier Arten Gottesanbeterinnen, 167 Heuschreckenarten und zwei weitere Unterarten. Die Studie ergab im Weiteren, dass zwei Arten von der Liste der Fauna von Serbien gestrichen werden müssen.

Introduction

The Balkan Peninsula has drawn the biologists' attention for long time and especially from the end of XIXth Century for its exceptionally rich flora and fauna. This is the richest in Orthoptera species territory in Europe (HELLER et al. 1998), which may be connected with its diverse geomorphology, climate and the common geological history with both Asia and Europe during long periods. The territory of the Republic of Macedonia (F.Y.R. of Macedonia), though situated in the centre of the Balkans, has commonly been neglected by foreign scientists. For many groups of animals only fragmentary data on the species' composition and distribution exist. Such groups are Mantodea and Orthoptera. First records on these groups from the geographical region "Makedonia" can be found in BRUNNER VON

WATTENWYL (1878, 1882), though they concern the present territory of Greece. The period of active investigations begins with the World War I when material has been gathered by teams of few countries involved in the military operations and later on three papers were published (DOFLEIN 1921, BERLAND & CHOPARD 1922, BURR et al. 1923). However, again most of the data concern the territory of Greece. Later on, US (1938) recorded 44 species (four of them already synonymised) from the former Yugoslavian Republic of Macedonia followed by the significant contribution by RAMME (1951). US & MATVEJEV (1967) in their catalogue of Yugoslavia summarized the information referring to the separate republics. However, many omissions, taxonomic inconsistencies and unconfirmed records are involved. Since the 1960s Karaman (see References, Appendix) published many local contributions. Despite all the data gathered many old records remain doubtful, moreover there is no work dealing with a summary of all data concerning the orthopterous fauna of the country.

During the present study on the comparatively small collection of Mantodea and Orthoptera of the Macedonian Museum of Natural History (Skopje), some new data was accumulated, while at the same time many questions arised concerning some earlier records on these groups. Thus, the aim of one of the authors (D. Chobanov) was also to collect and revise all literature data on Mantodea and Orthoptera in Macedonia.

Material and methods

A revision of the collection of the Macedonian Museum of Natural History in Skopje, Republic of Macedonia, has been made (2004). The material checked includes 56 specimens of Mantodea (47 imagines, 9 nymphs) and 1001 specimens of Orthoptera (891 imagines, 110 nymphs). The whole material is dry, mounted on pins. When appropriate the materials have been determined directly or, if necessary, demounted and moistened, the wings have been spread or genitalia extracted, macerated and further mounted together with the specimen.

Results and Discussion

I. List of species and material in the MMNH collection.

In the following list the material is ordered alphabetically by the UTM code (last 4 characters used) of the respective locality. Following is the geomorphologic unit, exact locality (if known), date, number and sex of specimens, collector (and determination if present and different than here). Abbreviations used in the text follow: FNSM – Faculty of Natural Sciences and Mathematics, MMNH – Macedonian Museum of Natural History (Skopje), N_n – nymph, where "n" is the respective instar number, N_{-1} – nymph last instar, N_{-2} – nymph last but one instar.

MANTODEA

Empusidae

Empusinae

Empusa fasciata Brullé, 1836

Material: 9 imagines, 9 nymphs, drawer 18/21. **Localities:** (UTM?) Galichica Mt., 8.06.1995, 1 ♀ (V. Krpach); Shar Mt., 26.05.1990, 2 ♂♂ (FNSM); Zheden Mt., 23.05.1994, 1 ♂ (V. Krpach); (EL99) Krivolak vill., 30.04.2004, 1 ♂ N₁ (E. Stojkoska); (EM24) Matka gorge, 19.05.1943, 1 ♂ N₁ (K. Tuleshkov) & 1 ♂ (K. Bogoev); (EM34) Skopje-Kisela Voda, 20.02.1955, 1 N_{4/5} (M. Karaman); 25.03.1955, 1 ♂ N₅ (FNSM); 8.10.1955, 1 ♂ N₅ (FNSM); (EM34/35) Skopje, 9.04.1943, 1 ♂ N₅ (K. Tuleshkov); (EM35) Skopje (Zool. Garden), 11.06.1998, 1 ♂ (E. Stojkoska); Skopje, Vizbegovo, 4.10.1992, 1 ♀ N₅ (B. Mihajlova); (EM45) Arachinovo vill., 14.06.1997, 1 ♀ (V. Krpach); (FL09) Demir Kapija gorge, 31.10.1942, 1 ♂ N₅ (K. Tuleshkov ("Espr. Bonev")); (FL46) Dojran lake, 30.05.1979, 1 ♂ (B. Mihajlova); Dojran lake, Achikot, 13.09.2000, 1 ♂ N₅ (Stankovich); (FM51) "Berovo – brana", 3.06.1995, 1 ♀ (V. Krpach).

Mantidae

Amelinae

Ameles heldreichi Brunner von Wattenwyl, 1882

Material: 8 specimens (imagines), drawer 18/21. **Localities:** (EM34) Vodno Mt., 9.08.1945, 2 ♂♂ (K. Bogoev); 15.08.1941, 1 ♂ (S. Stojanov); Nerezi vill., 9.08.1945, 2 ♂♂ (K. Bogoev); (EM34) Skopje-Kisela Voda, 8.10.1955, 1 ♀ (FNSM); (EM53?) Katlanovo vill. ("Katlanovsko"), 15.07.1967, 1 ♀ (FNSM); (FL46) Dojran lake, Achikot, 13.09.2000, 1 ♀ (E. Stojkoska).

Mantinae

Iris oratoria Linnaeus, 1758

Material: 2 imagines, drawer 18/21. **Localities:** (EM34/35) Skopje, 10.10.1970, 1 ♀ (Topukova); (EM44) Marino vill., 22.10.1996, 1 ♀ (N. Taseva).

Mantis religiosa Linnaeus, 1758

Material: 28 specimens (imagines), drawer 18/21. **Localities:** (UTM?) Koturski Dol, 9.10.1996, 1 ♀ (V. Krpach); (DL85) Ohrid, 28.[wrongly written as 06?].1986, 2 ♂♂ (Popov); (DM61) Zhirovica vill., 18.11.1980, 1 ♀ (Kushev); (DM71/81) Mavrovo, 16.07.1981, 1 ♀ (Chingovski); (EL08) Cer vill., 17.09.1981, 1 ♀ (Chingovski); (EM24?) "Treska", 28.09.1941, 1 ♂, 2 ♀♀ (K. Tuleshkov); (EM34) Vodno Mt., 15.08.1941, 1 ♂, 1 ♀ (K. Tuleshkov); (EM34) Skopje-Taftalidzhe, 20.10.2003, 1 ♀ (D. Davidovich); Skopje-Centre, 6.09.2004, 1 ♀ (R. Ivanovska); (EM34/35) Skopje, 6.07.1973, 1 ♀ (Chingovski); 28.08.1991, 1 ♀ & 16.09.1988, 1 ♀ (V. Krpach); 28.08.1987, 1 ♂ & 9.09.1984, 1 ♂ & 24.09.1996, 1 ♀ & 1.10.1986, 1 ♂ & 5.10.1985, 1 ♂ & 10.10.1973, 1 ♀ (Topukova); 1.09.1985, 1 ♂ (B. Mihajlova); (EM35) Skopje-Karposh 1, 20.09.2004, 1 ♀ & 23.09.2004, 1 ♂ (M. Ivanov); Skopje (Muzeum), 19.09.2003, 1 ♂ (M. Ivanov); Skopje-Vlae, 20.10.2002, 1 ♀ (V. Krpach); (EM52) Pchinja railroad station, 5.02.1954, 1 ootheca & 25.07.1953, 1 ootheca (FNSM); (EM62) Otovica vill., 17.10.1973, 1 ♀ (Chingovski).

ORTHOPTERA

TETTIGONIOIDEA

Phaneropteridae

Phaneropterinae

Acrometopa servillea servillea (Brullé, 1832)

Material: 1 imago, drawer 18/7. **Localities:** (FL46) Dojran lake, Achikot, 28.06.1994, 1 ♂ (V. Krpach).

Tylopsis lilifolia (Fabricius, 1793)

Material: 9 imagines, drawer 18/7. **Localities:** (DM71/81) Mavrovo, 2.07.1975, 1 ♀ & 19.09.1977, 1 ♂ (Chingovski); (EM34) Vodno Mt., 2.08.1941, 1 ♂, 2 ♀♀ (K. Bogoevski); (EM65) Pchinja vill., 12.07.1962, 1 ♂; (EM70) Gradsko vill., 12.07.1959, 2 ♂♂ (Petkovski); (EM73) Sveti Nikole, 13.08.1939, 1 ♀ (A. Fadejev).

Barbitistinae

Isophya aff. *brevicauda* Ramme, 1931

Material: 1 imago, drawer 18/10. **Localities:** (DM71) Bistra Mt., Carevec pass, 1.07.1972, 1 ♀ (Chingovski).

Isophya speciosa (Frivaldszky, 1865)

Material: 1 imago, drawer 18/10. **Localities:** (FM61) Maleshevo Mts., Breza peak, 22.06.1957, 1 ♂ (Chingovski).

Barbitistes ocskayi Charpentier, 1850

Material: 6 specimens (imagines), drawer 18/10. **Localities:** (EM24?) "Treska", 9.07.1970, 1 ♀ (leg.); (EM24) Matka gorge, 29.06.1959, 2 ♂♂ (Chingovski); (EM62) Novachani vill., 21.06.1974, 1 ♀ (Chingovski); (FL09) Demir Kapija gorge, 25.05.1996, 1 ♂, 1 ♀ (V. Krpach).

Ancistrura nigrovittata (Brunner von Wattenwyl, 1878)

Material: 17 specimens (14 imagines, 3 nymphs), drawer 18/10. **Localities:** (EL99) Negotino, 5.06.1975, 1 ♂, 3 ♀♀ (Chingovski); (EM53?) Kitka Mt., "Kitka", 19.06.1975, 1 ♂ N₁ (Chingovski); (EM62) Otovica vill. (labelled 12.04.1970, probably May/June), 1 ♂ N₁ (Chingovski); (EM63) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♂ (Chingovski); (FL36) Furka vill., 6.06.1975, 2 ♂♂, 1 ♀, 1 ♀ N-1 (Chingovski); (FL46) Dojran lake, 7.06.1975, 2 ♂♂, 4 ♀♀ (Chingovski).

Poecilimon affinis (Frivaldszky, 1867)

Material: 28 specimens (imagines), drawer 18/10. **Localities:** (UTM?) Bistra Mt., 24.07.1985, 11 ♂♂, 5 ♀♀ (Sovkov); (DM71) Bistra Mt., Carevec pass, 1.07.1972, 5 ♂♂, 3 ♀♀ (Chingovski); (DM71/81) Mavrovo, 19.05.1977, 1 ♀ (Chingovski); 5.07.1995, 1 ♀ (V. Krpach); (EL03) Baba Mt., Arvati vill., 16.06.1980, 1 ♂ (Chingovski); (FM15) Osogovo Mts, Ponikva vill., 18.06.1987, 1 ♀ (B. Mihajlova).

Poecilimon gracilis (Fieber, 1853)

Material: 4 specimens (imagines), drawer 18/10. **Localities:** (DM71) Bistra Mt., Carevec pass, 1.07.1972, 1 ♂ (Chingovski); (EM31?) Jakupica Mt., Begovo Pole, 12.09.1984, 1 ♂, 2 ♀♀ (Topukova).

Poecilimon jonicus jonicus (Fieber, 1853)

Material: 7 specimens (imagines), drawer 18/10. **Localities:** (UTM?) Galichica Mt., 17.07.1975, 3 ♂♂, 1 ♀ (Chingovski); (DM71/81) Mavrovo, 4.08.1975, 1 ♀ (Chingovski); (EL03) Baba Mt., Arvati vill., 16.06.1980, 2 ♀♀ (Chingovski).

Poecilimon ornatus (Schmidt, 1849)

Material: 17 specimens (imagines), drawer 18/10. **Localities:** (EL65) Vitolishte vill., 29.05.2003, 3 ♂♂, 4 ♀♀ (E. Stojkoska); (EM34/35) Skopje, 06.1973, 1 ♀ (leg.); (EM53) Katlanovo vill., 5.06.1968, 1 ♂ (Kushhev); (EM62) Otovica vill., 12.06.1970, 1 ♂ (Chingovski); Novachani vill., 21.06.1974, 1 ♂ (Chingovski);

(**EM63**) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♂ (Chingovski); (**FM21**) Radovish, 6.07.1973, 3 ♂♂, 2 ♀♀ (Chingovski).

Poecilimon schmidtii (Fieber, 1853)

Material: 1 specimen (imago), drawer 18/10. **Localities:** (UTM?) Macedonia?, Shar Mt., "Sar, Brezovica", 20.07.1974, 1 ♂ (Chingovski).

Poecilimon thoracicus (Fieber, 1853)

Material: 2 specimens (imagines), drawer 18/10. **Localities:** (UTM?) Macedonia?, Shar Mt., "Sar, Brezovica", 21.07.1974, 2 ♂♂ (Chingovski).

Polysarcus denticauda (Charpentier, 1825)

Material: 12 specimens (imagines), drawer 18/10. **Localities:** (UTM?) Stogovo Mt., 24.07.1985, 8 ♂♂ (Sovkov); (**DL85**) Ohrid, 06.1971, 1 ♂ (Chingovski); (**DM71/81**) Mavrovo, 6.07.1988, 2 ♀♀ (V. Krpach); (**EM95**) Kratovo, 22.06.1963, 1 ♂ (Chingovski).

Tettigoniidae

Tettigoniinae

Decticus albifrons (Fabricius, 1775)

Material: 12 specimens (imagines), drawer 18/14. **Localities:** (UTM?) Stogovo Mt., 24.07.1985, 1 ♂ (Sovkov); "Skopje – Kitka", 9.07.1996, 1 ♂ (V. Krpach); Skopje, "i. Pchinja (SK)", 7.07.1950, 1 ♀ (K. Bogoevski); (**EM34**) Skopje-Lisiche, 1.08.1965, 1 ♀ (Bogoev); (**EM35**) Skopje-Karposh 1, 21.07.2004, 1 ♀ (M. Ivanov); (**EM52?**) Pchinja (station?), 2.07.1950, 1 ♂, 5 ♀♀ (K. Bogoevski; det. M. Karaman); (**FL09**) Demir Kapija gorge, 24.08.1948, 1 ♀ (K. Bogoevski; det. M. Karaman); (**FL46**) Dojran lake, 21.06.1996, 1 ♂ (V. Krpach).

Decticus verrucivorus verrucivorus (Linnaeus, 1758)

Material: 7 specimens (6 imagines, 1 nymph), drawer 18/14. **Localities:** (**EL65**) Vitolishte vill., 27.07.1954, 1 ♂ (M. Karaman; det. M. Karaman); (**EM34**) Vodno Mt., 16.07.1940, 1 ♀ (C. Bogojevich; M. Karaman det. as *D. albifrons* F.); (**EM63**) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♂ (Chingovski); (**FL46**) Dojran lake, 21.06.1996, 1 ♀ (V. Krpach); (**FM21**) Radovish, 6.07.1973, 1 ♂ (Chingovski); (**FM51**) "Berovo-brana", 3.06.1995, 1 ♀ N₁ (V. Krpach).

Platycleis (Platycleis) albopunctata grisea (Fabricius, 1781)

Material: 2 specimens (imagines), drawer 18/14. **Localities:** (UTM?) Bistra Mt., 23.07.1985, 1 ♂ (Topukova); (**EM63**) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♀ (Chingovski).

Platycleis (Platycleis) intermedia intermedia (Serville, 1839)

Material: 2 specimens (imagines), drawer 18/14. **Localities:** (**EM34**) Vodno Mt., 2.10.1941, 1 ♀ (K. Tuleshkov); (**EM63**) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♀ (Chingovski).

Platycleis (Modestana) ebneri ebneri (Ramme, 1926)

Material: 4 specimens (imagines), drawer 18/4. **Localities:** (**DM85**) Shar Mt., Ceripashina peak, 9.09.1954, 3 ♂♂ & 10.09.1954, 1 ♀ (FNSM).

Metrioptera tsirojanni Harz et Pfau, 1983 / *oblongicollis* Brunner von Wattenwyl, 1882

Material: 1 specimen (nymph), drawer 18/4. **Localities:** (**EM34**) Vodno Mt., 15.06.1975, 1 ♂ N₁ (Chingovski).

Pholidoptera cf. griseoptera (De Geer, 1773)

Material: 1 specimen (nymph), drawer 18/14. **Localities:** (**EM24?**) "Treska", 14.05.1942, 1 ♂ small nymph (K. Bogoevski).

Eupholidoptera chabrieri (Charpentier, 1825)

Material: 2 specimens (imagines), drawer 18/6. **Localities:** (EM63) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♂ (Chingovski); (FM17) Osogovo Mts, Koshari vill., 17.09.1975, 1 ♂ (Chingovski).

Eupholidoptera smyrnensis (Brunner von Wattenwyl, 1882)

Material: 1 specimen (imago), drawer 18/6. **Localities:** (FL46) Stari Dojran vill., 1.-4.06.1967, 1 ♂ (Chingovski).

Bucephaloptera bucephala (Brunner von Wattenwyl, 1882)

Material: 1 specimen (nymph), drawer 18/14. **Localities:** (EM73) Sveti Nikole, 13.07.1960, 1 ♂ N₁ (Chingovski).

Psorodonotus fieberi macedonicus (Fieber, 1853)

Material: 28 specimens (27 imagines, 1 nymph), drawer 18/6. **Localities:** (UTM?) Stogovo Mt., 24.07.1985, 7 ♂♂, 4 ♀♀ (Sovkov); Bistra Mt., 13.07.1961, 1 ♂ (Chingovski); (DM71) Bistra Mt., "Mavrovo – Carevec" (Carevec pass), 5.07.1995, 1 ♂, 6 ♀♀ (V. Krpach); (DM71/81) Mavrovo, 15.06.1972, 1 ♂, 1 ♀ N₁ (Chingovski); (DM85) Shar Mt., Ceripashina peak, 10.09.1954, 2 ♂♂, 3 ♀♀ (FNSM; S. Mikshich det. 1 ♂ & 1 ♀ as *P. macedonicus* Rme.); 1700-2500 m, 26.-27.07.1952, 2 ♂♂ (FNSM).

Gampsocleis abbreviata Hermann, 1874

Material: 6 specimens (imagines), drawer 18/6. **Localities:** (UTM?) Kitka Mt., 22.07.1971, 1 ♀ (Chingovski); (EM63) Gradishtanska Mt., 5 ♀♀ (Chingovski).

Tettigonia caudata (Charpentier, 1842)

Material: 1 specimen (nymph), drawer 18/6. **Localities:** (FL46) Dojran lake, Achikot, 5.07.1996, 1 ♀ (V. Krpach).

Tettigonia vidissima Linnaeus, 1758

Material: 22 specimens (14 imagines, 8 nymphs), drawer 18/6. **Localities:** (UTM?) "onsko St.", 25.04.1970, 1 ♂ N₅ (Chingovski); Jakupica Mt., 14.07.1995, 2 ♀♀ (V. Krpach); (DL69) Radika valley, Boshkov Most place, 17.08.1954, 600 m, 1 ♂ (M. Karaman); (DL89) Izvor vill., 21.08.1978, 1 ♀ (Chingovski); (DL98) Ilinska Planina Mt., Belica vill., 11.06.1985, 1 ♀ N₁ (Topukova); (EL03) Baba Mt., Arvati vill., 16.06.1980, 1 ♂, 1 ♂ & 1 ♀ nymphs LI (Chingovski); (EM13) Treska valley, "Kozjak-brana", 1.10.1994, 1 ♀ (V. Krpach); (EM34/35) Skopje, 16.06.1942, 1 ♂ ("G. St."); 25.06.1991, 1 ♂ (Topukova); (EM35) Skopje-Karposh 1, 4.07.2004, 1 ♀ (M. Ivanov); Skopje (Museum), 30.06.2003, 1 ♀ & 12.09.2002, 1 ♀ (M. Ivanov); (EM44) Trubarevo vill., 25.?.1957, 1 ♂ N₅ (FNSM); (EM63) Gradishtanska Mt., Breznica vill. ("Brezica"), 4.07.2000, 1 ♀ (M. Ivanov); (FL25) Negorska Banja vill. ("Gevgelijsko Banje"), 26.04.1957, 2 N₂ (FNSM); (FL46) Dojran lake, Achikot, 28.06.1994, 1 ♀ (V. Krpach); (FM01) Lakavica vill., 20.05.1981, 1 ♀, 1 ♂ N₄ (Chingovski).

Bradyporinae

Ephippiger ephippiger ephippiger (Fiebig, 1784)

Material: 8 specimens (6 imagines, 2 nymphs), drawer 18/14. **Localities:** (UTM?) Galichica Mt., 30.08.1977, 1 ♂ (Chingovski); Bistra Mt., 29.07.1985, 1 ♂ (Topukova); Kozhuf Mt., "Golema Poljana", 15.?.1958, 1 N₁ (FNSM); (EM53) Katlanovo vill., 3.06.1968, 1 ♀ N₁ (Kushev); (EM62) Otovica vill., 17.10.1973, 1 ♂ (Chingovski); (FM15) Osogovo Mts, Ponikva vill., 1550-1600 m, 28.06.1987, 1 ♀ (B. Mihajlova); (FM17) Osogovo Mts, Koshari vill., 17.09.1975, 1 ♂, 1 ♀ (Chingovski).

Saginae

Saga natoliae Serville, 1839

Material: 17 specimens (16 imagines, 1 nymph), drawer 18/15. **Localities:** (EL68) Trojaci vill. ("Trojanci"), 17.06.1997, 1 ♀ N₁ (V. Krpach); (EM34/35) Skopje, "Skopje-Trim.", 7.07.1942, 1 ♂ (K. Tuleshkov) (18/2); (EM44) Skopje-Drachevo, 14.07.1995, 1 ♀ (V. Krpach) (18/2); (EM62) Otovica vill., 19.07.1967, 1 ♂ (Chingovski) (18/2); (FL46) Dojran lake, Achikot, 28.06.1994, 3 ♂♂, 4 ♀♀ & 5.07.1996, 2 ♂♂, 4 ♀♀ (V. Krpach).

Saga hellenica Kaltenbach, 1967

Material: 1 specimen (imago), drawer 18/15. **Localities:** no label, 1 ♂.

Saga rammei Kaltenbach, 1967

Material: 1 specimen (nymph), drawer 18/15. **Localities:** (EM72) Dorfulija vill., 15.06.1997, 1 ♂ N₁ (V. Krpach).

Conocephalinae

Conocephalus fuscus (Fabricius, 1793)

Material: 1 specimen (imago), drawer 18/14. **Localities:** (EM35) Skopje (Zool. garden), 12.08.1939, 1 ♂ (C. Bogojevich).

Ruspolia nitidula (Scopoli, 1786)

Material: 5 specimens (4 imagines, 1 nymph), drawer 18/14. **Localities:** (EM34/35) Skopje, 24.08.1941, 1 ♀ & 6.09.1941, 1 ♀ & 14.09.1941, 1 ♀ ("G. St."); (EM35) Skopje-park, 14.07.1954, 1 ♂ N₁ (M. Karaman); Skopje (Zool. garden), 12.08.1939, 1 ♂ (C. Bogojevich).

RHAPHIDOPHOROIDEA

Rhaphidophoridae

Dolichopodinae

Dolichopoda remyi Chopard, 1934

Material: 2 specimens (1 imago, 1 nymph), drawer 18/17. **Localities:** (FL09) a cave in Demir Kapija gorge, 12.10.1943, 1 ♀ nymph (K. Tuleshkov); 14.10.1943, 1 ♂ (K. Tuleshkov; Z. Karaman det. as *D. hussoni* Charp.).

Troglophilinae

Troglophilus neglectus neglectus Krauss, 1879

Material: 14 specimens (1 imago, 13 nymphs), drawer 18/17. **Localities:** (EM24) Sveta Nedelja cave in Matka gorge, 6.11.1942, 1 ♀, 2 ♂♂ & 11 ♀♀ N₁₋₂ (K. Tuleshkov; Z. Karaman det. as *T. cavicola* Koll.).

GRYLLOIDEA

Gryllidae

Gryllinae

Gryllus campestris Linnaeus, 1758

Material: 30 specimens (12 imagines, 18 nymphs), drawer 18/19. **Localities:** (UTM?) "Biljanovski monastir", 8.06.1955, 1 ♀ (K. Bogoevski); Bistra Mt., 7.06.1996, 1 ♀ (V. Krpach); "Tetovsko", 9.09.1954, 2 ♀♀ N₅ (FNSM); Ossogovska Planina Mts, "Toponica Kriva Palanka", 14.06.1989, 1 ♂ (Topukova); (DL84) Galichica Mt., Korita place, 25.06.2003, 1 ♀ (M. Ivanov); (DL89) Bistra Mt., Izvor vill., 21.06.1978, 1 ♀ (Chingovski); (DL98) Ilinska Planina Mt., Belica vill., 11.06.1985, 1 ♀ (Topukova); (DM71/81) Mavrovo, 19.05.1977, 1 ♂ & 16.07.1981, 1 ♂ (Chingovski); (DM90) Oslomej vill., 18.09.1981, 1 ♀ nymph (Chingovski); (DM95) Shar Mt., Lisec vill., 9.09.1964, 6 N₃₋₅, (FNSM); (EL08) Cer vill., 17.09.1981, 2 ♀♀ nymphs (Chingovski); (EL29) Barbaros vill., 16.09.1981, 1 ♀ nymph (Chingovski); (EM23) Jakupica Mt., Nova Breznica vill., 26.05.1986, 1 ♂, 1 ♀ (B. Mihajlova); (EM33) Torbeshija region, Markov Manastir monastir, 5.04.1977, 1 ♀ N₁ (Chingovski); (EM34) Vodno Mt., 18.10.1942, 1 ♂ & 1 ♀ nymphs (K. Tuleshkov); (EM53) Katlanovo vill., 30.04.1972, 1 ♀ N₁ (Chingovski); (EM54) Petrovec vill., 30.09.1953, 1 ♀ N₅, (FNSM); (FM14) Kochani, 20.10.1941, 1 ♂ nymph (K. Tuleshkov); (FM17) Osogovo Mts, Osogovski Manastir monastir, 18.-21.05.1957, 1 ♂, 1 ♀ (FNSM).

Melanogryllus desertus (Pallas, 1771)

Material: 30 specimens (16 imagines, 14 nymphs), drawer 18/19. **Localities:** (UTM?) Skopje? ("Jzr. Rashe (SK)"), 3.08.1952, 1 ♀ N₁ (FNSM); (DL85) Ohrid, 15.05.1975, 1 ♀ & 06.1971, 1 ♀ (Chingovski); (DL94) Prespa lake, Gorno Perovo vill., 22.03.1957, 1 ♂ & 1 ♀ nymphs LI (FNSM); (DM90) Oslomej vill., 18.09.1981, 1 ♂ N₁ (Chingovski); (DM92) Gostivar, 6.06.1953, 1 ♂ (FNSM); (EL03) Prespa lake, "Jezerane – Resen", 25.-28.06.1954, 1 ♀ (FNSM); (EM25) Skopje-Volkovo, 30.05.1971, 1 ♀ (Chingovski); (EM34) Skopje-Kisela Voda, 10.04.1954, 1 ♀ nymph & 26.04.1954, 1 ♂ N₁, 2 ♀♀ smaller nymphs (FNSM); Vodno Mt., 13.06.1954, 1 ♀ (FNSM); (EM45) Skopska Crna Gora Mt., Bulachani vill., 2.06.1954, 1 ♀ (FNSM); (EM53) Katlanovo vill., 1.06.1967, 1 ♂, 1 ♀ N₁ & 27.06.1959, 1 ♀ (Chingovski); (EM54) Petrovec vill., 9.06.1957, 1 ♂ (Chingovski); (EM55) Agino Selo vill., 5.05.1978, 1 ♂, 1 ♂ N₁ & 16.05.1963, 1 ♂ (Chingovski); (EM62) Novachani vill., 21.06.1974, 1 ♀ (Chingovski); (EM65) Pchinja vill., 15.08.1952, 1 ♂ nymph (leg.); (EM73) Sveti Nikole, 22.04.1960, 1 ♀ N₁ (Chingovski); (FL25) Negorska Banja vill. ("Banja Gev."), 28.04.1954/57?, 1 ♀ N₁ (FNSM); (FL25/26) Negorci vill., 3.05.1968, 1 ♀ N₁ (Topukova); (FL46) Stari Dojran vill., 26.05.1996, 1 ♀ (V. Krpach); (FL48) Bansko vill., 21.05.1981, 2 ♂♂ (Chingovski).

Tartarogryllus tartarus (Saussure, 1874)

Material: 1 specimen (nymph), drawer 18/19. **Localities:** (EM34) Sopsishte vill., 22.03.1953, 1 ♂ nymph (leg.).

Eumodicogryllus bordigalensis bordigalensis (Latreille, 1804)

Material: 3 specimens (1 imago, 2 nymphs), drawer 18/19. **Localities:** (EM52) Pchinja station, 5.08.1951, 1 ♀ (FNSM); (EM54) Taor - Petrovec vills., 8.04.1957, 1 ♀ nymph (FNSM); (EM65) Pchinja vill., 15.10.1952, 1 ♀ N₁ (leg.).

Gryllomorphae

Gryllomorpha (Gryllomorpha) dalmatina (Ocskay, 1832)

Material: 1 specimen (imago), drawer 18/19. **Localities:** (EM35) Skopje-Karposh 2, 22.09.2002, 1 ♀ (A. Ololovski).

Ovaliptila newmanae (Harz, 1969)

Material: 1 specimen (imago), drawer 18/19. **Localities:** (EM34) Vodno Mt., Sveti Spas church, 27.04.1942, 1 ♀ (specimen damaged) (K. Tuleshkov).

Nemobiinae

Pteronemobius heidenii heidenii (Fischer, 1853)

Material: 2 specimens (1 imago, 1 nymph), drawer 18/19. **Localities:** (EM15) Jegunovce vill. ("Jogunovci"), 8.04.1957, 1 ♀ nymph (FNSM); (EM52) Pchinja station, 5.-11.08.1954, 1 ♂ (macropterous) (FNSM; det. S. Mikshich).

Oecanthinae

Oecanthus pellucens pellucens (Scopoli, 1763)

Material: 4 specimens (imagines), drawer 18/4. **Localities:** (EM24?) "Treska", 28.09.1941, 1 ♀ (leg.; det. S. Mikshich); (EM34) Vodno Mt., 2.08.1941, 1 ♀ (K. Bogoevski); (EM53) Katlanovo vill., 18.07.1967, 1 ♂, 3 ♀♀ (FNSM).

Gryllotalpidae

Gryllotalpinae

Gryllotalpa gryllotalpa (Linnaeus, 1758)

Material: 2 specimens (imagines), drawer 18/13. **Localities:** Ohrid, 06.1971, 1 ♂, 1 ♀ (Chingovski).

Gryllotalpa stepposa Zhantiev, 1991

Material: 22 specimens (18 imagines, 4 nymphs), drawer 18/13. **Localities:** (UTM?) Vardar valley, Region of Skopje ("Skopsko"), 05.1978, 1 ♀, 1 nymph (B. Mihajlova); (EM25) Skopje-Shishevo, 22.04.1990, 1 ♂ (Topukova); (EM34) Vodno Mt., 8.05.1976, 1 ♀ (Chingovski); (EM34/35) Skopje, 10.03.1982, 1 ♀ (E. Stojkoska); 9.04.1984, 1 ♂ (Chingovski); 6.05.1985, 1 ♀ (Topukova); 9.05.1986, 1 ♀ (Topukova); 25.05.1985, 1 ♂ (Topukova); 8.06.1974, 1 ♀ (Chingovski); (EM35) Skopje-Karposh 1, 9.04.2004, 2 ♂♂, 1 N₁ & 1.05.2004, 1 ♀ & 4.05.2003, 1 ♂ & 1.06.2003, 1 ♂ & 14.06.2004, 1 N₁ & 19.09.2004, 1 ♀ & 17.10.2004, 1 ♂ (M. Ivanov); Skopje (Zool. Garden), 19.06.2002, 1 ♂ (A. Ololovski); (EM62) Otovica vill., 16.04.1969, 1 nymph (Chingovski); (FL25) Negorska Banja vill. ("Banja, Gev."), 18.04.1957, 1 ♂ (FNSM).

TRIDACTYLOIDEA

Tridactylidae

Tridactylinae

Xya pfaendleri (Harz, 1970)

Material: 2 specimens (imagines), drawer 18/17. **Localities:** (EM25) Skopje-Shishevo –Gorche Petrov, 9.04.1955, 1 ♂, 1 ♀ (FNSM).

TETRIGOIDEA

Tetrigidae

Tetriginae

Paratettix meridionalis (Rambur, 1838)

Material: 1 specimen (imago), drawer 18/17. **Localities:** (FL46) Dojran lake, Mlaz hotel, 10.06.1997, 1 ♀ (V. Krpach).

Tetrix bolivari Saulcy, 1901

Material: 5 specimens (imagines), drawer 18/17. **Localities:** (EM15) Jegunovce ("Jogunovci"), 9.04.1957, 1 ♀ (FNSM); (EM54) Taor - Petrovec vills., 3.04.1957, 3 ♂♂, 1 ♀ (FNSM).

Tetrix subulata (Linnaeus, 1758)

Material: 11 specimens (imagines), drawer 18/17. **Localities:** (UTM?) Kozhuf Mt., "Golema Poljana", 14.05.1956, 1 ♂ (FNSM); (DL69) Radika valley, Boshkov Most place, 17.08.1954, 1 ♂, 4 ♀♀ (M. Karaman; det. S. Mikshich); (EM15) Jegunovce ("Jogunovci"), 9.04.1957, 1 ♂, 2 ♀♀ (FNSM); (EM54) Taor - Petrovec vills., 3.04.1957, 1 ♂, 1 ♀ (FNSM).

Tetrix tenuicornis Sahlberg, 1893

Material: 8 specimens (1 imago, 7 nymphs), drawer 18/17. **Localities:** (UTM?) "Tetovsko", 9.09.1954, 1 ♀ N₁ (FNSM; det. M. Karaman); (DL69) Radika valley, Boshkov Most place, 17.08.1954, 1 ♂, 1 ♂ & 2 ♀♀ nymphs LI (M. Karaman); (EM34/35) Skopje ("Skoplje"), 9.02.1941, 1 ♀ N₁, 2 ♀♀ nymphs (Poplava?).

Tetrix depressa (Brisout de Barneville, 1849)

Material: 2 specimens (imagines), drawer 18/17. **Localities:** (EM34) Vodno Mt., 2.04.1954, 1 ♂ (FNSM; M. Karaman det. as *Tetrix depressa* Bris. f. *acuminata* Brulle); (FM14) Kochani, 20.10.1941, 1 ♂ (K. Tuleshkov; det. M. Karaman).

ACRIDOIDEA

Pamphagidae

Akicerinae

Asiotmethis limbatus Charpentier, 1845

Material: 21 specimens (imagines), drawer 18/5. **Localities:** (EM53) Vardar valley, Taor vill., 16.06.1943, 1 ♂ (K. Tuleshkov); (EM63) Gradishtanska Mt., Crni Vrv, 22.07.1971, 7 ♂♂, 8 ♀♀ (Chingovski); (FL09) Demir Kapija gorge, 5.06.1985, 1 ♀ (B. Mihajlova); (FM24) Bregalnica valley, Orizari vill., 17.06.1987, 4 ♀♀ (B. Mihajlova).

Glyphotmethis heldreichi (Brunner von Wattenwyl, 1882)

Material: 3 specimens (imagines), drawer 18/5. **Localities:** (EM72) Durfulija vill., 15.06.1997, 1 ♀ (V. Krpach); (EM90/FM00) Konechka Planina Mt., 3.07.1985, 1 ♂ (Topukova); (FL46) Dojran lake, Achikot, 28.06.1994, 1 ♀ (V. Krpach).

Acrididae

Calliptaminae

Calliptamus barbarus barbarus (Costa, 1836)

Material: 3 specimens (imagines), drawer 18/3. **Localities:** (EM34) Vodno Mt., 2.08.1941, 1 ♀ ("G. St."); (EM34/35) Skopje, 14.09.1941, 2 ♀♀ ("G. St.").

Calliptamus barbarus / italicus

Material: 5 specimens (nymphs), drawer 18/3. **Localities:** (UTM?) Vitachevo region, 5 ♀♀ nymphs LI (leg.?).

Calliptamus italicus (Linnaeus, 1758)

Material: 41 specimens (40 imagines, 1 nymph), drawer 18/3. **Localities:** (UTM?) Prilep region ("Prilepsko"), 18.06.1947, 1 ♀ (J. Ikonov, det. M. Karaman); Stogovo Mt., 31.08.1985, 1 ♀ (Topukova); (DL69) Radika valley, Boshkov Most place, 600 m, 16.08.1954, 1 ♀ & 17.08.1954, 2 ♂♂ (leg. & det. M. Karaman); (EL13) Baba Mt., Lovechka Koliba place, 1950 m, 26.08.2001, 1 ♂ (V. Krpach); (EM15/25) Rashche vill., 13.10.1938, 1 ♀ (leg.); (EM34) Vodno Mt., 1.08.1942, 9 ♂♂, 7 ♀♀ (K. Bogoev); 2.08.1941, 1 ♀ ("G. St."); 8.08.1941, 3 ♀♀ ("G. St."); 9.08.1954, 1 ♀ (M. Karaman); 2.10.1941, 1 ♂ ("G. St.", det. M. Karaman); Vodno peak, 29.07.1940, 1000-1066 m, 1 ♀ (D. Rucner); (EM35) Skopje-park, 15.07.1954, 1 ♀, 1 ♀ N₁ (M. Karaman); 15.07.1964, 1 ♀ (leg. & det. M. Karaman); (EM63) Gradishtanska Mt., Crni Vrv, 22.07.1971, 5 ♀♀ (Chingovski); (FL46) Dojran lake, 5.08.1985, 2 ♀♀ (Sovkov).

Cyrtacanthacridinae

Anacridium aegyptium (Linnaeus, 1764)

Material: 9 specimens (imagines), drawer 18/24. **Localities:** (UTM?) Koturski Dol, 20.06.2002, 1 ♂, 1 ♀ (V. Krpach); (EM34) Varvara vill., 29.04.1981, 1 ♀ (Chingovski); (EM34/35) Skopje, 1937, 1 ♀ (leg.); (EM34) Skopje (Zool. garden), 17.04.1939, 1 ♀ (M. Karaman); (EM72) Dzhumajlia vineyards near Lozovo vill. 20.05.1971, 1 ♀ (Chingovski); (FL09) Demir Kapija gorge, 24.08.1948, 1 ♂ (K. Bogoev); (FL25) Negorska Banja vill. (labelled Banja Gev.), 27.04.1952, 2 ♀♀ (FNSM).

Catantopinae

Melanoplus frigidus frigidus (Boheman, 1846)

Material: 5 specimens (imagines), drawer 18/9. **Localities:** (?EM31) Jakupica Mt., 14.09.1984, 1 ♂ (Topukova); Jakupica Mt., Begovo Pole plateau, 12.09.1984, 2 ♂♂, 2 ♀♀ (Topukova).

Podisma pedestris pedestris (Linnaeus, 1758)

Material: 1 specimen (imago), drawer 18/9. **Localities:** (EM44) Skopje – Drachevo, 4.06.1941, 1 ♀ ("G. St.", det. S. Mikshich; det. M. Karaman).

Oropodisma macedonica Ramme, 1951

Material: 10 specimens (imagines), drawer 18/9. **Localities:** (DM85) Shar Mt., Ceripashina peak, 9.09.1954, 1 ♀; 10.09.1954, 6 ♀♀; Shar Mt., Jelak place, 12.-13.09.1954, 2 ♀♀ (material damaged); (DM84) Turchin peak (Titov Vrv), 13.-14.09.1954, 1 ♂ (all leg. FNSM, det. M. Karaman) (material damaged).

Pezotettix giornae (Rossi, 1794)

Material: 25 specimens (imagines), drawer 18/9. **Localities:** (UTM?) Kozhuf Mt., "Golema Poljana", 18.[wrongly labelled 05].1958, 1 ♂ (FNSM); (DL69) Radika valley, Boshkov Most place, 17.08.1954, 1 ♂, 2 ♀♀ (leg. & det. M. Karaman); (DM70) Bistra Mt., Tresonche vill., 23.-24.08.1954, 1 ♂ & 24.-25.08.1954, 1 ♂, 1 ♀ (leg. & det. M. Karaman); (EM34) Vodno Mt., 4.10.1959, 1 ♀ (Chingovski); Skopje-Kisela Voda, 6.10.1955, 1 ♂, 5 ♀♀ (FNSM); (EM35) Skopje-park, 12.08.1957, 1 ♀ (FNSM); 11.09.1957, 1 ♀ (Chingovski); (EM55/56) Romanovce vill., 10.09.1952, 2 ♀♀ (FNSM, det. M. Karaman); 16.10.1952, 2 ♂♂, 1 ♀ (leg.?) ; (EM65) Pchinja vill., 15.10.1952, 2 ♂♂, 2 ♀♀ (leg.?, det. M. Karaman).

Acridinae

Acrida ungarica (Herbst, 1786)

Material: 31 specimens (28 imagines, 3 nymphs), drawer 18/5. **Localities:** (UTM?) Bitola region ("Bitolsko"), 1956, 1 ♀ (leg.?) ; (EM15/25) Rashche vill., 13.10.1938, 1 ♂ (leg.?) ; (EM24) Matka gorge, 08.1975, 1 ♀ (Topukova); (EM25) Kuchkovo vill., 4.09.1939, 1 ♀ (Ch. Bogoevich); (EM34) Vodno Mt., 2.08.1941, 1 ♂ (leg.?) (S. Mikshich det. as *A. mediterranea* Dirsh.); 12.08.1941, 2 ♀♀ ("G. St."); 15.08.1941, 1 ♂ (K. Bogoev); 15.10.1983, 1 ♀ (Popov); (EM34/35) Skopje, 23.08.1941, 2 ♀♀ ("G. St."); 24.08.1941, 1 ♀ ("G. St."); 5.09.1941, 2 ♀♀ ("G. St."); 15.09.1988, 1 ♀ (V. Krpach); 19.09.1941, 2 ♂♂ (K. Bogoev) & 1 ♀ ("G. St."); 09.1974, 1 ♀ (Chingovski); (EM35) Skopje-Gazi Baba hill (labelled "Fakultet"), 10.08.1953, 300 m, 1 ♀ N₁ (P. Atanasov); Katlanovo vill., 5.[?08.(wrongly labelled 06)].1968, 2 ♀♀ (Kushev); (EM65) Pchinja vill., 15.10.1952, 1 ♂ (leg.?) ; (FL16) Kozhuf Mt., Sermenin vill. 13.09.1970, 550-600 m, 1 ♀ (Chingovski); (FL25/26) Negorci vill., 31.07.1969, 60-100 m, 2 ♂♂, 1 ♀ nymph (Chingovski); (FL26) Negorci vill., 9.[?08.(wrongly labelled 05)].1962, 1 ♀ (Chingovski); (FL46) Dojran lake, Achikot, 200-300 m, 13.9.2000, 1 ♀ (E. Stojkoska) & 1 ♀ (Stankovich); (FM14) Kochani, 25.07.1954, 1 ♀ N₁ (leg.?).

Oedipodinae

Locusta migratoria cinerascens (Fabricius, 1781)

Material: 1 specimen (imago), drawer 18/18. **Localities:** (EM54) Petrovec vill., 30.09.1952, 1 ♀ (FNSM).

Oedaleus decorus (Germar, 1826)

Material: 29 specimens (imagines), drawer 18/18. **Localities:** (EM14?) Bojanovci vill. (=Bojane vill.?), 19.07.1942, 1 ♂ (K. Bogoevski); (EM15/25) Rashche vill., 13.10.1938, 1 ♀ (leg.?) ; (EM34) Vodno Mt., 2.08.1941, 1 ♀ ("G. St."); 8.08.1954, 3 ♀♀ (M. Karaman) & 1 ♀ ("G. St."); 15.08.1941, 1 ♀ (K. Bogoevski); 2.10.1941, 1 ♀ ("G. St.).

Psophus stridulus (Linnaeus, 1758)

Material: 2 specimens (imagines), drawer 18/18. **Localities:** (DM61) Deshat Mt., 25.09.1987, 2 ♂♂ (V. Krpach).

Celes variabilis variabilis (Pallas, 1771)

Material: 29 specimens (imagines), drawer 18/20. **Localities:** (UTM?) Ovche Pole region, 13.06.2002, 1 ♂ (T. Ivanovski); (EM34) Vodno Mt., 5.07.1942, 1 ♂ (K. Bogoev; det. M. Karaman); 8.07.1954, 1 ♂ (M. Karaman; det. M. Karaman); 10.07.1940, 1 ♀ (D. Rucner; det. M. Karaman); 29.07.1940, 2 ♂♂, 1 ♀ (C. Bogoevich; det. M. Karaman); 1.08.1942, 3 ♂♂, 1 ♀ (K. Bogoev; det. M. Karaman); 8.08.1941, 9 ♂♂ ("G. St."; det. M. Karaman; M. Karman det. 1 ♂ as f. *carbonaria*); 15.08.1941, 1 ♂ (K. Bogoev; det. M. Karaman); 17.08.1941, 1 ♀ ("G. St."); Vodno peak, 29.07.1940, 2 ♂♂ (D. Rucner; M. Karaman det. as *C. variabilis* f. *carbonaria*); (EM52) Pchinja station, 7.07.1942, 1 ♂ (K. Tuleshkov; det. M. Karaman); (EM53?) Kitka Mt.? ("Kitka (SK)"), 22.07.1971, 1 ♂ (Chingovski); (EM63) Gradishtanska Mt., Crni Vrv, 22.07.1971, 1 ♂, 2 ♀♀ (Chingovski).

Oedipoda caerulea (Linnaeus, 1758)

Material: 34 specimens (33 imagines, 1 nymph), drawer 18/20. **Localities:** (UTM?) Koturski Dol, 9.10.1996, 1 ♀ (V. Krpach); Bistra Mt., 23.07.1985, 1 ♀ (Topukova); (DL69) Bistra Mt., Boshkov Most place, 17.08.1954, 1 ♂, 2 ♀♀ (M. Karaman; M. Karaman det.); Boshkov Most place, 600 m, 16.08.1954, 1 ♀ (M. Karaman); (DM70) Bistra Mt., Tresonche vill., 24.-25.08.1954, 1 ♀ (M. Karaman; M. Karaman det.); (EL08) Cer vill., 17.09.1981, 1 ♀ (Chingovski); (EL13) Baba Mt., Lovechka Koliba place, 26.08.2001, ~1950 m, 1 ♂ (V. Krpach); (EL14) Baba Mt., Kopanki place, 14.07.1956, 1620 m, 1 ♀ N₁ (FNSM); (EM15/25) Rashche vill., 13.10.1938, 1 ♀ (leg.?.; M. Karaman det.); (EM34) Vodno Mt., 1.08.1942, 1 ♀ (K. Bogoev; M. Karaman det.) & 5 ♀♀ (K. Tuleshkov); (EM34/35) Skopje ("Skopje"), 30.08.1939, 1 ♂ (Z. Karaman; M. Karaman det.); (EM35) Skopje-park, 14.07.1954, 1 ♂, 1 ♀ (leg. & det. M. Karaman); (EM55/56) Romanovce vill., 10.09.1952, 1 ♀ & 16.10.1952, 1 ♀ (FNSM; M. Karaman det.); (EM63) Gradishtanska Mt., Crni Vrv, 22.07.1971, 5 ♀♀ (Chingovski); (FM17) Osogovo Mts, Koshari vill., 17.09.1975, 1 ♂ (Chingovski); (FM22) Plachkovica Mt., Kozbunar vill., 19.07.1947, 1000-1200 m, 1 ♀ (K. Bogoev).

Oedipoda germanica (Latreille, 1804)

Material: 8 specimens (imagines), drawer 18/20. **Localities:** (UTM?) Tetovo region ("Tetovsko"), 9.09.1954, 1 ♀ (FNSM); (DM61) Deshat Mt., 25.09.1987, 1 ♀ (V. Krpach); (EL14) Baba Mt., Jorgov Kamen place, 1580 m, 11.09.1952, 1 ♂ (FNSM); 1740 m, 24.08.2001, 1 ♀ (V. Krpach); (EM15/25) Rashche vill., 13.10.1938, 1 ♀ (leg.?.); (EM34) Vodno Mt., 22.06.1955, 1 ♀ (M. Karaman); (EM36) Banjane vill., 16.08.1940, 1 ♀ (C. Bogojevich); (EM65) Pchinja vill., 16.10.1952, 1 ♂ (leg.?.).

Oedipoda miniata miniata (Pallas, 1771)

Material: 1 specimen (imago), drawer 18/20. **Localities:** (EM35) Skopje (Zool. Garden), 12.08.1939, 1 ♀ (C. Bogojevich; det. M. Karaman).

Sphingonotus caerulea caerulea (Linnaeus, 1767)

Material: 10 specimens (imagines), drawer 18/20. **Localities:** (DL69) Radika valley, Boshkov Most place, 17.07.1954, 1 ♂ (M. Karaman); (EM34) Vodno Mt., 8.08.1941, 1 ♀ ("G. St."); (EM34/35) Skopje, 14.09.1941, 3 ♀♀ ("G. St."); (FL09) Demir Kapija gorge, 24.08.1948, 4 ♂♂, 1 ♀ (K. Bogoevski).

Acrotylus insubricus (Scopoli, 1786)

Material: 9 specimens (imagines), drawer 18/18. **Localities:** (EM34) Vodno Mt., 22.03.1936, 1 ♀ & 22.09.1936, 1 ♂ (S. Karaman); Skopje-Kisela Voda, 20.02.1955, 1 ♂ & 27.02.1955, 2 ♂♂, 1 ♀ (M. Karaman); (EM34/35) Skopje, 14.09.1941, 1 ♂ ("G. St."; det. S. Mikshich); (FL25) Negorska Banja vill. ("Banja, Gev."), 26.04.1957, 1 ♀ (FNSM); (FL46) Dojran lake, 25.05.1988, 1 ♀ (Topukova).

Acrotylus patruelis (Herrich-Schäffer, 1838)

Material: 7 specimens (imagines), drawer 18/18. **Localities:** (UTM?) Shtip – Radovish, 4.07.1946, 1 ♀ (K. Bogoevski); (EM34) Skopje-Kisela Voda, 6.10.1955, 2 ♀♀ (FNSM); (EM34/35) Skopje, 20.08.1939, 1 ♂ (leg. & det. M. Karaman); 20.11.1943, 1 ♂ (K. Tuleshkov); (EM55/56) Romanovce vill., 16.10.1952, 1 ♂ (leg.?.; det. M. Karaman); (EM65) Pchinja vill., 15.10.1952, 1 ♀ (leg.?.).

Acrotylus longipes longipes (Charpentier, 1845)

Material: 2 specimens (imagines), drawer 18/18. **Localities:** (EM34/35) Skopje, 14.09.1941, 1 ♂, 1 ♀ ("G. St.").

Aiolopus strepens (Latreille, 1804)

Material: 31 specimens (30 imagines, 1 nymph), drawer 18/16. **Localities:** (DL69) Radika valley, Boshkov Most place, 16.08.1954, 2 ♀♀ & 17.08.1954, 4 ♀♀ (M. Karaman); (EL14) Baba Mt., Jorgov Kamen place, 11.09.1952, 1 ♂ (FNSM); (EM24?) Treska valley (Skopje), 28.09.1941, 2 ♀♀ (K. Tuleshkov); (EM34/35) Skopje, 6.09.1941, 13 ♂♂, 4 ♀♀ ("G. St."); (EM35) Skopje-park, 11.09.1957, 1 ♂ (Chingovski); Skopje (Zool. Garden), 12.08.1939, 2 ♀♀ (C. Bogojevich); (EM54) Petrovec vill., 07.1967, 1 ♀ N₁ (Chingovski); (FL46) Dojran lake, 25.05.1988, 1 ♀ (Topukova).

Aiolopus thalassinus thalassinus (Fabricius, 1781)

Material: 8 specimens (imagines), drawer 18/16. **Localities:** (EM34) Skopje-Madzhari, 10.1952, 1 ♂ (FNSM); (EM35) Skopje (Zool. Garden), 12.08.1939, 1 ♀ (C. Bogojevich); (EM53) Katlanovsko Ezero lake, 17.10.1938, 1 ♂, 2 ♀♀ (leg.?); (EM55/56) Romanovce vill., 10.09.1952, 1 ♂, 2 ♀♀ (FNSM).

Stethophyma grossum (Linnaeus, 1758)

Material: 3 specimens (2 imagines, 1 nymph), drawer 18/18. **Localities:** (DM61) Deshat Mt., 25.09.1987, 2 ♀♀ (V. Krpach); (EM53) Katlanovo vill., 1.06.1967, 1 ♀ N₁ (Chingovski).

Paracinema tricolor bisignata (Charpentier, 1825)

Material: 1 specimen (imago), drawer 18/20. **Localities:** (DL85?) "Ohrid – Lakica", 22.07.1939, 1 ♀ (Z. Karaman).

Gomphocerinae

Arcyptera fusca (Pallas, 1773)

Material: 2 specimens (imagines), drawer 18/23. **Localities:** (UTM?) Skopska Crna Gora Mt., 22.07.1987, 1 ♂ (Topukova); (DM85) Shar Mt., Ceripashina peak, 1700-2500 m, 26.-27.07.1952, 1 ♂ (FNSM).

Arcyptera microptera microptera (Fischer de Waldheim, 1833)

Material: 3 specimens (imagines), drawer 18/23. **Localities:** (EM34) Vodno Mt., 10.07.1940, 3 ♀♀ (D. Rucner).

Pallasiella turcomana (Fischer de Waldheim, 1846)

Material: 1 specimen (imago), drawer 18/23. **Localities:** (EM34) Vodno Mt., 17.07.1954, 1 ♂ (M. Karaman).

Dociostaurus maroccanus (Thunberg, 1815)

Material: 4 specimens (3 imagines, 1 nymph), drawer 18/23. **Localities:** (EM34) Vodno Mt., 1.08.1942, 1 ♂ (K. Tuleshkov); (FL36) Furka vill., 6.06.1975, 1 ♀, 1 ♀ N₁ (Chingovski); (FL37) Kosturino vill., 5.06.1986, 1 ♀ (B. Mihajlova).

Dociostaurus brevicollis (Eversmann, 1848)

Material: 9 specimens (imagines), drawer 18/23. **Localities:** (DL79) Bistra Mt., Lazaropole vill., 10.07.1996, 2 ♂♂ (V. Krpach); (DM71/81) Mavrovo, 24.07.1971, 2 ♀♀ (Topukova); 4.08.1975, 1 ♀ (Chingovski); (EM34) Vodno Mt., 1.08.1942, 1 ♀ (K. Tuleshkov); (EM34/35) Skopje, 2.08.1941, 1 ♀ ("G. St."); 14.09.1941, 1 ♀ ("G. St."); (FL46) Dojran lake, 6.06.1975, 1 ♂ (Chingovski).

Dociostaurus (Notostaurus) anatolicus (Krauss, 1896)

Material: 1 specimen (imago), drawer 18/23. **Localities:** (EM34) Vodno Mt., 2.08.1941, 1 ♀ ("G. St.").

Stenobothrus stigmaticus (Rambur, 1839)

Material: 1 specimen (imago), drawer 18/3. **Localities:** (DM95) Shar Mt., Popova Shapka resort, 13.09.1954, 1 ♀ (FNSM).

Stenobothrus fischeri fischeri (Eversmann, 1848)

Material: 3 specimens (imagines), drawer 18/3. **Localities:** (EM34) Vodno Mt., 10.07.1940, 1 ♂ (D. Rucner); Vodno peak, 29.07.1940, 1 ♂ (D. Rucner); (EM63) Gradishtanska Mt., Crni Vrv peak, 22.07.1971, 1 ♀ (Chingovski).

Stenobothrus lineatus lineatus (Panzer, 1796)

Material: 2 specimens (imagines), drawer 18/3. **Localities:** (DM60) Deshat Mt., Skudrinje vill. - Debar, 4.07.1995, 1 ♂ (V. Krpach); (EM34) Vodno Mt., 1.08.1942, 1 ♀ (K. Bogoev).

Stenobothrus rubicundulus Kruseman et Jeekel, 1967

Material: 14 specimens (imagines), drawer 18/3. **Localities:** (UTM?) Stogovo Mt., 24.07.1985, 4 ♂♂ (Sovkov); Bistra Mt., 15.07.1961, 1 ♂ (Chingovski); Baba Mt. ("Pelister"), 14.07.1956, 8 ♂♂ (FNSM); (EM36) Banjane vill., 22.07.1940, 1 ♂ (C. Bogojevich).

Myrmeleotettix maculatus (Thunberg, 1815)

Material: 4 specimens (imagines), drawer 18/12. **Localities:** (DM85) Shar Mt., Jelak place, 12.09.1951, 1 ♀ (FNSM); Shar Mt., Ceripashina peak, 9.09.1954, 1 ♂ & 10.09.1954, 2 ♂♂ (FNSM).

Omocestus petraeus (Brisout de Barneville, 1856)

Material: 8 specimens (imagines), drawer 18/12. **Localities:** (EM34) Vodno Mt., 1.08.1942, 2 ♂♂, 4 ♀♀ (K. Bogoev); (FM17) Osogovo Mts, Koshari vill., 17.09.1975, 1 ♀ (Chingovski); (FL46) Dojran lake, 6.06.1975, 1 ♀ (Chingovski).

Omocestus minutus (Brullé, 1832)

Material: 5 specimens (imagines), drawer 18/12. **Localities:** (EL08) Cer vill., 17.09.1981, 1 ♀ (Chingovski); (EM34) Vodno Mt., 1.08.1942, 1 ♂, 3 ♀♀ (K. Bogoev).

Omocestus rufipes (Zetterstedt, 1821)

Material: 56 specimens (imagines), drawer 18/12. **Localities:** (DL69) Radika valley, Boshkov Most place, 16.08.1954, 1 ♂ & 17.08.1954, 4 ♀♀ (M. Karaman; S. Mikshich det. 1 ♀ as *Stenobothrus lineatus* Panz.); (DM71/81) Mavrovo, 24.07.1971, 1 ♀ (Topukova); (EL29) Barbaros place, 16.09.1981, 2 ♀♀ & 17.09.1981, 1 ♀ (Chingovski); (EL33) Baba Mt., Bistrica vill., 26.06.1980, 1 ♂ (Chingovski); (EM24) Matka gorge, 27.09.1955, 1 ♀ (FNSM); (EM34) Skopje-Kisela Voda, 6.10.1955, 1 ♂, 2 ♀♀ (FNSM); (EM34/35) Skopje, 5.09.1941, 6 ♀♀ & 6.09.1941, 5 ♂♂, 9 ♀♀ & 14.09.1941, 2 ♂♂, 2 ♀♀ ("G. St."); 19.09.1941, 1 ♀ (K. Bogoevski); (EM35) Skopje (Zool. garden), 12.08.1939, 1 ♂, 2 ♀♀ (C. Bogojevich); 11.1935, 1 ♀ (S. Karaman); Skopje-Madzhari, 10.1952, 2 ♀♀ (FNSM); (EM52) Pchinja station, 17.06.1950, 3 ♀♀ (K. Bogoevski); (EM53) Katlanovo vill., 1.06.1967, 1 ♂, 1 ♀ (Chingovski); 17.10.1938, 1 ♂, 2 ♀♀ (leg.); Taor vill., 7.06.1951, 1 ♂ (FNSM); (EM55/56) Romanovce vill., 16.10.1952, 1 ♀ (leg.); (FM17) Osogovo Mts, Koshari vill., 17.09.1975, 1 ♂ (Chingovski).

Omocestus viridulus (Linnaeus, 1758)

Material: 2 specimens (imagines), drawer 18/12. **Localities:** (UTM?) Bistra Mt., 5.07.1961, 1 ♂ (Chingovski); (DM85) Shar Mt., Ceripashina peak, 26.-27.07.1952, 1700-2500 m, 1 ♀ (FNSM).

Stauroderus scalaris scalaris (Fischer de Waldheim, 1846)

Material: 7 specimens (6 imagines, 1 nymph), drawer 18/3. **Localities:** (UTM?) Baba Mt. ("Pelister"), 14.07.1955/56, 2 ♂♂, 1 ♀, 1 ♂ N₁; 24.07.1956, 1 ♀ (Chingovski); Bistra Mt., 16.07.1975, 1 ♂, 1 ♀ (Chingovski).

Gomphocerus sibiricus sibiricus (Linnaeus, 1767)

Material: 26 specimens (imagines), drawer 18/12. **Localities:** (UTM?) "Bistra, 2400 m" (probably Shar Mt.), 23.07.1939, 1 ♂ (A. Fadejev); (DM85) Shar Mt., Jelak place, 12.09.1954, 2 ♂♂ (FNSM); Shar Mt., Ceripashina peak, 26.-27.07.1952, 1700-2500 m, 2 ♂♂, 10 ♀♀ & 9.09.1954, 1 ♂ & 10.09.1954, 3 ♂♂, 3 ♀♀ (FNSM); (DM95) Shar Mt., Popova Shapka resort, 12.09.1954, 1 ♂, 3 ♀♀ (FNSM).

Euchorthippus declivus (Brisout de Barneville, 1849)

Material: 4 specimens (imagines), drawer 18/12. **Localities:** (UTM?) Kozhuf Mt., 26.07.1959, 1 ♂, 1 ♀ (Chingovski); (EM73) Sveti Nikole, 13.07.1960, 2 ♀♀ (Chingovski).

Chorthippus parallelus (Zetterstedt, 1821)

Material: 50 specimens (36 imagines, 14 nymphs), drawer 18/12. **Localities:** (UTM?) "Jane Sandanski", 27.07.1962, 1 ♂, 1 ♀ (Chingovski); "Krushino Kichevo", 12.07.1974, 1 ♀ (Chingovski); Vitachevo region, 1 ♀ (leg.); Shar Mt., "Brezovica", 20.07.1974, 1 ♂, 5 ♀♀ (Chingovski); Bistra Mt., 16.07.1975, 1 ♂, 2 ♀♀ (Chingovski); (DM70) Bistra Mt., Tresonche vill., 23.-24.08.1954, 1 ♀ (M. Karaman); (DM71/81) Mavrovo, 3.07.1973, 1 ♂ nymph & 3.07.1975, 1 ♂, 1 ♀ N₁ & 4.08.1975, 1 ♀ (Chingovski); 24.07.1971, 2 ♀♀ (Topukova); (DM85) Shar Mts, Ceripashina peak, 26.-27.07.1952, 1 ♂, 2 ♀♀ & 10.09.1954, 2 ♂♂, 1 ♀

(FNSM); (**EL14**) Baba Mt., Jorgov Kamen place, 11.09.1952, 1 ♀ (FNSM); (**?EM31**) Jakupica Mt., Begovo Pole place, 12.09.1984, 3 ♀♀ (Topukova); (**EM34**) Vodno Mt., 15.06.1975, 2 ♂♂, 3 ♀♀, 7 ♂♂ & 5 ♀♀ nymphs LI (Chingovski); 4.10.1959, 1 ♀ (Chingovski); (**EM53**) Taor vill., 7.06.1951, 1 ♂ (FNSM); (**FM61**) Maleshevo Mts., Breza peak, 25.06.1957, 1 ♀ (FNSM).

Chorthippus dorsatus (Zetterstedt, 1821)

Material: 9 specimens (imagines), drawer 18/12. **Localities:** (**EL08**) Cer vill., 17.09.1981, 2 ♂♂ (Chingovski); (**EM34**) Vodno Mt., 1.08.1942, 1 ♀ (K. Tuleshkov; det. S. Mikshich); 17.08.1941, 1 ♂, 2 ♀♀ & 2.10.1941, 1 ♂, 2 ♀♀ ("G. St.").

Chorthippus loratus (Fischer de Waldheim, 1846)

Material: 22 specimens (imagines), drawer 18/12. **Localities:** (**EM34/35**) Skopje, 6.09.1941, 1 ♂, 3 ♀♀ ("G. St."; S. Mikshich det. as *Ch. albomarginatus* D.G.); 14.09.1941, 1 ♂, 8 ♀♀ ("G. St."); 19.09.1941, 2 ♂♂, 1 ♀ (K. Bogoevski; S. Mikshich det. as *Ch. dorsatus*); 27.10.1942, 2 ♀♀ (K. Tuleshkov); (**EM35**) Skopje (Zool. garden), 11.1938, 270 m, 1 ♀ (S. Karaman); (**EM53**) Katlanovsko Ezero lake, 17.10.1938, 2 ♂♂ (leg.?); (**EM55/56**) Romanovce vill., 15.10.1952, 1 ♀ (leg.?).

Chorthippus oschei von Helversen, 1989

Material: 1 specimen (imago), drawer 18/12. **Localities:** (**EM34/35**) Skopje, 6.09.1941, 1 ♀ ("G. St.").

Chorthippus apricarius apricarius (Linnaeus, 1758)

Material: 8 specimens (imagines), drawer 18/12. **Localities:** (**DM85**) Shar Mt., Ceripashina peak, 9.09.1954, 3 ♀♀ & 10.09.1954, 1 ♂, 2 ♀♀ (FNSM); 1700-2500 m, 26.-27.07.1952, 1 ♀ (FNSM); (**EL14**) Baba Mt., Kopanki chalet, 14.07.1952, 1 ♀ (FNSM).

Chorthippus bornhalmi Harz, 1971

Material: 63 specimens (imagines), drawer 18/12. **Localities:** (**UTM?**) Tetovo region ("Tetovsko"), 9.09.1954, 1 ♀ (FNSM); Baba Mt., "Pelister", 26.07.1956, 1 ♂ (Chingovski); Babuna valley, 800 m, 27.08.1952, 3 ♀♀ (FNSM); Kozhuf Mt., "Golema Poljana", 15.05.1955, 7 ♂♂, 8 ♀♀ (FNSM); (**DM95**) Shar Mt., Popova Shapka resort, 16.-25.07.1956, 1 ♂ (FNSM); (**EL14**) Baba Mt., Jorgov Kamen place, 1580 m, 11.09.1952, 1 ♂, 2 ♀♀ (FNSM); (**EL65**) Vitolishte vill., 27.07.1954, 1 ♂, 3 ♀♀ & 29.07.1954, 2 ♂♂, 3 ♀♀ (M. Karaman); (**EL89**) Palikura vill., 28.05.1966, 1 ♂ (Chingovski); (**EM15/25**) Rashche vill., 13.10.1938, 2 ♀♀ (leg.?); (**EM32**) Jakupica Mt., Aldinci vill., 1000-1300 m, 30.08.1952, 1 ♂, 1 ♀ (FNSM); (**EM34**) Vodno Mt., 17.06.1954, 1 ♀ (FNSM); 18.06.1954, 1 ♂, 2 ♀♀ (M. Karaman); 2.10.1941, 1 ♂ ("G. St."); Vodno Mt., Nerezi vill., 10.06.1951, 1 ♀ (FNSM); Skopje-Kisela Voda, 6.10.1955, 2 ♂, 3 ♀♀ (FNSM); (**EM34/35**) Skopje, 5.11.1938, 1 ♀ (leg.?); (**EM34/44**) Batinci vill., 29.05.1952, 1 ♀ (FNSM); (**EM35**) Skopje-park, 14.07.1954, 1 ♂ (M. Karaman); Skopje-Karposh 1, 26.09.2002, 2 ♀♀ (M. Ivanov); (**EM52**) Pchinja station, 7.06.1950, 1 ♀ (K. Bogoevski); (**?EM53**) Jakupica Mt., "Kitka-Kadina Reka", 8.06.1972, 1 ♀ (Chingovski); (**EM55/56**) Romanovce vill., 10.09.1952, 2 ♀♀ (FNSM); 15.10.1952, 1 ♀ (leg.?); (**FL09**) Demir Kapija gorge, 24.08.1948, 1 ♀ (K. Bogoev); (**FL36**) Furka vill., 6.06.1975, 1 ♀ (Chingovski); (**FL46**) Dojran lake, 7.06.1975, 1 ♂ (Chingovski); (**FM14**) Kochani, 20.10.1941, 1 ♂ (K. Tuleshkov).

Chorthippus biguttulus euhedicki von Helversen, 1986

Material: 8 specimens (imagines), drawer 18/12. **Localities:** (**DM95**) Shar Mt., Popova Shapka resort, 12.09.1954, 1 ♂ (FNSM); (**EM34**) Vodno Mt., 8.08.1941, 1 ♂, 2 ♀♀ (2G. St.); (**EM34/35**) Skopje, 14.09.1941, 1 ♀ ("G. St."); (**EM44**) Treska valley, 28.09.1941, 1 ♂, 1 ♀ (K. Tuleshkov); (**FM15**) Osogovo Mts, Ponikva vill., 18.06.1987, 1 ♀ (cf. *biguttulus euhedicki*).

Chorthippus mollis mollis (Charpentier, 1825)

Material: 4 specimens (imagines), drawer 18/12. **Localities:** (**DL69**) Radika valley, Boshkov Most place, 16.08.1954, 1 ♂ & 17.08.1954, 1 ♀ (M. Karaman); (**EL08**) Cer vill., 17.09.1981, 2 ♂♂ (Chingovski); (**EL29**) Barbaros vill., 13.09.1981, 1 ♀ (cf. *mollis*) (Chingovski).

Chorthippus spp. (*biguttulus*-group)

Material: 4 specimens (imagines), drawer 18/12. **Localities:** (**UTM?**) Bistra Mt., 23.07.1985, 1 ♀ (Topukova); 8.08.1941, 1 ♀ ("G. St."); 1.08.1942, 2 ♀♀ (K. Tuleshkov).

II. Check-list of the species of Mantodea and Orthoptera found in Macedonia

The list includes all the species of Mantodea and Orthoptera presently found in Macedonia including the newly established taxa and excluding the wrongly reported ones (see below). The taxa in bold are discussed below or refer to first records for Macedonia (also marked with an asterisk) (see "Remarks to the listed species", "Omitted taxa").

Mantodea

Empusa fasciata Brullé, 1836
Ameles heldreichi Brunner von Wattenwyl, 1882
Iris oratoria Linnaeus, 1758
Mantis religiosa Linnaeus, 1758

Orthoptera

Phaneroptera nana Fieber, 1853
***Phaneroptera falcata* (Poda, 1761)**
Tylopsis lilifolia (Fabricius, 1793)
***Acrometopa servillea servillea* (Brullé, 1832)**
***Leptophyes punctatissima* (Bosc, 1792)**
Leptophyes albobittata (Kollar, 1833)
Andreiniimon nuptialis (Karny, 1918)
Isophya* aff. *brevicauda* Ramme, 1931
Isophya tosevski Pavičević, 1983
Isophya modestior Brunner von Wattenwyl, 1882
Isophya speciosa (Frivaldszky, 1867)
Barbitistes ocskayi (Charpentier, 1850)
Ancistrura nigrovittata (Brunner von Wattenwyl, 1878)
Metaplastes ornatus (Ramme, 1931)
Poecilimon affinis (Frivaldszky, 1867)
Poecilimon hoelzeli Harz, 1966
Poecilimon ornatus (Schmitd, 1849)
Poecilimon gracilis (Fieber, 1853)
***Poecilimon jablanicensis* Chobanov et Heller, in press**
Poecilimon schmidtii (Fieber, 1853)
Poecilimon thoracicus (Fieber, 1853)
Poecilimon jonicus jonicus (Fieber, 1853)
Poecilimon brunneri (Frivaldszky, 1867)
Poecilimon macedonicus Ramme, 1926
Poecilimon ebneri Ramme, 1933
Poecilimon chopardi Ramme, 1933
***Poecilimon vodnensis* M. Karaman, 1958**
Polysarcus denticauda (Charpentier, 1825)
Meconema thalassinum (De Geer, 1773)
Decticus albifrons (Fabricius, 1775)
Decticus verrucivorus verrucivorus (Linnaeus, 1758)
Platycleis (*Platycleis*) *affinis affinis* Fieber, 1853
Platycleis (*Platycleis*) *escalerai escalerai* I. Bolívar, 1899
Platycleis (*Platycleis*) *intermedia intermedia* (Serville, 1839)

Platycleis (Platycleis) albopunctata grisea (Fabricius, 1781)
Platycleis (Modestana) ebneri ebneri (Ramme, 1926)
Platycleis (Modestana) ebneri excurvata F. Willemse, 1975
Platycleis (Montana) macedonica (Berland et Chopard, 1922)
Platycleis (Tessellana) nigrosignata (Costa, 1863)
Platycleis (Tessellana) orina (Burr, 1899)
Platycleis (Tessellana) incerta Brunner von Wattenwyl, 1882
Metrioptera (Metrioptera) oblongicollis Brunner von Wattenwyl, 1882
Metrioptera (Metrioptera) tsirojanni Harz et Pfau, 1983
Metrioptera (Metrioptera) roeseli fedtschenkoi (Saussure, 1874)
Pholidoptera frivaldskyi (Hermann, 1871)*
Pholidoptera macedonica macedonica Ramme, 1928
Pholidoptera aptera karnyi (Ebner, 1910)
Pholidoptera aptera gjorgjevici M. Karaman, 1960
Pholidoptera stankoi M. Karaman, 1960
Pholidoptera fallax (Fischer, 1853)
Pholidoptera griseoptera (De Geer, 1773)
Eupholidoptera smyrnensis (Brunner von Wattenwyl, 1882)
Eupholidoptera chabrieri (Charpentier, 1825)
Bucephaloptera bucephala (Brunner von Wattenwyl, 1882)
Psorodonotus fieberi macedonicus (Ramme, 1931)
Pachytrachis gracilis (Brunner von Wattenwyl, 1861)
Anterastes serbicus Brunner von Wattenwyl, 1882
Pterolepis germanica (Herrich-Schäffer, 1840)
Gampsocleis abbreviata Hermann, 1874
Tettigonia viridissima Linnaeus, 1758
Tettigonia caudata (Charpentier, 1845)
Saga natoliae Serville, 1839
Saga hellenica Kaltenbach, 1967
Saga rammei Kaltenbach, 1965
Saga campbelli campbelli Uvarov, 1921
Saga pedo (Pallas, 1771)
Conocephalus discolor Thunberg, 1815
Ruspolia nitidula (Scopoli, 1786)
Callimenus oniscus (Burmeister, 1838)
Callimenus macrogaster longicollis Fieber, 1853
Bradyporus dasypus (Illiger, 1800)
Ephippiger ephippiger ephippiger (Fiebig, 1784)
Troglophilus neglectus neglectus Krauss, 1879
Troglophilus cavicola (Kollar, 1833)
Troglophilus bukoviki Z. Karaman, 1968
Troglophilus lazarepolensis Z. Karaman, 1958
Dolichopoda remyi Chopard, 1934
Gryllus bimaculatus De Geer, 1773
Gryllus campestris Linnaeus, 1758
Melanogryllus desertus (Pallas, 1771)
Acheta domesticus (Linnaeus, 1758)
Tartarogryllus tartarus (Saussure, 1878)*
Eumodicogryllus bordigalensis bordigalensis (Latreille, 1804)
Modicogryllus truncatus (Tarbinsky, 1940) / Modicogryllus frontalis (Fieber, 1844)
Gryllomorpha dalmatina (Ocskay, 1832)*

Ovaliptila newmana (Harz, 1969)*

Pteronemobius heydenii heydenii (Fischer, 1853)

Oecanthus pellucens pellucens (Scopoli, 1763)

Arachnocephalus vestitus Costa, 1855

Myrmecophilus zorae (Karaman, 1963)

Gryllotalpa stepposa Zhantiev, 1991*

Gryllotalpa gryllotalpa (Linnaeus, 1758)

Xya pfaendleri (Harz, 1970)*

Xya variegata Latreille, 1809

Paratettix meridionalis (Rambur, 1838)

Tetrix ceperoi (Bolívar, 1887)

Tetrix bolivari Saulcy, 1901

Tetrix subulata (Linnaeus, 1758)

Tetrix tuerki (Krauss, 1876)

Tetrix tenuicornis Sahlberg, 1893

Tetrix bipunctata kraussi Saulcy, 1888

Tetrix depressus (Brisout de Barneville, 1849)

Asiotmethis limbatus (Charpentier, 1845)

Glyphotmethis heldreichi (Brunner von Wattenwyl, 1882)

Anacridium aegyptium (Linnaeus, 1764)

Calliptamus italicus (Linnaeus, 1758)

Calliptamus barbarus barbarus (Costa, 1836)

Calliptamus tenuicercis Tarbinsky, 1930

Paracaloptenus caloptenoides caloptenoides (Brunner von Wattenwyl, 1861)

Melanoplus frigidus frigidus (Boheman, 1846)

Podisma pedestris pedestris (Linnaeus, 1758)

Oropodisma macedonica Ramme, 1951

Odontopodisma decipiens Ramme, 1951

Odontopodisma albanica Ramme, 1951

Pezotettix giornae (Rossi, 1794)

Acrida ungarica (Herbst, 1786)

Locusta migratoria cinerascens (Fabricius, 1781)

Oedaleus decorus (Germar, 1826)

Psophus stridulus (Linnaeus, 1758)

Celes variabilis variabilis (Pallas, 1771)

Oedipoda caerulescens (Linnaeus, 1758)

Oedipoda miniata miniata (Pallas, 1771)

Oedipoda germanica (Latreille, 1804)

Sphingonotus caerulans caerulans (Linnaeus, 1767)

Sphingonotus coerulipes djakonovi Mistshenko, 1936

Acrotylus insubricus (Scopoli, 1786)

Acrotylus patruelis (Herrich-Schäffer, 1838)

Acrotylus longipes longipes (Charpentier, 1845)

Aiolopus strepens (Latreille, 1804)

Aiolopus thalassinus thalassinus (Fabricius, 1781)

Mecostethus parapleurus parapleurus (Hagenbach, 1822)

Stethophyma grossum (Linnaeus, 1758)

Paracinema tricolor bisignata (Charpentier, 1825)

Euthystira brachyptera (Ocskay, 1826)

Arcyptera fusca (Pallas, 1773)

Arcyptera microptera microptera (Fischer de Waldheim, 1833)

Arcyptera labiata (Brullé, 1832)
Pallasiella turcomana (Fischer de Waldheim, 1833)
Dociostaurus (Dociostaurus) maroccanus (Thunberg, 1815)
Dociostaurus (Dociostaurus) brevicollis (Eversmann, 1848)
Dociostaurus (Notostaurus) anatolicus (Krauss, 1896)
Stenobothrus stigmaticus (Rambur, 1838)
Stenobothrus eurasius macedonicus F. Willemse, 1974
Stenobothrus nigromaculatus nigromaculatus (Herrich-Schäffer, 1840)
***Stenobothrus graecus graecus* Ramme, 1926**
Stenobothrus fischeri fischeri (Eversmann, 1848)
Stenobothrus lineatus lineatus (Panzer, 1796)
Stenobothrus rubicundulus Kruseman et Jeekel, 1967
***Myrmeleotettix maculatus* (Thunberg, 1815)**
Omocestus petraeus (Brisout de Barneville, 1856)
Omocestus minutus (Brullé, 1832)
Omocestus haemorrhoidalis haemorrhoidalis (Charpentier, 1825)
Omocestus rufipes (Zetterstedt, 1821)
Omocestus viridulus (Linnaeus, 1758)
Stauroderus scalaris scalaris (Fischer de Waldheim, 1846)
Gomphocerus sibiricus sibiricus (Linnaeus, 1767)
Euchorthippus pulvinatus (Fischer de Waldheim, 1846)
Euchorthippus declivus (Brisout de Barneville, 1848)
***Chorthippus parallelus* (Zetterstedt, 1821)**
Chorthippus dorsatus (Zetterstedt, 1821)
Chorthippus dorsatus x dichrous* sensu STUMPNER & VON HELVERSEN (1992, 1994)
Chorthippus loratus (Fischer de Waldheim, 1846)
***Chorthippus oschei* von Helversen, 1986**
Chorthippus apricarius apricarius (Linnaeus, 1758)
***Chorthippus vagans dissimilis* F. Willemse, von Helversen et Odé, 2009?**
Chorthippus bornhalmi Harz, 1971
***Chorthippus biguttulus euhedicki* von Helversen, 1989**
Chorthippus mollis mollis (Charpentier, 1825)
Gomphocerippus rufus (Linnaeus, 1758)

Remarks to the listed species

Phaneroptera falcata (Poda, 1761)

The only record for Macedonia (HELLER 1988: Makedonien) seems based upon a mistake (K.-G. Heller). Anyway, we do not delete the species from the list of Macedonian fauna because it was recently found in this country (D. Chobanov, unpublished data).

Acrometopa servillea servillea (Brullé, 1832)

All earlier records for this species by RAMME (1951), BEY-BIENKO (1954), ČEJCHAN (1963), HARZ (1969) referring to "Macedonia" were secondary citations based on the data by BERLAND & CHOPARD (1922) and BURR et al. (1923) for Greek Makedhonia. The species has been firstly recorded from Macedonia by PAVIĆEVIĆ (1983) (as *A. servillei*).

Isophya aff. *brevicauda* Ramme, 1931

The only specimen found (see "Results-I") has been identified as belonging to *I. brevicuda*. In Macedonia only three species were recorded earlier, *I. speciosa* (Fri-

valdszky, 1867), *I. modestior* Brunner von Wattenwyl, 1882 and *I. tosevski* Pavičević, 1983, and none of them, nor any other Balkan species, could be suspected in this case. However, determination by females in this genus is frequently unreliable and the possibility for a new, undescribed taxon cannot be excluded.

It is not known where RAMME (1951) takes his record of *I. pyrenaea* (Serville, 1839) for Macedonia from. This record has been cited by US & MATVEJEV (1967), who recorded the species also from Serbia. Today it is known that *I. pyrenaea* does not occur on the Balkans, where it is replaced by *I. brevicauda*. The latter however does not occur in Serbia and until now was not known from Macedonia.

Leptophyes punctatissima (Bosc, 1792)

Recently recorded from Macedonia by MICEVSKI et al. (2003).

Poecilimon jablanicensis Chobanov et Heller, in press

The species was recently discovered at the treeless zone of Jakupica Mountain (CHOBANOV & HELLER, in press).

Poecilimon vodnensis M. Karaman, 1958

This peculiar species was described from Vodno Mountain near Skopje found on *Rubus* in a degraded xerothermic forest at ca. 900 m alt. (KARAMAN 1958a, 1975). In 2007 one of us (D. Chobanov) observed the collection of the late Dr. Mladen Karaman (thanks are due to Dr. Ivo Karaman), where six specimens are preserved (1 ♂ holotype – Vodno, 10.07.1954; 1 ♂, 2 ♀♀ - 07.1961; 1 ♂, 1 ♀ - 26.06.1960). The collection dates of part of the material differ from the published one (25.08.1957 - KARAMAN 1958a).

The species fits a small group of three other species (*P. varicornis* (Haan, 1842), *P. zonatus* I. Bolívar, 1899 and *P. tauricola* Ramme, 1951) distributed from the Anatolian plateau to Syria and Lebanon, which may be called *Poecilimon varicornis* group and has some similarities with the *Poecilimon sanctipauli* group (HELLER & SEVGILI 2005). The morphology and colouration of *P. vodnensis* fully agree with these of *P. varicornis*, described from Syria. In the last years few attempts were made (D. Chobanov) to find specimens of *P. vodnensis* at Vodno Mountain without a success. The large distance between the range of *P. varicornis* and that of *P. vodnensis* and the great morphologic similarity may raise doubt on the origin of the material and new information is needed to evaluate the status of this bewildering taxon.

Metrioptera (Metrioptera) tsirojanni Harz et Pfau, 1983

Recently recorded from Macedonia by CHOBANOV (2002). The species is common in the hilly and mountain belt of Central and Eastern Macedonia and Southwesternmost Bulgaria between 500 and 1800-1900 m (CHOBANOV 2009a, D. Chobanov, unpublished data).

Metrioptera roeselii fedtschenkoi (Saussure, 1874)

This taxon has been reported for Macedonia under two names. *M. ambitiosa* Uvarov, 1924 has been reported on account of records from Greece (cf. Appendix) except by DIMOVSKI (1968) (Skopje Kettle). *M. bispina* (Bolívar, 1899) has been commonly reported for the country in the past (BEIER 1955, KARAMAN M. 1958b, US & MATVEJEV 1967, HARZ 1969, KARAMAN 1975).

A question arises considering the taxonomic status of the taxa related to *M. roeselii* (Hagenbach, 1822). HELLER (1988) considered *M. fedtschenkoi* a subspecies of *roeselii*, thus, the forms *ambitiosa* and *azami* obtained an infrasubspecific category and must be

placed as synonyms of *fedtschenkoi*. The question is still quite subjective and requires revision of the group. WILLEMSE & WILLEMSE (2008) use the name *M. roeselii ambitiosa* but the combination *M. roeseli fedtschenkoi* should have a priority. Regarding some transitional forms observed between the typical *M. roeselii* and typical *M. fedtschenkoi* and the lack of syntopic populations of both taxa (CHOBANOV 2009b – data for Bulgaria; I. Iorgu, personal communication – data for Romania) we consider both forms as subspecies of one species.

Pholidoptera frivaldskyi (Hermamn, 1871)

US (1938) recorded the species along Vardar River near Skopje ("Skoplje, na obali Vardara u šipragu."). KARAMAN (1960) rejected this information arguing that the case concerns *Ph. macedonica*. Both records, however, are not very likely because of the ecological preferences of these taxa for mountainous habitats. Later on, US & MATVEJEV (1967) again refer to the record by US (1938) but KARAMAN (1975) argues for a possible misidentification of *Metrioptera (Roeseliana) bispina* (= *M. roeseli fedtschenkoi*) or *Metrioptera (Bicolorana) knipperii* (Ramme, 1951) (= *M. oblongicollis*) by Us. We support the arguments by KARAMAN (1975). However, the species has been recently found in Macedonia on Ossogovo Mountains (D. Chobanov, unpublished data) and is here considered new for the country.

Saga campbelli campbelli Uvarov, 1921

The species has been reported wrongly for Macedonia either on account of Greek material or material of *S. rammei* (described in 1965) by RAMME (1951), US & MATVEJEV (1967), HARZ (1969), KARAMAN (1975) and HELLER (1988). First record for the country give PAVIĆEVIĆ & KARAMAN (2001), who found the species at the border pass General Jankovich (wrongly referred to the territory of Serbia) and in the surroundings of Strumica (SE Macedonia).

Tartarogryllus tartarus (Saussure, 1874)

Earlier records concerning "Macedonia" (RAMME 1951 as *Gryllulus tartarus obscurus* Uvarov, 1934 and US & MATVEJEV 1967 as *Gryllus obscurus*) are based on the information by BURR et al. (1923) for finding the species in the region of Thessaloniki (=Solun, Saloniki) in Greece.

Modicogryllus truncatus (Tarbinsky, 1940) / *Modicogryllus frontalis* (Fieber, 1844)

Following new data from Bulgaria (CHOBANOV 2009b) *M. frontalis* has quite limited distribution in the middle latitudes of the Balkan Peninsula and does not occur south from the Northwestern Bulgaria and, possibly, Central Serbia. Thus, it is likely that this species is fully replaced by *M. truncatus* in Macedonia, as well as in Continental Greece (as *Modicogryllus* sp. in WILLEMSE & WILLEMSE 2008).

Gryllomorpha (Gryllomorpha) dalmatina (Ocskay, 1832)

First record of this species for "Macédoine" is given by BERLAND & CHOPARD (1922). However, the authors refer to the Greek part of the geographic region "Macedonia" as to "Macédoine", while calling the present territory of the Former Republic of Macedonia "Serbie". Thus, the record should be considered belonging to the territory of Greece. All later records for "Macedonia" (BURR et al. 1923, RAMME 1951, ČEJCHAN 1963, US & MATVEJEV 1967) cite this old record, which concerns Greece. Our present record is the first reliable one for the Republic of Macedonia.

Arachnocephalus vestitus Costa, 1855

The records by RAMME (1951) and ČEJCHAN (1963) for "Mazedonien" refer to the data by BERLAND & CHOPARD (1922) and BURR et al. (1923) for Greece. HARZ (1969) also mentioned the species for Macedonia ("Jugoslawien (Mazedonien)") but it is not clear whether he had disposed with original material or wrongly referred some of the earlier records to this country. However, new unpublished material (D. Chobanov, unpublished data) revealed that the species is common in the Valley of Vardar River along its middle and lower course (South of Skopje).

Tetrix bipunctata kraussi Saulcy, 1888

KARAMAN (1961) recorded *T. bipunctata* from Macedonia and later on he (KARAMAN 1965) reported also *T. kraussi* Saulcy, 1888. Further in the literature both taxa are considered synonymic or *T. kraussi* is regarded as a distinct species or a subspecies of *T. bipunctata* (for references see e.g. EADES & OTTE, OSF online). LEHMANN (2004) considered it a good species, while in a recent work (WILLEMSE & WILLEMSE 2008) it has been given a subspecific status and only *T. bipunctata kraussi* was shown to occur in Greece. Available materials from the middle latitudes of the Balkan Peninsula (Bulgaria and Macedonia; D. Chobanov, unpublished data) are uniform and reveal that the preferred habitats of the taxon are restricted to the mountains between 700-800 and 1800 m alt. Following the incomplete data on the taxonomic position of *T. kraussi* we prefer to follow the opinion by WILLEMSE & WILLEMSE (2008) until new data (e.g. molecular) prove or reject it.

Tetrix depressus (Brisout de Barneville, 1849)

The taxon has been placed again into the genus *Tetrix* based on morphological characters (LEHMANN & LANDECK 2007). This conclusion was also supported by molecular data (A. Lehmann, pers. comm.).

Glyphotmethis heldreichi (Brunner von Wattenwyl, 1882)

The subspecies *G. heldreichi macedonicus* Bey-Bienko, 1951 has recently been proposed for synonymisation (ÜNAL 2007, WILLEMSE & WILLEMSE 2008) and thus the species is considered monotypic.

Sphingonotus caerulans caerulans (Linnaeus, 1767)

The subspecies *S. caerulans macedonicus* mentioned by KARAMAN (1975) lacks description and diagnosis and thus it is here considered nomen nudum and referred to the nominate form.

Shingonotus coerulipes djakonovi Mistshenko, 1936

The taxon was reported for Macedonia by MATVEJEV (1976). Regarding the species' distribution (mostly the semideserts of Palaearctic Asia, penetrating into Europe only at the North Black Sea coast) it is doubtful whether the author has disposed with specimens of *S. coerulipes* or, more probably, of *S. caerulans*.

Arcyptera microptera microptera (Fischer de Waldheim, 1833)

The subspecies *A. microptera macedonica* Karaman, 1961 was regarded a synonym of *A. microptera nigriloba* Uvarov, 1942 by WILLEMSE (1976) and the latter – a synonym of the nominate subspecies by DEMIRSOY (1979) and WILLEMSE & WILLEMSE (2008).

Stenobothrus graecus graecus Ramme, 1926

The species is known with a single locality in Macedonia (WILLEMSE 1974), quite remote from its main range in Greece and Western Asia Minor. Recently the species was reported for Serbia (PAVIĆEVIĆ & KARAMAN 2001) based on material from the collection of the late Dr. Mladen Karaman. The revision of this material (for the access allowed thanks are due to Dr. Ivo Karaman) has revealed the belonging of the specimens to *Omocestus haemorrhoidalis* and thus the record of *S. graecus* from Serbia was based upon a misidentification.

Myrmeleotettix maculatus (Thunberg, 1815)

Considering the doubtful taxonomic status of *M. maculatus hackeri* Harz, 1987 (see WILLEMSE & WILLEMSE 2008) the population in Macedonia is here taxonomically considered in a broad sense.

Chorthippus parallelus (Zetterstedt, 1821)

The species is known from the Balkans with two subspecies – the nominate one and *Ch. parallelus tenuis* (Brullé, 1832). However, intermediate forms are commonly found mostly in the transition between lowland to mountain populations and the taxonomic status of the latter seems doubtful (see also WILLEMSE & WILLEMSE 2008). Thus, we consider the species in a broad sense.

Chorthippus oschei von Helversen, 1986

It was recently shown that few species of the *Chorthippus albomarginatus*-group occur on the Balkans replacing *Ch. albomarginatus* (De Geer, 1773) (VEDENINA & HELVERSEN 2009). Among these the occurrence of both *Ch. oschei oschei* and *Ch. oschei pusztaiensis* Vedenina et von Helversen, 2009 is possible. The only female in the MMNH was identified before the description of the latter form and was not assigned to one of the subspecies.

Chorthippus vagans dissimilis Willemse, von Helversen et Odé, 2009

The species *Ch. vagans* (Eversmann, 1848) has been reported for Macedonia from Plagusa (Gradeshka Planina) Mountain by RAMME (1951). Though it is possible that a misidentification is involved we refer the record to the recently described *Ch. vagans dissimilis*, found in Greece, Turkey and Southern Bulgaria (WILLEMSE & WILLEMSE 2008, CHOBANOV 2009a).

Chorthippus biguttulus euhedickei von Helversen, 1989

After studying rich material (Chobanov, unpublished information) all records of *Ch. biguttulus* (Linnaeus, 1758) and *Ch. biguttulus hedickei* Ramme, 1942 from Macedonia are referred to this subspecies. Concerning the preference of the name *Ch. biguttulus euhedickei* instead of *Ch. porphyropterus euhedickei* see WILLEMSE & WILLEMSE (2008).

Omitted taxa

Ameles decolor (Charpentier, 1825)

All earlier records by BERLAND & CHOPARD (1922) (Macedonia), RAMME (1951) (Vodno, Veles, Plaus, Kaluchkova, Rabrovo, Dedeli, Kiselavoda, Gostivar-Debar), US & MATVEJEV (1967) (Macedonia), DIMOVSKI (1968) (Skopje Kettle), DIMOVSKI (1971) (Ovche Pole Region) are referred here to *A. heldreichii* Brunner von Wattenwyl, 1882 (for the first case see also the arguments by Uvarov in BURR et al. 1923).

I. pyrenaea (Serville, 1839)

About the record for this species by RAMME (1951) see under *Isophya* aff. *brevicauda* above.

Poecilimon poecilus (Ramme, 1951)

The species was synonymized with *P. affinis* by HELLER (1988). Though PAVIĆEVIĆ & KARAMAN (2001) argue the taxon is a valid species (without giving any proofs), its synonymy was re-established (CHOBANOV & HELLER, in press).

Poecilimon elegans Brunner von Wattenwyl, 1878

Poecilimon fussi Brunner von Wattenwyl, 1878

Poecilimon elegans has been described from Dalmatia. Later on, BRUNNER VON WATTENWYL (1882) mentioned the species from Macedonia. Following BEY-BIENKO (1954) the latter record concerns the territory of former Yugoslavia. BERLAND & CHOPARD (1922) recorded *P. fussi* from the region of Florina (Greece) but Uvarov in BURR et al. (1923) revised the material referring it to *P. elegans* HERM. [sic]. Subsequently, RAMME (1926) described *P. macedonicus*, which shows great morphologic similarity with these species and with *P. brunneri* (Frivaldszky, 1867). Same author (RAMME 1933) related the records by BERLAND & CHOPARD (1922) and BURR et al. (1923) to *P. macedonicus* but mentions from the region also *P. elegans*, which might be based on the record by BRUNNER VON WATTENWYL (1882). Later on, RAMME (1951) included all three species (*P. macedonicus*, *P. elegans* and *P. fussi*) in the species list of the region of Macedonia. Later records of *P. elegans* and/or *P. fussi* for Macedonia (US & MATVEJEV 1967, HARZ 1969, HELLER 1984, HELLER 1988) refer to the Ramme's and other earlier records. As to the only recent original record of *P. fussi* from Macedonia (HARZ 1969) the same author doubts the data arguing for a probably wrong locality label. WILLEMSE (1982, 1984) exclude *P. elegans* and *P. fussi* from the fauna of Greece. Summarising this information and regarding the distribution areas of these species and the examined materials from Macedonia (D. Chobanov, unpublished data) we accept that all earlier records of *P. fussi* and *P. elegans* from Macedonia concern misidentifications, wrong labels and/or citations of earlier wrong records and thus both species do not occur on the territory of Macedonia. *P. fussi* or very close species of the *P. fussi*-group occurs in Northern Bulgaria, Northeastern Serbia, Romania, Hungary, Poland, Moldova and Southwestern Ukraine and *P. elegans* – in Slovenia, Croatia, Bosnia and Hercegovina and Montenegro (mostly the territories belonging to the Adriatic coast).

Poecilimon geoktschajcus Stshelkanovtzev, 1910

Poecilimon anatolicus Ramme, 1933

Originally the species is reported for the region of Macedonia under the name *P. bosphoricus* Brunner von Wattenwyl, 1878 from Lembet and the "Happy valley" near Thessaloniki in Greece by BURR et al. (1923). RAMME (1933) identified this specimen as *P. geoktschajcus* and states it must have been collected by Burr during his trips to Caucasus and subsequently was wrongly labeled. No doubt, *P. geoktschajcus* does not occur on the Balkan Peninsula as stated by both RAMME (1933) and BEY-BIENKO (1954). The occurrence of *P. bosphoricus* in the region of Thessaloniki is also quite doubtful and probably the case concerns *Poecilimon anatolicus*, recently found in Greek Makedhonia (WILLEMSE 1984, HELLER 1984 as *P. cf. similis* Retowski, 1889, WILLEMSE 1985, INGRISCH & PAVICEVIC 1985 as *P. rufonitens* n. sp., HELLER 1988, WILLEMSE & WILLEMSE 2008). Thus, as a conclusion, the records of *P. bosphoricus* and *P. geoktschajcus* from Northern Greece (Makedhonia) concern *P. anatolicus*, moreover any records of this species group from "Macedonia" concern the Greek territory.

Polysarcus scutatus (Brunner von Wattenwyl, 1882)

The record by BERLAND & CHOPARD (1922) for finding *P. scutatus* in Macedonia (Oleveni, Baba Mt., Macedonia and Lozani, Greece) is the only one from the region and among few from the Balkans after the species' description by BRUNNER VON WATTENWYL (1882) from the "Serbischer Balkan". Recently the species was found in Greece (WILLEMSE & WILLEMSE 2008). However, though its occurrence in Macedonia is possible, the record by BERLAND & CHOPARD (1922) based on a single female from Oleveni Village is here believed to concern misidentification of *Polysarcus denticauda*. Firstly, the active investigations on Baba (Pelister) Mountain during 2001-2003 by one of us (D. Chobanov) revealed that *P. denticauda* is common in the region and the only species from the genus found here and in Macedonia (D. Chobanov, unpublished data). Secondly, *P. denticauda* is frequently found in the lowlands (where Oleveni Village is situated), while *P. scutatus* is exclusively a mountainous species, common in the French Alps and the Pyrenees. The determination by a female in this genus may also have been a problem.

Platycoleis (Tessellana) veyseli Kocak, 1984

The species has been recorded by US (1938) (under *Platycoleis vittata*) after one female from the region of Kumanovo. It occurs in the northern half of the Balkan Peninsula and though its occurrence in the region is possible, most probably the case concerns *P. nigrosignata* (Costa). The latter is common in the surroundings of Kumanovo and moreover both US (1938) and US & MATVEJEV (1967) did not mention *P. nigrosignata* for the fauna of Former Yugoslavia.

Platycoleis (Tessellana) tessellata (Charpentier, 1825)

P. tessellata occurs from the southern parts of Western Europe eastwards to European Russia and Western Asia and has been reported for Macedonia by US (1938). However, on the Balkans it is almost completely replaced (except in Slovenia and Croatia) by its relative *P. veyseli*. Recently *P. tessellata* has been removed from the faunal list of Bulgaria (CHOBANOV 2009a) and herewith it is considered wrongly reported also for Macedonia. The records of this species from the Balkan countries in the past have frequently been a result of misidentification of the macropterous form of *P. veyseli* (see e.g. HELLER 1988: "Verwechslung mit makropteren *T. vittata*?"). This information is supported by KARAMAN (1975: p. 27) who stated that *P. tessellata* does not occur in Macedonia and most probably the record concerns misidentification of *P. nigrosignata*. Yet, the possibility for misidentification of a specimen of *P. veyseli* by US (1938) exists.

Platycoleis (Sepiana) sepium (Yersin, 1854)

The records of this species refer to "Macedonia" (RAMME 1951, ČEJCHAN 1963) and both are based on the localities "Lembet, Karasouli near Salonika, Guelbesi, Hortiack plateau, Kotos" reported by BURR et al. (1923) and situated in Greece. Up to date, the species have not been found in Macedonia and the neighbouring territory of Southwestern Bulgaria.

Pholidoptera dalmatica (Krauss, 1899)

The species occurs in Slovenia, Croatia, Bosnia and Hercegovina and Montenegro with few morphological forms (commonly considered with a subspecific status) mostly in the lowland and mountainous coastal regions, as well as with one subspecies (*Ph. dalmatica brachynota* Ramme) in the inland. HELLER (1988) recorded the song of *Ph. dalmatica* also in Macedonia, though the author stated that morphologically the specimen falls within the group *Ph. aptera karnyi/gjorgjevici* ("... das Tier von Fundort 14 (hier syn-

topes Vorkommen mit einer Form aus Gruppe A: Fundort 6) ist morphologisch in die Verwandtschaft von *Ph. aptera karnyi/gjorgjecici* [sic] zu stellen. Möglicherweise stellt diese Form eine weitere Inlandrasse von *Ph. dalmatica* (ähnlich *Ph. dalmatica brachynota*) dar."). In this region also *Ph. stankoi* occurs, which morphologically however remains *Ph. dalmatica*. Considering the perplexed systematics of the *Pholidoptera aptera*-group (including *Ph. aptera*, *Ph. dalmatica*, *Ph. stankoi*, *Ph. macedoica* and their relatives) the occurrence of *Ph. dalmatica* is here regarded doubtful.

Psorodonotus fieberi illyricus Ebner, 1923

HELLER (1988) recorded this subspecies from Zhirovnica Village (Korab Mt.). Later on he (K.-G. Heller, personal communication) doubted the taxonomic affiliation of this record. Indeed, all over Western Macedonia only *P. fieberi macedonicus* is distributed. The nominate subspecies, *P. fieberi fieberi* FIEBER, 1853, may be found in the mountains of Eastern Macedonia but *P. fieberi illyricus* does not occur in the country.

Ephippiger discoidalis (Fieber, 1853)

Earlier records about this species from Macedonia (US 1938 and US & MATVEJEV 1967 as *E. sphacophilus* (Krauss, 1879), cited by HARZ 1969) are wrong and after KARAMAN (1975) concern wrong determination or label ("Što se tiče vrste *Ephippiger sphacophila*, tu se, također, radi o pogrešnoj determinaciji ili, što je verovatnije, o zameni lokaliteta, jer se ova vrsta veoma uočljivo razlikuje od *E. ephippiger* koja se nalazi u Makedoniji i čiji areal se pruža od Austrije preko celog kontinentalnog dijela Balkanskog poluostrva dalje na istok. *E. sphacophila* je poznata isključivo iz Dalmacije."). This may be confirmed by the today known distribution of the species in Italy, Slovenia, Croatia, Bosnia and Hercegovina, Montenegro and Albania, mostly in the vicinity of the Adriatic coast.

Troglophilus brevicauda Chopard, 1934

The species has been described from the Bijeloševacka Pecina Cave in Southwestern Serbia. Later on it was confirmed for this region from Novi Pazar (Sandzhak) and Mileševo by KARAMAN Z. (1958) but has never been recorded from Macedonia. Thus, the record by RAMME (1951) for "Mazedonien" must have been based upon a mistake.

Dolichopoda hussoni Chopard, 1934

The species has been described from caves in the region of Naoussa (Vermion Mt.) in Greece and all records referring to "Macedonia" (RAMME 1951, US & MATVEJEV 1967, HARZ 1969) concern the Greek territory. One specimen of *D. remyi* in the MMNH collection has been wrongly determined as *D. hussony* by Zora Karaman (see above).

D. hussoni is characterised by the lack of ventral spines on the hind femur. *D. remyi* do possesses such spines and thus both species were separated in different subgenera. This character present also in other groups of Orthoptera, however, is strongly connected with the size and stage of the individual and the species and is not a good criterion to be used in the systematics. For example, even the last instar nymphs of *D. remyi* do not possess these spines or they are weakly developed. Thus, separation of subgenera on account of presence/absence of femoral spines may be regarded artificial.

Gryllomorpha (Gryllomorphella) miramae guentheri Harz, 1976

RAMME (1951) reported *Gryllomorpha uclensis* Pantel, 1890 for "Mazedonien" but the record is based on the data by BERLAND & CHOPARD (1922) from the region of Thessaloniki. Later on, it was referred to *G. guentheri* Harz, 1976 (WILLEMSE 1984) now considered *G. miramae guentheri* (GOROCHOV 2009). Recently, the species (as *G. cf. mira-*

mae Medvedev, 1933) has been recorded in Bulgaria and though not yet found in Macedonia, its occurrence in this country is quite probable.

Stenonemobius (Stenonemobius) gracilis (Jakovlev, 1871)

The record by RAMME (1951) ("Mazedonien") concerns the locality Lembet in Greece (BURR et al. 1923, HARZ 1969). Anyway, the species may also be found in Macedonia.

Myrmecophilus acervorum (Panzer, 1799)

In the past the species has been understood on a wider scale, including few presently distinguished taxa. BACCETTI (1966) has shown that *M. acervorum* occurs mostly in Central Europe and possibly does not penetrate in the southern parts of the continent. It was not included in the list of Greek fauna (WILLEMSE 1984, WILLEMSE & WILLEMSE 2008). The records for Bulgaria and Macedonia also appear to involve other taxa (POPOV & CHOBANOV 2004, CHOBANOV 2009b, Chobanov, unpublished data). Thus, the species is subtracted from the list of Macedonian fauna.

Eyprepocnemis plorans (Charpentier, 1825)

The records for Macedonia, all without pointing exact locality (RAMME 1951, US & MATVEJEV 1967), refer to the data by BURR et al. (1923) for the Greek territory. The northernmost locality of the species in Greece is in the vicinity of Kilkis (WILLEMSE 1984) and thus there is a possibility for its occurring at the shores of Dojran Lake in Macedonia.

Odontopodisma schmidtii (Fieber, 1853)

O. schmidtii has been reported from Macedonia (Crni Vrh) by Us (1938). At the time of the publication by Us, only this species from the genus *Odontopodisma* has been recognised and today its range is known to cover only territories northwards of Bosnia and Hercegovina and Western Serbia (see also CHOBANOV 2009a). The later records by RAMME (1951) and US & MATVEJEV (1967) are based on the data by Us (1938). In Macedonia only two species of *Odontopodisma* (*O. decipiens* and *O. albanica*) occur. The record of *O. schmidtii* is here referred to *O. decipiens* since it is widely distributed in the country, while *O. albanica* is restricted only to Skopska Crna Gora Mountain (occurring together with the more common *O. decipiens*).

Odontopodisma fallax Ramme, 1951

US & MATVEJEV (1967) mention the species for Slovenia, Croatia, Serbia, Bosnia and Hercegovina, and Macedonia without pointing to localities. Today its occurrence in Serbia and Macedonia is not confirmed, moreover no other information for Macedonia exists and thus it is not clear where the authors take their information from. The known distribution of the species based on confirmed material is restricted to the Northern Adriatic area (A. Lehmann, personal communication). Hence, the species is omitted from the list of Macedonian orthopterans.

Acrida turrita (Linnaeus, 1758)

The record by Us (1938) without exact locality is referred to *A. ungarica* since *A. turrita* does not occur on the Balkan mainland.

Platypygius crassus (Karny, 1907)

The species has been recorded from "Lembet" near Thessaloniki in Greece by BURR et al. (1923) (under the name *Aeolopus burri* Uvarov, 1923) and later on this information has been cited by RAMME (1951) ("Mazedonien") and US & MATVEJEV (1967) ("Ma?"). In

fact, *P. crassus* inhabits exclusively the seashore and has never been found in the inland. Thus, its occurrence in Macedonia is rejected.

Chrysochraon dispar (Germar, 1831)

The only record of this species from Macedonia comes from US & MATVEJEV (1967) but they do not give locality and it is not clear where the information has been taken from. Though it is possible that the species may be found in the northeasternmost part of the country, we delete it from the list of Macedonian orthopterans until new material is found.

Dociostaurus jagoi Soltani, 1978?

RAMME (1951) reported *D. genei* (Ocskay, 1833) for "Mazedonien" basing his record on the data by BURR et al. (1923) from "Lembet" in Greece. It is possible that the data actually concern *D. jagoi* (see WILLEMSE 1984, WILLEMSE & WILLEMSE 2008), which occurring in Macedonia (along Vardar River) is possible.

Chorthippus dichrous (Eversmann, 1859)

The range of occurrence of *Ch. dichrous* is now believed to cover only territories eastwards of Central Bulgaria (CHOBANOV 2009b) and Northeastern Greece (STUMPNER & HELVERSEN 1992, 1994, WILLEMSE & WILLEMSE 2008). In the lowland and hilly terrains of the Central and Southern Balkans (including the territory of Macedonia) an intermediate form between *Ch. dorsatus* and *Ch. dichrous* occurs. All earlier records of *Ch. dichrous* for this country (RAMME 1951 as *Ch. loratus* - see BEY-BIENKO & PESHEV 1960 for a comment upon the Ramme's *loratus* and *brauneri*; ČEJCHAN 1963, KARAMAN 1975) are here referred to *Chorthippus dorsatus* x *dichrous* sensu STUMPNER & HELVERSEN (1992, 1994).

Chorthippus albomarginatus (De Geer, 1773)

Omitted (see under *Chorthippus oschei*).

Conclusions

The study aimed to contribute to the knowledge of the orders Mantodea and Orthoptera of Macedonia (FYR of Macedonia) by revising the collection of the Macedonian Museum of Natural History and available literature. The collection of MMNH, revised in 2004, comprised four species of Mantodea (three subfamilies, two families) and 102 species of Orthoptera (22 subfamilies, 10 families, six superfamilies, two suborders). Six species of Orthoptera in MMNH are new for the fauna of Macedonia. After critical summary of all the published information on Orthoptera and Mantodea from Macedonia and addition of new data (present study; D. Chobanov, unpublished data), an updated check-list of the species occurring in Macedonia is prepared, including the new records and excluding the wrong ones. In the present study eight species (*Isophya* aff. *brevicauda*, *Pholidoptera frivaldskyi*, *Tartarogryllus tartarus*, *Gryllomorpha dalmatina*, *Ovaliptila newmanae*, *Gryllotalpa stepposa*, *Xya pfaendleri*, *Chorthippus dorsatus* x *dichrous*) are reported as new to the fauna of Macedonia and 27 taxa (26 species and one subspecies) are deleted from the list (see "Omitted taxa"). As a result, four species of mantids and 169 taxa of orthopterans (167 species and two additional subspecies) are recorded in Macedonia. Considering the existence of many

weakly explored territories in the country and a few unpublished records available (D. Chobanov), at least 15 taxa are expected to be added to the list of Macedonian fauna. In addition, the occurrence of *Saga campbelli* and *Stenobothrus graecus* in Serbia was found to concern wrong localisation (in the first case) or misidentification (in the second case).

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