

## Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey

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### ABSTRACT

In this study which contributes to the distribution of species of Ensifera (Insecta: Orthoptera), which are known as bush-crickets, in Turkey, specimens of Tettigoniidae, Gryllidae and Gryllotalpidae (Orthoptera) collected from Turkey and preserved in Aksaray University and Namık Kemal University have been examined. As a result, a total of 117 species-subspecies belonging to 37 genera of the family Tettigoniidae, 6 species belonging to five genera of the family Gryllidae and one species belonging to one genus of the family Gryllotalpidae have been determined from the examined material. Of these species, 67 species are endemic to Turkey, and 12 are harmful to agricultural crops.

*Key words:* Orthoptera, Ensifera, Tettigoniidae, Gryllidae, Gryllotalpidae, endemism, Turkey

### INTRODUCTION

The present paper is based on the material belonging to suborder Ensifera (Orthoptera) collected in different parts of European and Anatolian regions of Turkey. The authors collected all of the species during scientific research trips of 12 years. The study covers tree families of suborder Ensifera, Tettigoniidae, Gryllidae and Gryllotalpidae. The list and descriptions below are based on this material of 606 specimens.

The suborder Ensifera is represented by Tettigoniidae, Gryllidae, Gryllotalpidae, Rhaphidophoridae, Schizodactylidae, and Mogoplistidae in Turkey (Ünal, 2015). This study is concerned with the first tree families. Tettigoniidae contains nearly half of Orthoptera taxa, which occupy a very wide area in Turkey, while Gryllidae and Gryllotalpidae comprise 36 and one species in Turkey, respectively (Ünal, 2015). There are numerous studies dealing with Ensifera fauna of Turkey, and such as those are; Bolivar, 1899; Uvarov, 1934; Ramme, 1951; Karabağ, 1958, 1961; Demirsoy, 1975; Salman, 1978; Karabağ *et al.*, 1961, 1971, 1980; Güneş, 1984; Naskrecki and Ünal, 1995; Çıplak, 2000, 2003, 2004, 2008; Çıplak *et al.*, 2002b, 2003; Çıplak and Heller,

2001, 2005; Önder *et al.*, 1999a, b; Sevgili, 2004; Sevgili and Çıplak, 2000; Sevgili *et al.*, 2006, 2010, 2011; Heller *et al.*, 2008; Ünal, 1999, 2003a, 2003b, 2003c, 2005, 2006, 2010, 2011, 2012, 2015; Tazegül and Önder, 2012; Kaya *et al.*, 2012, 2013; Şirin *et al.*, 2014 and Taylan *et al.*, 2014.

The present paper includes Ensifera suborder in Turkey comprising 117 taxa, belonging to 43 genera, eight subfamilies, and three families. Among 117 taxa, 67 species are endemic to Turkey (Table 1, Table 2).

Table 1. The list of distributional pattern, endemism and agricultural pest situation of listed 117 species in this study.

| Subfamily/species or subspecies             | Middle East and Turkey | Endemic to Turkey | Balkans and Turkey | Caucasia and Turkey | Widespread | Agricultural pest |
|---|------------------------|-------------------|--------------------|---------------------|------------|-------------------|
| GRYLLINAE                                   |                        |                   |                    |                     |            |                   |
| <i>Gryllus campestris</i>                   | -                      | -                 | -                  | -                   | X          | X                 |
| <i>Melanogryllus desertus</i>               | -                      | -                 | -                  | -                   | X          | X                 |
| <i>Eumodicogryllus bordigalensis</i>        | -                      | -                 | -                  | -                   | X          |                   |
| <i>Modicogryllus frontalis</i>              | -                      | -                 | -                  | -                   | X          |                   |
| <i>Turanogryllus lateralis</i>              | -                      | -                 | -                  | X                   | -          |                   |
| OECANTHINAE                                 |                        |                   |                    |                     |            |                   |
| <i>Oecanthus pellucens</i>                  | -                      | -                 | -                  | -                   | X          | X                 |
| GRYLLOTALPINAE                              |                        |                   |                    |                     |            |                   |
| <i>Gryllotalpa gryllotalpa</i>              | -                      | -                 | -                  | -                   | X          | X                 |
| BRADYPORINAE                                |                        |                   |                    |                     |            |                   |
| <i>Bradyporus (Callimenes) avanos</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bradyporus (Callimenes) dilatatus</i>    | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bradyporus (Callimenes) karabagi</i>     | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bradyporus (Callimenes) toros</i>        | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bradyporus (Bradyporus) dasypus</i>      | -                      | -                 | X                  | -                   | -          | -                 |
| CONOCEPHALINAE                              |                        |                   |                    |                     |            |                   |
| <i>Conocephalus (Xiphidion) fuscus</i>      |                        | -                 | -                  | -                   | X          | -                 |
| <i>Conocephalus (Conocephalus) hastatus</i> |                        | -                 | X                  | -                   | -          | X                 |
| PHANEROPTERINAE                             |                        |                   |                    |                     |            |                   |
| <i>Acrometopa syriaca</i>                   | -                      | -                 | -                  | -                   |            |                   |
| <i>Isophya acuminata</i>                    | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya amplipennis</i>                  | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya autumnalis</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya bicarinata</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya cania</i>                        | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya ilkazi</i>                       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya nervosa</i>                      | -                      | X                 | -                  | -                   | -          | X                 |
| <i>Isophya redtenbacheri</i>                | -                      | -                 | -                  | X                   | -          | -                 |

## Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey

Table 1. Continue

| Subfamily/species or subspecies             | Middle East and Turkey | Endemic to Turkey | Balkans and Turkey | Caucasia and Turkey | Widespread | Agricultural pest |
|---|------------------------|-------------------|--------------------|---------------------|------------|-------------------|
| PHANEROPTERINAE                             |                        |                   |                    |                     |            |                   |
| <i>Isophya reticulata</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya schneideri</i>                   | -                      | -                 | -                  | X                   | X          | -                 |
| <i>Isophya speciosa</i>                     | -                      | -                 | X                  | -                   | -          | X                 |
| <i>Isophya stenocauda obenbergeri</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya stenocauda stenocauda</i>        | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya sureyai</i>                      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya thracica</i>                     | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya yaraligozi</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Isophya zernovi</i>                      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Leptophyes albovittata</i>               | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Parapoecilimon antalyaensis</i>          | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Phaneroptera (Phaneroptera) falcata</i>  | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Phonochorion uvarovi</i>                 | -                      | -                 | -                  | X                   | -          | -                 |
| <i>Poecilimon (Poecilimon) armeniacus</i>   | -                      | -                 | -                  | X                   | -          | -                 |
| <i>Poecilimon (Poecilimon) ataturki</i>     | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) bosporicus</i>   | -                      | X                 | -                  | -                   | -          | X                 |
| <i>Poecilimon celebi teylikarabagi</i>      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) cervus</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) concinnus</i>    | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) glandifer</i>    | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) iucundus</i>     | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) karabukensis</i> | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) kocaki</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) sanctipauli</i>  | -                      | -                 | X                  | -                   | -          | X                 |
| <i>Poecilimon (Poecilimon) schmidtii</i>    | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) similis</i>      | -                      | -                 | -                  | X                   | -          | -                 |
| <i>Poecilimon (Poecilimon) tauricola</i>    | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) turciae</i>      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) xenocercus</i>   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Poecilimon (Poecilimon) zonatus</i>      | -                      | -                 | -                  | X                   | -          | -                 |
| <i>Tylopsis lilifolia</i>                   | -                      | -                 | -                  | -                   | X          | X                 |
| SAGINAE                                     |                        |                   |                    |                     |            |                   |
| <i>Saga cappadocica</i>                     | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Saga ephippigera ephippigera</i>         | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Saga ephippigera syriaca</i>             | X                      | -                 | -                  | -                   | -          | -                 |

Table 1. Continue

| Subfamily/species or subspecies         | Middle East and Turkey | Endemic to Turkey | Balkans and Turkey | Caucasia and Turkey | Widespread | Agricultural pest |
|---|------------------------|-------------------|--------------------|---------------------|------------|-------------------|
| SAGINAE                                 |                        |                   |                    |                     |            |                   |
| <i>Saga natoliae</i>                    | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Saga puella</i>                      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Saga rhodiensis</i>                  | -                      | -                 | X                  | -                   | -          | -                 |
| TETTIGONIINAE                           |                        |                   |                    |                     |            |                   |
| <i>Anterastes burri</i>                 | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Anterastes niger</i>                 | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Anterastes serbicus</i>              | -                      | -                 | X                  | -                   | -          | -                 |
| <i>Anterastes turcicus</i>              | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Apholidoptera pietschmanni</i>       | X                      | -                 | -                  | -                   | -          | -                 |
| <i>Bolua turkiyae</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bucephaloptera robusta</i>           | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Bucephaloptera bucephala</i>         | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Decorana incerta</i>                 | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Decticus verrucivorus</i>            | -                      | -                 | -                  | -                   | X          | X                 |
| <i>Decticus albifrons</i>               | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Eupholidoptera unimacula</i>         | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Eupholidoptera tahtalica</i>         | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Eupholidoptera mersinensis</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Eupholidoptera karabagi</i>          | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Gampsocleis recticauda</i>           | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Medecticus assimilis</i>             | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Montana uvarovi</i>                  | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera castaneoviridis</i> | -                      | -                 | X                  | -                   | -          | -                 |
| <i>Parapholidoptera distincta</i>       | -                      | -                 | -                  | X                   | -          | -                 |
| <i>Parapholidoptera karabagi</i>        | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera kosswigi</i>        | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera salmani</i>         | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera signata</i>         | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera spinulosa</i>       | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Parapholidoptera ziganensis</i>      | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pezodrymadusa affinis</i>            | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pezodrymadusa konowi</i>             | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pezodrymadusa kurmana</i>            | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pezodrymadusa lata</i>               | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pezodrymadusa subinermis</i>         | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Pholidoptera aptera</i>              | -                      | -                 | -                  | X                   | X          | -                 |

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Table 1. Continue

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|---|------------------------|-------------------|--------------------|---------------------|------------|-------------------|
| TETTIGONIINAE                             |                        |                   |                    |                     |            |                   |
| <i>Pholidoptera fallax</i>                | -                      | -                 | X                  | -                   | -          | -                 |
| <i>Pholidoptera brevipennis</i>           | -                      | -                 | -                  | -                   | -          | -                 |
| <i>Pholidoptera griseoaptera</i>          | -                      | -                 | X                  | X                   | X          | -                 |
| <i>Pholidoptera guichardii</i>            | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Platycleis affinis</i>                 | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Platycleis albopunctata</i>            | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Platycleis escalerae escalerae</i>     | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Platycleis intermedia intermedia</i>   | -                      | -                 | -                  | -                   | X          | X                 |
| <i>Psorodonotus caucasicus caucasicus</i> | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Psorodonotus davisi</i>                | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Psorodonotus ebneri</i>                | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Psorodonotus rugulosus</i>             | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Psorodonotus suphani</i>               | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Psorodonotus venosus</i>               | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Rhacocleis tuberculata</i>             | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Scotodrymadusa ozkani</i>              | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Scotodrymadusa syrica</i>              | X                      | -                 | -                  | -                   | -          | -                 |
| <i>Sepiana sepium</i>                     | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Sporadiana sporadarum</i>              | -                      | -                 | X                  | -                   | -          | -                 |
| <i>Squamiana salmani</i>                  | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Squamiana sinuate</i>                  | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Sureyaella bella</i>                   | -                      | X                 | -                  | -                   | -          | -                 |
| <i>Tessellana tessellate</i>              | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Tessellana veyseli</i>                 | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Tettigonia caudata</i>                 | -                      | -                 | -                  | -                   | X          | -                 |
| <i>Tettigonia viridissima</i>             | -                      | -                 | -                  | -                   | X          | -                 |

## MATERIAL AND METHODS

This study was carried out between the years of 2002 and 2014, and Ensifera specimens were collected from different localities in European part of Turkey and Anatolia (Fig.1). During the field work, Ensifera specimens were collected by using sweep net and then specimens were prepared as museum material by employing standard methods in the laboratory. Prepared materials were examined at light microscopes Leica Z6 APO, Leica EZ4D and Optica SZM-SMD. For identification, if necessary, male genitalia were dissected and soaked into aqueous 10% potassium hydroxide (KOH) solution at room temperature.

Table 2. Distribution of Ensiferan subfamilies collected (between 2002-2014) in geographical regions of Turkey.

| Subfamilies \ Regions | Mediterranean | Aegean | Marmara | BlackSea | Central Anatolia | Eastern Anatolia | South-Eastern Anatolia |
|-----------------------|---------------|--------|---------|----------|------------------|------------------|------------------------|
| Bradyporinae          | +             | -      | +       | +        | -                | -                | +                      |
| Conocephalinae        | -             | -      | +       | +        | -                | -                | -                      |
| Gryllinae             | -             | -      | +       | +        | -                | -                | -                      |
| Gryllotalpinae        | -             | -      | -       | +        | -                | -                | -                      |
| Oecanthinae           | -             | -      | -       | +        | -                | -                | -                      |
| Phaneropterinae       | +             | +      | +       | +        | +                | +                | -                      |
| Saginae               | +             | +      | +       | +        | +                | +                | +                      |
| Tettigoniinae         | +             | +      | +       | +        | +                | +                | +                      |

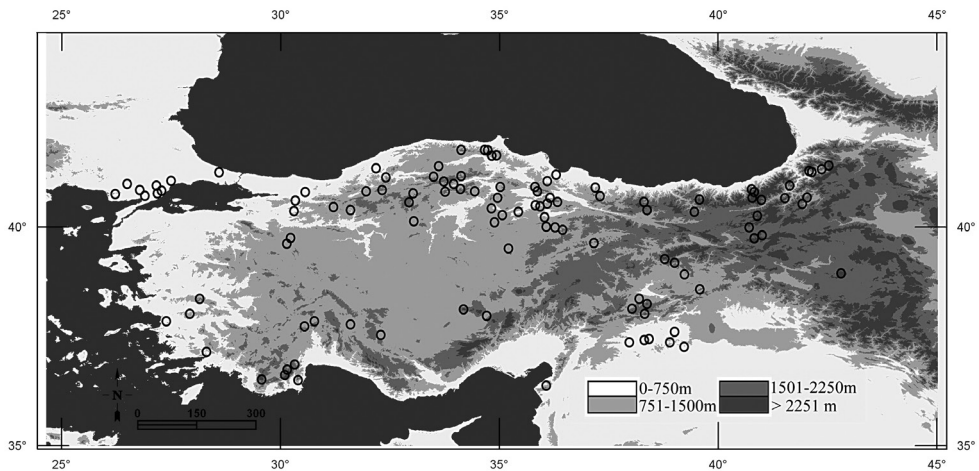


Fig. 1. Sampling localities in Turkey.

The specimens were identified based on the studies by Uvarov, 1934; Ramme, 1939, 1951; Karabağ, 1952, 1956, 1957, 1958, 1961, 1978; Bei-Bienko, 1965; Harz, 1969; Demirsoy, 1975; Salman, 1978; Willemse, 1984, 1985; Naskrecki and Ünal, 1995; Ragge and Reynolds, 1998; Demirsoy, 1999 Ünal, 1999, 2000, 2003a, 2003b, 2003c, 2005, 2006, 2010, 2011, 2012, 2015; Sevgili and Çıplak, 2000; Çıplak and Heller, 2001, 2005; Kim and Kim, 2001; Çıplak *et al.*, 2002a, 2002b, 2009; Çıplak, 2003, 2004, 2008; Sevgili, 2004; Heller *et al.*, 2008; Sevgili *et al.*, 2010, 2011; Massa and Fontana, 2011; Kaya *et al.*, 2012, 2013; Şirin *et al.*, 2014; Taylan *et al.*, 2014 and Eades *et al.*, 2015. Species list of Çıplak *et al.*, 2002a and Eades *et al.*, 2015 were followed in this paper to list Ensifera families, subfamilies and genera. Specimens examined in this study are deposited in Scientific and Technological Application and Research Center (ASUBTAM), Aksaray University (Aksaray/Turkey) and Namık Kemal University, Department of Biology, Entomological Museum (NKUEM) (Tekirdağ/Turkey). In providing localities of newly collected material, the following format is used: Province: city (or town), village (and of areas), altitude, coordinates (if present), collection date, ♂ and ♀ specimen number and the end collector(s).

## RESULTS

Below are listed the species collected by authors of this paper. The nomenclature for the Orthoptera is adopted by Orthoptera Species Files Online version at April 2015 (Eades *et al.*, 2015). In the list is given the name of the taxa, notes on distribution and the examined material. In this study, 117 taxa, belonging to 43 genera, eight subfamilies, and three families were examined and listed below. The listed 117 taxa were grouped using their distribution pattern (Table 2).

### Orthoptera checklist of the material examined in Turkey

#### Suborder: Ensifera

#### Family: Gryllidae Laicharting, 1781

#### Subfamily: Gryllinae Laicharting, 1781

#### *Gryllus campestris* Linne, 1758

Material examined: Ordu, Kumru, Koncalı Village, 1130 m, 03.8.2004, 1 ♂; Tokat, Çamlıbel-Yıldızeli road, 1300 m, 17.8.2004, 1 ♂; Rize, İkizdere-İspir road 75. km, 2000-2100 m, 40° 29' 059" N, 40° 55' 493" E, 30.VII.2005, 1 ♀; Sinop, Sinop-Boyabat road, Dranaz Pass, 1310 m, 41° 42' 598" N, 34° 51' 196" E, 18.VII.2005, 1 ♂ (leg. A. Mol).

#### *Melanogryllus desertus* (Pallas, 1771)

Material examined: Samsun: Ondokuz Mayıs University Campus, 02.6.2003, 350 m, 3 ♂♂; 04.VI.2003, 2 ♂♂, 6 ♀♀ (leg. A. Mol).

#### *Eumodicogryllus bordigalensis* (Latreille, 1804)

Material examined: Tekirdağ, Değirmenaltı Campus, 50 m, 41° 00' 045" N, 27° 35' 029" E, 14.6.2011, 3 ♂♂, 4 ♀♀ (leg. D. Sirin).

#### *Modicogryllus (Modicogryllus) frontalis* (Fieber, 1844)

Material examined: Samsun, Ondokuz Mayıs University Campus, 350 m, 02.6.2003, 2 ♂♂ (leg. A. Mol).

#### *Turanogryllus lateralis* (Fieber, 1853)

Material examined: Samsun: Ondokuz Mayıs University Campus, 02.6.2003, 350 m, 1 ♂ (leg. A. Mol).

#### Subfamily: Oecanthinae Blanchard, 1845

#### *Oecanthus pellucens* (Scopoli, 1763)

Material examined: Kastamonu, 5<sup>th</sup> km of Tosya Ilgazı Pass, 1247 m, 41° 10' 076" N, 34° 03' 783" E, 17.VIII.2011, 1 ♂, 1 ♀ (legs. D. Sirin, A. Mol and G. Akyıldız).

#### Family: Gryllotalpidae Leach, 1815

#### Subfamily: Gryllotalpinae Leach, 1815

***Gryllotalpa gryllotalpa* (Linne, 1758)**

Material examined: Çorum, Eskiköy, Karakaya Province, 450-550 m, 20.8.2003, 1 ♂ (leg. A. Mol).

**Family: Tettigoniidae Krauss, 1902****Subfamily: Bradyporinae Burmeister, 1838*****Bradyporus (Callimenus) avanos* Ünal, 2011**

Material examined: Tokat, Çamlıbel-Artova road, Yatmış Village, 1150 m, 40° 11' 730" N, 36° 29' 086" E, 17.7.2004, 2 ♂♂; 02.7.2012, 1 ♀♀ (leg. A. Mol).

***Bradyporus (Callimenus) dilatatus* (Stål, 1875)**

Material examined: Amasya, Ezinepazarı, Abacı Village, 1250 m, 19.VIII.2004, 1 ♀; Çorum, Alaca, Kürecikbeli Pass, 1100 m, 40°15'967" N, 34° 48' 163" E, 11.8. 2005, 1 ♀ (leg. A. Mol).

***Bradyporus (Callimenus) karabagi* Ünal, 2011**

Material examined: Gaziantep, Araban, Başpınar Village, Yukarı Mülk area, 629 m, 37° 26' 286" N, 37° 30' 884" E, 11.6.2006, 3 ♂♂ (leg. A. Dursun).

***Bradyporus (Callimenus) toros* Ünal, 2011**

Material examined: Antalya, Saklıkent, between Bakırlıdağ Mountain and Pozantı province, 1765 m, 36° 49' 615" N, 30° 17' 215" E, 30.7.2010, 2 ♂♂, 2 ♀♀ (leg. D. Sirin).

***Bradyporus (Bradyporus) dasypus* (Illiger, 1800)**

Material examined: Tekirdağ, Ganos Mountain, (Radar–Hoşkøy) 705m, 40° 45' 778" N, 27° 16' 108" E, 23.VI.2014, 1 ♂, 1 ♀ (leg. D.Sirin and E. Demir).

**Subfamily: Conocephalinae Burmeister, 1839*****Conocephalus (Xiphidion) fuscus* (Fabricius, 1793)**

Material examined: Sivas: Çamlıbel-Yıldızeli road, 20.km, 1400 m, 39° 58' 634" N, 36° 30' 397" E, 19.VIII.2004, 1 ♂ (leg. A. Mol).

***Conocephalus (Conocephalus) hastatus* (Charpentier, 1825)**

Material examined: Sakarya, Sakarya-Geyve road, Şerefiye, 100 m, 23.7.2004, 1 ♀ (leg. A. Mol).

**Subfamily: Phaneropterinae Burmeister, 1838*****Acrometopa syriaca* Brunner Wattenwyl, 1878**

Material examined: Çorum, Eskiköy Village, Tavşan Savacağı area, 700 m, 07.8.2011, 1 ♂ (leg. A. Mol).



*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

***Isophya acuminata* Brunner vonWattenwyl, 1878**

Material examined: Amasya, Ormanözü Village, TRT transmitter station, 1800 m, 40° 46' 215" N, 35° 54' 410" E, 14.7.2004, 1 ♂, 1 ♀; Samsun, Ladik, Derinöz Village, 870 m, 40° 55' 667" N, 35° 45' 989" E, 06.7.2004, 1 ♀; Bolu: Aladağ, Şerif Yüksel Forests, 1600 m, 40° 37' 940" N, 31° 36' 978" E, 15.7.2005, 1 ♀; Tokat, Zile, Hasanağa Village, 730 m, 40° 12' 807" N, 35° 55' 689" E, 01.8.2005, 1 ♂ (leg. A. Mol).

***Isophya amplipennis* Brunner Von Wattenwyl, 1878**

Material examined: Tekirdağ, Kumbağ, Uçmak Dere 1.5-2.5 km north, 357 m, 40° 49' 187" N, 27° 23' 599" E, 25.5.2011, 2 ♂♂, 3 ♀♀ (legs. D. Sirin, N. Yılmazzer and L. Can); Kumbağ, between Uçmakdere stream and Yeniköy area, 450 m, 09.6.2011, 4 ♂♂ (legs. D. Sirin and L. Can).

***Isophya autumnalis* Karabağ, 1962**

Material examined: Trabzon, Zigana Mountain, Gümüş ski center, 2150 m, 40° 38' 697" N, 39° 24' 164" E, 14.8.2004, 3 ♂♂, 3 ♀♀; 26.7.2005, 2 ♀♀; 19.8.2006, 2 ♂♂, 1 ♀; Erzurum, İspir, Göluyurt Pass, 2380 m, 40° 20' 904" N, 40° 47' 456" E, 19.8.2006, 1 ♂ (leg. A. Mol).

***Isophya bicarinata* Karabağ, 1957**

Material examined: Erzurum, Palandöken Mountains, 2475 m, 24.7.2003, 2 ♀♀ (leg. A. Mol).

***Isophya cania* Karabağ, 1975**

Material examined: Bolu, Mudurnu, Güney Felaketler Village, 1100 m, 23.7.2004, 2 ♀♀ (leg. A. Mol).

***Isophya ilkazi* Ramme, 1951**

Material examined: Çankırı, Ilgaz Mountain, Doruk Hotels area, 1920 m, 41° 04' 046" N, 33° 44' 541" E, 12.8.2004, 3 ♂♂, 2 ♀♀; Sinop, Between Soğuksu and Çakırlar province, 900 m, 41° 45' 732" N, 34° 55' 582" E, 27.7.2004, 2 ♂♂; Sinop-Boyabat road, Dranaz Pass, 1310 m, 41° 42' 598" N, 34° 51' 196" E, 18.7.2005, 1 ♂; Kastamonu, Tosya-İskilip road, Türbe Pass, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 20.8.2004, 1 ♂; Tosya Ilgazı Pass, 1650 m, 41° 07' 665" N, 34° 04' 290" E, 20.8.2004, 1 ♂; 18.8.2011, 1 ♂, 2 ♀♀ (leg. A. Mol).

***Isophya nervosa* Ramme, 1931**

Material examined: Bolu, Aladağ, Şerif Yüksel Mountain, 1600 m, 40° 37' 940" N, 31° 36' 978" E, 22.7.2004, 3 ♀♀; Kastamonu, Tosya-İskilip road, Türbe Pass, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 20.8.2004, 2 ♀♀; Sinop, Erfelek, Kötü Güney Plateau, 1065 m, 18.7.2005, 1 ♀ (leg. A. Mol).

***Isophya redtenbacheri* Adelung, 1907**

Material examined: Artvin: Yusufeli, Yaylacık Village, 2100 m, 10.8.2004, 1 ♂, 1 ♀ (leg. A. Mol).

***Isophya reticulata* Ramme, 1951**

Material examined: Giresun, Giresun-Şebinkarahisar road, Eğribel Pass, 2250 m, 40° 27' 532" N, 38° 23' 331" E, 07.8.2004, 1 ♀; 23.8.2005, 1 ♀ (leg. A. Mol).

***Isophya schneideri* Brunner von Wattenwyl, 1878**

Material examined: Amasya, exit of Ormanözü Village, TRT transmitter station, 1800 m, 40° 46' 215" N, 35° 54' 410" E, 14.7.2004, 2 ♂♂, 2 ♀♀ (leg. A. Mol).

***Isophya speciosa* (Frivaldsky, 1867)**

Material examined: Samsun, Ondokuz Mayıs University, Kurupelit Campus, 200 m, 21.5.2002, 2 ♀♀; Ordu, Kumru, Konculu Village, 1130 m, 03.7.2004, 1 ♂; Ladik, Derinöz Village, 870 m, 40° 55' 667" N, 35° 45' 989" E, 06.7.2004, 1 ♂; Amasya, Suluova, Northwest side of Akdağ Mountain, 1500-1600 m, 08.7.2010, 2 ♂♂, 1 ♀; (leg. A. Mol).

***Isophya stenocauda obenbergeri* Maran, 1958**

Material examined: Kastamonu, Kastamonu-Seydiler road, Oyrak Pass, 1210 m, 41° 32' 930" N, 33° 46' 806" E, 20.7.2004, 1 ♀; Çankırı, Ilgaz-Çankırı road, 925 m, 21.7.2004, 1 ♀; Kurşunlu-Atkaracalar road, 1280 m, 40° 50' 604" N, 33° 11' 110" E, 14.7.2005, 1 ♀ (leg. A. Mol).

***Isophya stenocauda stenocauda* Ramme, 1951**

Material examined: Kastamonu, Tosya-İskilip road, Türbe Pass, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 20.8.2004, 1 ♂, 3 ♀♀ (leg. A. Mol).

***Isophya sureyai* Ramme, 1951**

Material examined: Gümüşhane, Kelkit, Pöskedağ Mountain, 2100-2250 m, 39° 53' 550" N, 39° 22' 007" E, 24.7.2005, 1 ♂, 1 ♀; Çorum, top of the Köseadağ Mountain, 1700 m, 40° 40' 825" N, 34° 48' 120" E, 13.7.2011, 3 ♀♀ (leg. A. Mol).

***Isophya thracica* Karabağ, 1962**

Material examined: Çorum, Mecitözü, Emirbağ Village, 650 m, 40° 24' 658" N, 35° 16' 864" E, 27.6.2004, 2 ♀♀; Merkez, road to Beydili-Çatak Village, 865 m, 40° 36' 549" N, 34° 54' 075" E, 26.5.2004, 3 ♀♀ (leg. A. Mol); Tekirdağ, Kumbağ, Uçmak dere 1.5-2.5 km north, 357 m, 40° 49' 187" N, 27° 23' 599" E, 25.V.2011, 5 ♂♂, 2 ♀♀ (legs. D. Sirin, N. Yılmaz and L. Can); Kumbağ, between Uçmakdere stream and Yeniköy area, 450 m, 09.VI.2011, 2 ♂♂ (legs. D. Sirin and L. Can).

***Isophya yaraligozi* Ünal, 2003**

Material examined: Kastamonu, Devrekani-Çatalzeytin road, Bozarmut Village, Yaralı Göz Pass, 1308 m, 41° 43' 695" N, 34° 01' 623" E, 17.8.2011, 1 ♀ (leg. A. Mol).

***Isophya zernovi* Miram, 1938**

Material examined: Karabük, Eskipazar, Çilekbeli Pass, 1440 m, 24.VII.2004, 1 ♂, 1 ♀; Bayburt, Aşkale road, Kopdağı Mountain Pass, 2460 m, 40° 02' 260" N, 40° 30' 738" E, 09.8.2004, 2 ♀♀ (leg. A. Mol).

***Leptophyes albovittata* (Kollar, 1833)**

Material examined: Amasya, Ezine Bazaar, entrance of Abacı Village, 1025 m, 40° 38' 556" N, 36° 02' 068" E, 15.VII.2004, 2 ♀♀; Tokat, Zile, Yıldıztepe, Karaağaç province, 900 m, 40° 09' 680" N, 35° 54' 309" E, 18.8.2004, 3 ♀♀; Sinop, Sinop-Boyabat road, between Soğuksu and Çakırlar, 900 m, 41° 45' 732" N,

*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

34° 55' 582" E, 27.7.2004, 2 ♀♀; Amasya, Suluova, Akdağ Değirmeni area, 1150 m, 08.7.2010, 3 ♀♀ (leg. A. Mol); Edirne: Keşan-Çanakkale road, 3<sup>rd</sup> km of Yerli Su-Koru Mountain road, 260 m, 40° 42' 857" N, 26° 45' 186" E, 18.6.2012, 1 ♂, 2 ♀♀ (nymph) (legs. D. Sirin, N. S. Odabası and L. Can).

***Parapoecilimon antalyaensis* Karabağ, 1975**

Material examined: Antalya, Kemer, Tahtalı Mountain, Gürleyik province, 1479 m, 36° 33' 067" N, 030° 25' 001" E, 02.VIII.2010, 5 ♂♂, 2 ♀♀ (legs. D. Sirin and U. Sirin).

***Phaneroptera (Phaneroptera) falcata* (Poda, 1761)**

Material examined: Elazığ, Exit of Keban 15.km, 1376 m, 38° 42' 790" N, 38° 57' 428" E, 03.7.2012, 1 ♂, 1 ♀ (legs. D. Sirin and A. Mol).

***Phonochorion uvarovi* Karabağ, 1956**

Material examined: Rize, İkizdere-Ispir road, Ovitdağı Mountain, 2200 m, 40° 38' 626" N, 40° 44' 234" E, 13.8.2004, 1 ♂, 1 ♀ (leg. A. Mol).

***Poecilimon (Poecilimon) armeniacus* (Uvarov, 1921)**

Material examined: Malatya, Doğanşehir, Çıgılık, upper side of Gürobası Village, 1791 m, 38° 05' 138" N, 37° 58' 576" E, 04.7.2012, 2 ♂♂, 1 ♀ (legs. A. Mol and D. Sirin).

***Poecilimon (Poecilimon) ataturki* Ünal, 1999**

Material examined: Bolu, Yeniçağa Lake side, 950 m, 40° 46' 383" N, 32° 01' 22" E, 27.VII.2004, 1 ♂, 3 ♀♀; Kastamonu, Kastamonu-Tosya road, 30.km, 950 m, 20.VIII.2004, 1 ♂, 2 ♀♀ (leg. A. Mol).

***Poecilimon (Poecilimon) bosporicus* Brunner von Wattenwyl, 1878**

Material examined: Bolu, Aladağ, Şerif Yüksel Ormanları, 1600 m, 40° 37' 940" N, 31° 36' 978" E, 22.VII.2004, 1 ♂; Kastamonu, Kastamonu-Tosya road, Tosya Ilgazı Pass, 1650 m, 41° 07' 665" N, 34° 04' 290" E, 20.VIII.2004, 3 ♂♂, 2 ♀♀; Çankırı, Ilgaz Mountain, Doruk Hotels area, 1920 m, 41° 04' 046" N, 33° 44' 541" E, 21.VIII.2004, 1 ♂; Kastamonu, Tosya, Tosya İskilip road, Türbe Pass, 1600 m, 40° 56' 250" N, 34° 12' 702" E, 17.VIII.2011, 1 ♂, 3 ♀♀ (leg. A. Mol).

***Poecilimon celebi teyfikarabagi* Ünal, 2005**

Material examined: Çankırı, Ilgaz, İndağı Pass, 1425 m, 41° 02' 384" N, 33° 44' 568" E, 21.VII.2004, 1 ♂ (leg. A. Mol).

***Poecilimon (Poecilimon) cervus* Karabağ, 1950**

Material examined: Karabük, Eskipazar, Çilekbeli Pass, 1440 m, 24.VII.2004, 1 ♂, 3 ♀♀, (1 ♀ nymph) (leg. A. Mol).

***Poecilimon (Poecilimon) concinnus* (Brunner von Wattenwyl, 1878)**

Material examined: Amasya: Entrance of Ormanözü Village, 1035 m, 40° 44' 998" N, 35° 49' 395" E, 14.VII.2004, 1 ♂ (leg. A. Mol).

***Poecilimon (Poecilimon) glandifer* Karabağ, 1950**

Material examined: Samsun: Ladik, Derinöz Village, 870 m, 40° 55' 667" N, 35° 45' 989" E, 06.7.2004, 3 ♂♂, 2 ♀♀; Tokat: Zile, entrance of Yıldıztepe, 750 m, 40° 12' 807" N, 35° 55' 689" E, 16.7.2004, 1 ♂ (leg. A. Mol).

***Poecilimon (Poecilimon) iucundus* Ünal, 2003**

Material examined: Çankırı: Kurşunlu-Atkaracalar road, 1280 m, 40° 50' 604" N, 33° 11' 110" E, 14.7.2005, 1 ♂, 2 ♀♀ (leg. A. Mol).

***Poecilimon (Poecilimon) karabukensis* Ünal, 2003**

Material examined: Sakarya, Geyve, Taraklı, Soğuksu province, 650-700 m, 40° 26' 855" N, 30° 22' 165" E, 23.7.2004, 1 ♀ (leg. A. Mol).

***Poecilimon (Poecilimon) kocaki* Ünal, 1999**

Material examined: Bolu, Aladağ, Şerif Yüksel Forest, 1600 m, 40° 37' 940" N, 31° 36' 978" E, 22.6.2004, 1 ♂, 1 ♀ (leg. A. Mol).

***Poecilimon (Poecilimon) sanctipauli* Brunner von Wattenwyl, 1878**

Material examined: Muğla, Telsiz area, 1615 m, 16.VIII.2006, 1 ♂, 1 ♀ (leg. A. Mol); Antalya, Elmalı, near Ovacık village, 1996 m, 36° 44' 206" N, 30° 10' 005" E, 27.VII.2013, 1 ♂ (legs. D. Sirin and M. Kılınc).

***Poecilimon (Poecilimon) schmidtii* (Fieber, 1853)**

Material examined: Ordu, Ünye, Tekkiraz, 930 m, 29.VI.2003, 2 ♀♀ (leg. A. Mol).

***Poecilimon (Poecilimon) similis* Retowski, 1889**

Material examined: Artvin, Şavşat, Aşağı Kocabey Plateau, 1600-1700 m, 41° 13' 606" N, 42° 26' 373" E, 28.VII.2005, 2 ♀♀; Sinop, Erfelek, Kızılca Elma Village, 620 m, 18.IX.2005, 1 ♂ (legs. A. Mol)

***Poecilimon (Poecilimon) tauricola* Ramme, 1951**

Material examined: Artvin, Yusufeli, Yaylacık Village, 2000 m, 10.8.2004, 1 ♂ (leg. A. Mol).

***Poecilimon (Poecilimon) turciae* (Ramme, 1951)**

Material examined: Bolu, Mudurnu, Güney Felaketler Village, 1100 m, 23.VII.2004, 1 ♀ (leg. A. Mol).

***Poecilimon (Poecilimon) xenocercus* Karabağ, 1955**

Material examined: Çorum, road to Beydil-Çatak Villages, 865 m, 40° 36' 549" N, 34° 54' 075" E, 26.6.2004, 6 ♂♂, 5 ♀♀ (leg. A. Mol).

***Poecilimon (Poecilimon) zonatus* Bolívar, 1899**

Material examined: Antalya, Elmalı, near Ovacık village, 1996 m, 36° 44' 206" N, 30° 10' 005" E, 27.7.2013, 1 ♂ (legs. D. Sirin and M. Kılınc).

*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

***Tylopsis lilifolia* (Fabricius, 1793)**

Material examined: Karabük, Safranbolu-Bartın road, 3. km, 450 m, 27.5.2004, 1 ♀; Çorum:, Osmancık, Karaağaç province, 550 m, 20.7.2004, 1 ♂; Bolu, near Yeniçağa Lake, 950 m, 40° 46' 383" N, 32° 01' 22" E, 22.7.2004, 1 ♂; Sakarya, Sakarya-Geyve road, Şerefiye, 100 m, 23.VI.2004, 1 ♂, 2 ♀♀ (leg. A. Mol); Kastamonu, Ilgaz National Park, around TRT transmitter station, 2045 m, 41°03' 246" N, 33° 43' 053" E, 18.VIII.2011, 1 ♂ (legs. D. Sirin and G. Akyıldız); Edirne, Keşan-Çanakkale road, Yerli Su-Koru Dağı 3.km, 260 m, 40° 42' 857" N, 26° 45' 186" E, 18.VI.2012, 1 ♂, 2 ♀♀ (legs. D. Sirin, N. S. Odabası and L. Can); Tekirdağ, between Ormanlı and Hoşköy, near radar, 899 m, 40° 47' 238" N, 27° 18' 301" E, 25.IX.2012, 2 ♂♂ (leg. D. Sirin).

**Subfamily: Saginae Brunner von Wattenwyl, 1878**

***Saga cappadocica* Werner, 1903**

Material examined: Tokat, Çamlıbel, 1200 m, 40° 11' 730" N, 36° 29' 086" E, 17.7.2004, 1 ♂, 1 ♀; Yozgat, 10<sup>th</sup> km of Yozgat-Sorgun road, 1160 m, 39° 49' 463" N, 35° 03' 871" E, 11.8I.2005, 1 ♂ (leg. A. Mol); Ankara, 6<sup>th</sup> km of Çubuk to Şabanözü road, Mutlu Village road, 1090 m, 40° 14' 760" N, 33° 05' 199" E, 10.VII.2011, 3 ♂♂, 2 ♀♀ (leg. D. Sirin).

***Saga ephippigera ephippigera* Fischer von Waldheim, 1846**

Material examined: Adıyaman, Çelikhan road, Sürgü Village Plateau, 1612 m, 38°11.041, N, 038°14 039 E, 02.VI.2010, 2 ♂♂, 2 ♀♀ (leg. D. Sirin); Malatya, Konak, near Yukari Banaz Village, 1712 m, 38° 15' 695" N, 038° 18' 507" E, 02.6.2010, 2 ♂♂ (leg. D. Sirin); Elazığ, Sivrice, Hazarababa ski center, 1790 m, 38° 25' 029" N, 39° 18' 766" E, 03.7.2012, 2 ♂♂; exit of Keban 15. km, 1376 m, 38° 42' 790" N, 38° 57' 428" E, 03.7.2012, 1 ♂; Erzincan, Kemaliye province, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 03.7.2012, 3 ♂♂, 2 ♀♀ (legs. D. Sirin and A. Mol).

***Saga ephippigera syriaca* Lucas, 1864**

Material examined: Şanlıurfa, Bozova province, Gülbiten avenue, 649 m, 37° 23' 163" N, 38° 31' 779" E, 01.7.2012, 4 ♀♀ (leg. D. Sirin).

***Saga natoliae* Serville, 1838**

Material examined: Tekirdağ, Kumbağ, Uçmakdere stream, between 1.5 to 2.5th km, Northeast side, 357 m, 40° 49' 187" N, 27° 23' 599" E, 25.5.2011, 1 ♂ (legs. D. Sirin, N. Yılmaz and L. Can).

***Saga puella* Werner, 1901**

Material examined: İzmir, Tire province, Dibekçi area, 1388 m, 37° 58' 688" N, 27° 51' 674" E, 14.7.2010, 1 ♀ (nymph) (leg. D. Sirin).

***Saga rhodiensis* Salfi, 1929**

Material examined: Antalya, Kemer, Tahtalı Mountains, Gürleyik province, 1479 m, 36° 33' 067" N, 030° 25' 001" E, 02.8.2010, 2 ♂♂, 1 ♀ (legs. D. Sirin and U. Sirin).

**Subfamily: Tettigoniinae Krauss, 1902**

***Anterastes burri* Karabağ, 1951**

Material examined: Bolu, Mudurnu province, Güney Felaketler Village, 1100 m, 23.7.2004, 1 ♂; Çankırı, Kurşunlu-Atkaracalar road, 1280 m, 40° 50' 604" N, 33° 10' 110" E, 14.7.2005, 3 ♂♂, 1 ♀ (leg. A. Mol).

***Anterastes niger* Ünal, 2000**

Material examined: Amasya, exit of Ormanözü Village, TRT transmitter station, 1800 m, 40° 46' 215" N, 35° 54' 410" E, 14.VII.2004, 1 ♂ (leg. A. Mol).

***Anterastes serbicus* Brunner von Wattenwyl, 1882**

Material examined: Giresun, Giresun-Şebinkarahisar road, Eğribel Pass, 1900 m, 40° 28' 740" N, 38° 22' 709" E, 15.VIII.2004, 3 ♂♂, 1 ♀; 2250 m, 40° 27' 532" N, 38° 23' 331" E, 07.VIII.2004, 3 ♂♂; Kastamonu, Tosya Ilgazı Pass, 1650 m, 41° 07' 665" N, 34° 04' 290" E, 20.VII.2004, 1 ♂, 1 ♀; Tosya-İskilip road, Türbe Pass, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 20.VII.2004, 3 ♂♂, 1 ♀; 17.VIII.2011, 1 ♀; Tokat, Tokat-Çamlıbel road, Yatmış Village, 1150 m, 40° 11' 730" N, 36° 29' 086" E, 17.VII.2004, 1 ♀; Zile province, entrance of Yıldıztepe Town, 750 m, 40° 12' 807" N, 35° 55' 689" E, 16.VII.2004, 1 ♂ (leg. A. Mol); Kastamonu, Tosya-İskilip road, Türbe Pass area, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 17.VIII.2011, 3 ♂♂, 1 ♀ (legs. D. Sirin, A. Mol and G. Akyıldız); Çankırı, Ilgaz Mountain, National Park, near TRT transmitter station, 2045 m, 41° 03' 246" N, 33° 43' 053" E, 18.VIII.2011, 7 ♂♂, 5 ♀♀ (legs. D. Sirin and G. Akyıldız).

***Anterastes turcicus* Karabağ, 1951**

Material examined: Antalya, Kemer, Tahtalı Mountains, Gürleyik province, 1479 m, 36° 33' 067" N, 30° 25' 001" E, 02.VIII.2010, 5 ♂♂, 4 ♀♀ (legs. D. Sirin and U. Sirin).

***Apholidoptera pietschmanni* (Ebner, 1912)**

Material examined: Erzincan: Kemaliye, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 3.VII.2012, 1 ♂, 2 ♀♀ (legs. D. Sirin and A. Mol).

***Bolua turkiyae* Ünal, 1999**

Material examined: Kastamonu, Kastamonu-Seydiler road, Oyrak Pass, 1210 m, 41° 32' 930" N, 33° 46' 806" E, 21.VIII.2004, 1 ♀; Tosya Ilgazı Pass, 1650 m, 41° 07' 665" N, 34° 04' 290" E, 20.VIII.2004, 1 ♀ (leg. A. Mol).

***Bucephaloptera robusta* Karabağ, 1956**

Material examined: Samsun, Ondokuz Mayıs University, Kurupelit Campus, 200 m, 16.VII.2003, 1 ♂; 28.VIII.2003, 1 ♀ (leg. A. Mol).

***Bucephaloptera bucephala* (Brunner von Wattenwyl, 1882)**

Material examined: Sakarya, Geyve-Taraklı road, exit of Soğuksu, 650-700 m, 40° 26' 855" N, 30° 22' 165" E, 23.VII.2004, 1 ♀ (leg. A. Mol); Edirne, 6<sup>th</sup> km of Keşan-İpsala road, 77 m, 40° 52' 546" N, 26° 32' 320" E, 11.IX.2012, 1 ♂, 1 ♀ (leg. D. Sirin); Tekirdağ, Merkez, Hürriyet mahallesi, 135 m, 40° 45' 103" N, 27° 16' 183" E, 19.VIII.2014, 2 ♂♂ (leg. E. Demir).

***Decticus verrucivorus* (Linne, 1758)**

Material examined: Ardahan, Ardahan-Hanak road, 10.km, 1950 m, 11.VIII.2004, 1 ♂, 1 ♀; Çankırı, Ilgaz, İndağı Pass, 1425 m, 41° 02' 384" N, 33° 44' 568" E, 21.VII.2004, 1 ♀; Artvin, landing of Şavşat-Yukarı Kocabay Plateau, 1900 m, 41° 11' 545" N, 42° 33' 757" E, 28.VII.2005, 1 ♂, 1 ♀; Erzurum, İspir, Göluyurt Pass, 2380 m, 40° 20' 904" N, 40° 47' 456" E, 30.VII.2005, 1 ♂ (leg. A. Mol); Tekirdağ,

*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

Kumbağ, Uçmakdere stream 2nd km, Northeast side, 357 m, 40° 49' 187" N, 27° 23' 599" E, 25.V.2011, 1 ♂ (legs. D. Sirin, N. Yilmazer and L. Can); Namık Kemal University Campus, 85 m, 41° 00' 045" N, 27° 35' 029" E, 04.VI.2012, 1 ♂, 1 ♀ (leg. D. Sirin); Ankara, 6<sup>th</sup> km of Çubuk-Şabanözü road, Mutlu Village road, 1090 m, 40° 14' 760" N, 33° 05' 199" E, 10.VII.2011, 1 ♂ (leg. D. Sirin); Edirne, Keşan-Çanakkale road, 3<sup>rd</sup> km of Yerli Su-Koru Mountain, 260 m, 40° 42' 857" N, 26° 45' 186" E, 18.VI.2012, 1 ♂ (nymph); Çanakkale, Gelibolu province, between Süleymaniye and Şadıllı regions, 2<sup>nd</sup> km, Korudağı Mountain, 149 m, 40° 42' 486" N, 26° 51' 470" E, 18.VI.2012, 1 ♂ Gelibolu, Çokol-Korudağı Mountain, 3.km, 240 m, 40° 43' 236" N, 26° 59' 726" E, 18.VI.2012, 1 ♂, 1 ♀, (legs. D. Sirin, N. S. Odabasi and L. Can); Şanlıurfa, near Göbeklitepe province, 661 m, 37° 12' 701" N, 38° 55' 443" E, 01.VII.2012, (leg. D. Sirin); Gaziantep, Araban province, near Yukarı Mülk, 629 m, 37° 26' 286" N, 37° 30' 884" E, 4.VII.2012, 2 ♂♂, 1 ♀ (legs. D. Sirin and A. Mol); Tekirdağ, Ganos mountain, (Radar-Hoşköy), 705m 40° 45' 778" N, 27° 16' 108" E, 23.VI.2014, 1 ♂ (legs. D. Şirin and E. Demir); Tekirdağ, Köseilyas, Husunlu village, 706 m, 40° 45' 778" N, 27° 16' 102" E 23.VI.2014, 1 ♂ (legs. E. Demir and M. Subaş).

***Decticus albifrons (Fabricius, 1775)***

Material examined: Karabük, Safranbolu-Bartın road, 3.km, 450 m, 25.VII.2004, 1 ♂ (leg. A. Mol); Şanlıurfa, Göbekli Tepe province, 661 m, 37° 12' 701" N, 38° 55' 443" E, 01.VII.2012, 2 ♂♂, 1 ♀; Bozova, Gülbiten Mezrası, 649 m, 37° 23' 163" N, 38° 31' 779" E, 01.VII.2012, 2 ♂♂; İstanbul, Arnavutköy, between İhsaniye-Tayakadın, 127 m, 41° 15' 789" N, 28° 44' 950" E, 15.VIII.2012, 2 ♂♂, 1 ♀; Edirne, Keşan, between Keşan-İpsala road, 6<sup>th</sup> km, 77 m, 40° 52' 546" N, 26° 32' 320" E, 11.IX.2012, 3 ♂♂; Enez province, 8<sup>th</sup> km of Enez-Keşan road, 32 m, 40° 38' 687" N, 26° 16' 244" E, 11.IX.2012, 1 ♂ (leg. D. Sirin); Tekirdağ, Çerkezköy, 105 m to Veliköy, 41° 15' 455"N, 27° 55' 697"E, 01.VII.2014, 1 ♂ (legs. E. Demir and M.Subaş).

***Eupholidoptera unimacula Karabağ, 1956***

Material examined: Samsun, Ondokuz Mayıs University, Kurupelit Campus, 350 m, 02.VI.2003, 1 ♀ (leg. A. Mol).

***Eupholidoptera tahtalica (Uvarov, 1949)***

Material examined: Antalya, Kemer, Tahtalı Mountains, Gürleyik province, 1479 m, 36° 33' 067" N, 030° 25' 001" E, 02.VIII.2010, 2 ♂♂, 2 ♀♀ (legs. D. Sirin and U. Sirin).

***Eupholidoptera mersinensis Salman, 1983***

Material examined: Isparta, Eğirdir, Devrek Mountain, Bağören district, 939 m, 37° 52'41" N, 30° 50' 34" E, 09.VII.2014, 1 ♀ (legs. A. Mol and E. Demir); Antalya, Kemer, Olimpos, 4.km., 293 m., 36°24'09" N, 30°25'54" E, 11.VII.2014. 1 ♂ (leg. A. Mol).

***Eupholidoptera karabaği Salman, 1983***

Material examined: Burdur, Burdur-Isparta road, 15.km, 941 m, 37° 50' 90" N, 30° 24' 45" E, 09.VII.2014, 1 ♂ (leg. A. Mol).

***Gampsocleis recticauda Werner, 1901***

Material examined: Antalya,: Elmalı, near Ovacık village, 1996 m, 36° 44' 206" N, 30° 10' 005" E, 27.VII.2013, 1 ♂ (leg. D. Sirin and M. Kılınç).

***Medecticus assimilis* (Fieber, 1853)**

Material examined: Gaziantep, Araban province, around Yukarı Mülk, 629 m, 37° 26' 286" N, 37° 30' 884" E, 04.VII.2012, 3 ♂♂, 2 ♀♀ (legs. A. Mol and D. Sirin).

***Montana uvarovi* Karabağ, 1950**

Material examined: Artvin, Şavşat, Yukarı Kocabey Plateau, 2460 m, 41° 12' 290" N, 42° 29' 748" E, 27.VII.2005, 1 ♂, 2 ♀♀, 11.VIII.2006, 6 ♂♂, 2 ♀♀ (leg. A. Mol).

***Parapholidoptera castaneoviridis* (Brunner von Wattenwyl, 1882)**

Material examined: Tokat, Zile, Yıldıztepe, Karaağaç province, 900 m, 40° 09' 680" N, 35° 54' 309" E, 16.VII.2004, 1 ♀; Çorum, İskilip province, Elmalıbeli Pass, 1150 m, 20.VIII.2004, 2 ♀♀; Karabük, exit of Safranbolu, 950 m, 41° 19' 327" N, 32° 42' 006" E, 25.VII.2004, 1 ♀ (leg. A. Mol).

***Parapholidoptera distincta* (Uvarov, 1921)**

Material examined: Artvin, Şavşat, Aşağı Kocabey Yaylası, 1600-1700 m, 41° 13' 606" N, 42° 26' 373" E, 28.VII.2005, 1 ♂ (leg. A. Mol).

***Parapholidoptera karabagi* Demirsoy, 1974**

Material examined: Bayburt, Vaukdağı Pass, 1955 m, 40° 22' 199" N, 39° 50' 466" E, 08.VIII.2004, 3 ♂♂, 1 ♀, 25.VII.2005, 2 ♂♂ (leg. A. Mol).

***Parapholidoptera kosswigi* (Karabağ, 1950)**

Material examined: Erzurum, İspir province, Gölyurt Pass, 2380 m, 40° 20' 904" N, 40° 47' 456" E, 18.VIII.2006, 1 ♂ (leg. A. Mol).

***Parapholidoptera salmani* Çıplak, 2000**

Material examined: Tokat, Çamlıbel Pass, 1670 m, 39° 57' 317" N, 36° 31' 565" E, 01.VIII.2005, 1 ♀ (leg. A. Mol).

***Parapholidoptera signata* (Brunner von Wattenwyl, 1861)**

Material examined: Çankırı, Ilgazdağı Mountain, Doruk Hotel area, 1920 m, 40° 04' 046" N, 33° 44' 541" E, 21.VIII.2004, 1 ♂, 1 ♀ (leg. A. Mol); Erzincan, Kemaliye, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 3.VII.2012, 1 ♂, 1 ♀ (legs. D. Sirin and A. Mol).

***Parapholidoptera spinulosa* Karabağ, 1956**

Material examined: Ordu, Ünye province, Tekkiraz region, 930 m, 29.VI.2003, 5 ♂♂, 1 ♀; Bayburt, Vaukdağı Mountain Pass, 1955 m, 40° 22' 199" N, 39° 50' 466" E, 08.VIII.2004, 1 ♂, 1 ♀; Samsun, Ondokuz Mayıs University, Kurupelit Campus, 200 m, 09.VII.2003, 1 ♂; 16.VII.2003, 2 ♂♂, 4 ♀♀; Samsun-Çorum road, 25.km, 350 m, 41° 13' 845" N, 36° 08' 844" N, 05.VII.2004, 1 ♂, 1 ♀; Ladik, Derinöz Village, 870 m, 40° 55' 667" N, 35° 45' 989" E, 06.VII.2004, 3 ♂♂, 1 ♀; Amasya, Suluova, Northwest side of Akdağ Mountain, 1500-1600 m, 08.VII.2010, 1 ♀; Çorum, Köseadağ, top point, 1700 m, 40° 40' 825" N, 34° 48' 120" E, 13.VII.2011, 1 ♂; İskilip, Elmalı Pass, 1150 m, 20.VIII.2004, 1 ♂, 2 ♀♀; Beydili-Çatak Village road, 865 m, 40° 36' 549" N, 34° 54' 075" E, 26.VI.2004, 1 ♂; 13.VII.2011, 1 ♂; Karabük, Safranbolu-Bartın



*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

road, exit of Safranbolu, 10. km, 41° 19' 327" N, 32° 42' 006" E, 16.VII.2005, 950-980 m, 1 ♀; 950 m, 25.VII. 2004, 1 ♀; Giresun, Giresun-Şebinkarahisar road, 50.km, 1250 m, 40° 34' 263" N, 38° 21' 169" E, 15.VIII.2004, 1 ♂, 1 ♀; Kastamonu, Çatalzeytin-Devrekani road, 10.km, 600 m, 17.VII.2005, 1 ♂, 1 ♀; Tosya-İskilip road, 20.km, 1100 m, 13.VII.2005, 1 ♀; Kastamonu-Tosya road, 30.km, 950 m, 20.VIII.2004, 1 ♀; Tosya, Ilgazı Pass, 1650 m, 41° 07' 665" N, 34° 04' 290" E, 18.VIII.2011, 3 ♂♂; Kastamonu-Seydiler road, Oyrak Pass, 1210 m, 41° 32' 930" N, 33° 46' 806" E, 21.VIII.2004, 1 ♀; 17.VII.2005, 1 ♂, 2 ♀♀; Devrekani-Çatalzeytin road, Yaralıgöz Pass, 1450 m, 41° 43' 695" N, 34° 01' 623" E, 17.VII.2005, 1 ♀; 17.VIII.2011, 2 ♂♂, 2 ♀♀; Isırganlık Pass, 1170 m, 41° 51' 703" N, 34° 05' 652" E, 17.VII.2005, 1 ♀; 13<sup>th</sup> km of Kastamonu-Araç road, 885 m, 16.VII.2005, 1 ♀; Merkez province, Aksinir Village, 900 m, 26.VII.2004, 1 ♀ (leg. A. Mol); Kastamonu, Tosya-İskilip road, Türbe Pass area, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 17.VIII.2011, 2 ♂♂; Tosya-Kastamonu road, Tosya Ilgazı Pass, 1645 m, 41° 07' 665" N, 34° 04' 290" E, 17.VIII.2011, 1 ♂; Devrakani-Çatalzeytin road, 6 km to Yaralıgöz Pass, 1308 m, 41° 44' 411" N, 34° 02' 020" E, 18.VIII.2011, 2 ♂♂, 2 ♀♀ (legs. D. Sirin, A. Mol and G. Akyıldız).

***Parapholidoptera ziganensis* Karabağ, 1964**

Material examined: Rize, İkizdere-İspir road, 25.km, 2000 m, 40° 34' 242" N, 40° 52' 604" E, 13.VIII.2004, 1 ♂, 1 ♀; İkizdere-İspir road, 75.km, 2100 m, 40° 29' 059" N, 40° 55' 493" E, 25.VII.2005, 1 ♀; Trabzon, Zigana Mountain, Gümüş ski center, 2150 m, 40° 38' 697" N, 39° 24' 164" E, 14.VIII.2004, 1 ♂, 1 ♀; 19.VIII.2006, 1 ♂ (leg. A. Mol).

***Pezodrymadusa affinis* (Bolivar, 1899)**

Material examined: Erzincan, Kemaliye province, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 03.VII.2012, 2 ♂♂, 1 ♀ (nymph) (legs. D. Sirin and A. Mol).

***Pezodrymadusa konowi* (Bolivar, 1899)**

Material examined: Elazığ, exit of Keban 15<sup>th</sup> km, 1376 m, 38° 42' 790" N, 38° 57' 428" E, 3.VII.2012, 2 ♂♂ (legs. D. Sirin and A. Mol).

***Pezodrymadusa kurmana* (Ramme, 1939)**

Material examined: Malatya, Yeşilyurt province, Gündüzbey-Adıyaman road, Bürücek Plateau, 1862 m, 38° 11' 425" N, 38° 19' 102" E, 02.VI.2010, 3 ♂♂, 4 ♀♀ (leg. D. Sirin); Doğanşehir, Çıtlık, upper side of Gürobası Village, 1791 m, 38° 05' 138" N, 37° 58' 576" E, 04.VII.2012, 1 ♂ (legs. D. Şirin and A. Mol).

***Pezodrymadusa lata* Karabağ, 1961**

Material examined: Malatya, Doğanşehir province, Çıtlık region, upper side of Gürobası Village, 1791 m, 38° 05' 138" N, 37° 58' 576" E, 04.VII.2012, 1 ♀ (legs. D. Şirin and A. Mol).

***Pezodrymadusa subinermis* Karabağ, 1961**

Material examined: Elazığ, Sivrice province, Hazarbara ski center area, 1790 m, 38° 25' 029" N, 39° 18' 766" E, 03.VII.2012, 2 ♂♂, 1 ♀ (legs. D. Şirin and A. Mol).

***Pholidoptera aptera* (Fabricius, 1793)**

Material examined: Amasya, Suluova province, Akdağ, Northwest side, 1500-1600 m, 8.VII.2010, 1 ♂ (nymph) (leg. A. Mol).

***Pholidoptera fallax* (Fischer, 1853)**

Material studied: Çankırı, Orta, Dodurga, Tutmaç Bayındır Village, 5<sup>th</sup> km, Uluğağaç Plateau 1589 m, 40° 31' 141" N, 32° 58' 734" E, 19.VIII.2011, 2 ♂♂ (legs. D. Sirin and G. Akyıldız).

***Pholidoptera brevipēs* (Ramme, 1939)**

Material examined: Tekirdağ, Ganos Mountain, (Radar–Hoşköy) 705 m, 40° 45' 778" N, 27° 16' 108" E, 23.VI.2014, 2 ♂♂ (legs. D. Şirin and E. Demir).

***Pholidoptera griseoptera* (De Geer, 1773)**

Material examined: Amasya, entrance of Ormanözü Village, 1035 m, 40° 44' 998" N, 35° 49' 395" E, 14.VII.2004, 1 ♂ (leg. A. Mol).

***Pholidoptera guichardi* Karabağ, 1961**

Material examined: Samsun, Ondokuz Mayıs University, Kurupelit Campus, 350 m, 04.VI.2003, 1 ♂ (leg. A. Mol).

***Platycleis affinis* Fieber, 1853**

Material examined: Çorum, Osmancık, Karağağaç province, 550 m, 20.VII.2004, 1 ♂, 1 ♀ (leg. A. Mol).

***Platycleis albopunctata* (Goeze, 1778)**

Material examined: Çorum, Mecitözü, Emirbağ Village, 650 m, 40° 24' 658" N, 35° 16' 864" E, 13.VII.2004, 1 ♂; Sakarya, Geyve-Taraklı road, Kazkıran Pass, 800 m, 40° 26' 860" N, 30° 27' 404" E, 23.VII.2004, 2 ♂♂; Amasya, entrance of Ormanözü Village, 1140 m, 40° 45' 512" N, 35° 50' 771" E, 17.VII.2004, 1 ♂ (leg. A. Mol); Edirne, Enez province, 8<sup>th</sup> km of Enez-Keşan road, 32 m, 40° 38' 687" N, 26° 16' 244" E, 11.IX.2012, 2 ♀♀ (leg. D. Sirin); Tekirdağ, Hayrabolu, Bıyıklı Göleti, 136 m, 40° 59' 177" N, 27° 33' 980" E, 23.VIII.2014, 1 ♂ (leg. E. Demir).

***Platycleis escalerae escalerae* Bolivar, 1899**

Material examined: Amasya, 10<sup>th</sup> km of Suluova road, 600 m, 17.VII.2003, 1 ♂; Çorum, Mecitözü, Emirbağ Village, 650 m, 40° 24' 658" N, 35° 16' 863" E, 13.VII.2004, 2 ♂♂, 2 ♀♀ (leg. A. Mol); Tekirdağ, Hayrabolu, Bıyıklı Göleti, 136 m, 40° 59' 177" N, 27° 33' 980" E, 23.VIII.2014, 2 ♂♂ (leg. E. Demir).

***Platycleis intermedia intermedia* (Serville, 1838)**

Material examined: Samsun, Ondokuz Mayıs University, Kurupelit Campus, 200 m, 2.VI.2003, 1 ♂; 16.VII.2003, 1 ♂; Amasya, exit of Ormanözü Village, 1140 m, 40° 45' 512" N, 35° 50' 771" E, 17.VII.2003, 1 ♂, 3 ♀♀; Sivas, Çamlıbel, Yıldızeli road, 20<sup>th</sup> km, 1300 m, 39° 55' 474" N, 36° 32' 248" E, 17.VII.2004, 1 ♂; Karabük, Safranbolu-Bartın road, exit of Safranbolu, 10<sup>th</sup> km, 950-980 m, 41° 19' 327" N, 32° 42' 006" E, 16.VII.2005, 1 ♂, 1 ♀; Aksaray, Helvadere, Hasandağı, Kötüğüney Plateau, Bozkurt plain, 1700 m, 38° 09' 997" N, 34° 11' 698" E, 19.VII.2011, 1 ♂; Aydın, Kuşadası, Davutlar, Mermer area, Ortaca peak, 900 m, 27.VI.2011, 1 ♀; Çorum, Köseadağ, top point, 1700 m, 40° 41' 082" N, 34° 49' 187" E, 03.VII.2011, 1 ♂; Kastamonu, Tosya, Türbe Pass, 1600 m, 40° 56' 250" N, 34° 12' 702" E, 17.VIII.2011; 1 ♂, 2 ♀♀; near Türbe Pass, 1100 m, 40° 58' 986" N, 34° 11' 351" E, 17.VIII.2011, 1 ♀ (leg. A. Mol); Adıyaman, 36<sup>th</sup> km of Adıyaman-Bozova road, 680 m, 37° 31' 771" N, 38° 12' 030" E, 01.VI.2010, 2 ♀♀; Şanlıurfa, Göbeklitepe area, 661 m, 37° 12' 701" N, 38° 55' 443" E, 01.VII.2012, 1 ♂, 1 ♀; Bozova province, Gülbiten avenue, 649

*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

m, 37° 23' 163" N, 38° 31' 779" E, 01.VII.2012, 2 ♂♂ (leg. D. Sirin); Erzincan, Kemaliye province, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 3.VII.2012, 2 ♂♂ (legs. D. Şirin and A. Mol); Tekirdağ, Hayrabolu, Bıyıklı Göleti, 136 m, 40° 59' 177" N, 27° 33' 980" E, 23.VIII.2014, 1 ♂; Tekirdağ: Çerkezköy, Veliköy girişi 105 m, 41° 15' 455" N, 27° 55' 697" E, 01.VII.2014, 1 ♂ (leg. E. Demir).

***Psorodonotus caucasicus caucasicus* (Fischer von Waldheim, 1846)**

Material examined: Bayburt, Bayburt-Aşkale road, Kopdağı Mountain Pass, 2460 m, 40° 02' 260" N, 40° 30' 738" E, 25.8.2005, 1 ♀ (leg. A. Mol).

***Psorodonotus davisii* Karabağ, 1956**

Material examined: Rize, Ovit Dağı, 1600 m, 40° 38' 626" N, 40° 44' 234" E, 30.VII.2005, 2 ♂♂ (leg. A. Mol).

***Psorodonotus ebneri* Karabağ, 1952**

Material examined: Antalya, Saklıkent, between Bakırlıdağ-Pozan, 1765 m, 36° 49' 615" N, 30° 17' 215" E, 30.7.2010, 2 ♂♂ (leg. D. Sirin).

***Psorodonotus rugulosus* Karabağ, 1952**

Material examined: Trabzon, Zigana Mountain, Gümüş sky center, 2150 m, 40° 38' 697" N, 39° 24' 164" E, 14.8.2004, 2 ♂♂ (leg. A. Mol).

***Psorodonotus suphani* Taylan and Şirin, 2014**

Material examined: Bitlis, Adilcevaz, Sütey Plateau, 2300 m, 38° 51' 718" N, 42° 43' 753" E, 28.6.2013, 3 ♂♂, 4♀♀ (legs. M.S. Taylan, D. Sirin, A. Mol and F. Boz).

***Psorodonotus venosus* (Fischer von Waldheim, 1839)**

Material examined: Artvin, Şavşat, Yukarı Kocabey Plateau, 2460 m, 41° 12' 290" N, 42° 29' 748" E, 27.7.2005, 5 ♂♂, 3 ♀♀ (leg. A. Mol).

***Rhacocleis tuberculata* Karabağ, 1978**

Material examined: Antalya, Kemer, Tahtalı Mountains, Gürleyik province, 1479 m, 36° 33' 067" N, 30° 25' 001" E, 02.8.2010, 1 ♂, 1 ♀ (legs. D. Sirin and U. Sirin); Çorum, Karşıyaka province, 900 m, 40° 32' 937" N, 34° 59' 137" E, 07.8.2010, 1 ♀ (leg. A. Mol).

***Scotodrymadusa ozkani* Erman and Salman, 1990**

Material examined: Rize, İkizdere-İspir road, 25.km, 2000-2100 m, 40° 34' 242" N, 40° 52' 606" E, 13.8.2004, 1 ♂, 1 ♀ (leg. A. Mol).

***Scotodrymadusa syrica* (Pictet, 1888)**

Material examined: Artvin, Aşağı Kocabey Plateau, 1600-1700 m, 41° 13' 606" N, 42° 26' 373" E, 27.7.2005, 1 ♂, 1 ♀ (leg. A. Mol).

***Sepiana sepium* (Yersin, 1854)**

Material examined: İstanbul, Arnavutköy, between İhsaniye-Tayakadın, 127 m, 41° 15' 789" N, 28° 44' 950" E, 15.8.2012, 1 ♀; Edirne, 6<sup>th</sup> km of Keşan-İpsala road, 77 m, 40° 52' 546" N, 26° 32' 320" E, 11.9.2012, 2 ♂♂; 8<sup>th</sup> km of Enez-Keşan road, 32 m, 40° 38' 687" N, 26° 16' 244" E, 11.9.2012, 2 ♂♂, 2 ♀♀; Tekirdağ, between Ormanlı-Hoşköy province, around radar, 899 m, 40° 47' 238" N, 27° 18' 301" E, 25.9.2012, 1 ♂ (leg. D. Sirin); Tekirdağ, Çerkezköy, entrance of Veliköy, 105 m, 41° 15' 455" N, 27° 55' 697" E, 01.7.2014, 1 ♂ (legs. E. Demir and M. Subaş).

***Sporadiana sporadarum* (Werner, 1933)**

Material examined: Çankırı, Ilgaz-Çankırı road, 925 m, 21.7.2004, 1 ♀; Çorum, Mecitözü, Emirbağ Village, 650 m, 40° 24' 658" N, 35° 16' 863" E, 27.6.2004, 2 ♀♀; Kastamonu, Tosya-İskilip road, Türbe Pass, 1625 m, 40° 56' 250" N, 34° 12' 702" E, 20. 8.2004, 2 ♀♀; 20<sup>th</sup> km of Tosya-İskilip road, 1104 m, 40° 58' 986" N, 34° 11' 351" E, 13.7.2005, 1 ♀ (leg. A. Mol).

***Squamiana salmani* (Çıplak, 2002)**

Material examined: Malatya, Doğanşehir province, Çıtlık region, upper side of Gürobası Village, 1791 m, 38° 05' 138" N, 37° 58' 576" E, 04.7.2012, 1 ♂ (legs. D. Sirin and A. Mol).

***Squamiana sinuata* (Ramme, 1951)**

Material examined: Tekirdağ, Namık Kemal University, Değirmenaltı Campus, 50 m, 41° 00' 045" N, 27° 35' 029" E, 14.6.2011, 1 ♂ (leg. E. Demir); Erzincan, Kemaliye, Ocak Village, 1485 m, 39° 08' 732" N, 38° 35' 296" E, 03.7.2012, 3 ♂♂, 1 ♀ (legs. D. Sirin and A. Mol).

***Sureyaella bella* Uvarov, 1934**

Material examined: Konya, Bozkır province, between Bozkır-Üçpınar, 1430 m, 37° 09' 918" N, 32° 13' 987" E, 31.VII.2012, 3 ♂♂, 1 ♀ (legs. D. Sirin and U. Sirin).

***Tessellana tessellata* (Charpentier, 1825)**

Material examined: Şanlıurfa, Bozova province, Hisarlı Village, 799 m, 37° 16' 493" N, 38° 38' 626" E, 01.7.2012, 1 ♂, 2 ♀♀ (leg. D. Sirin).

***Tessellana veyseli* (Koçak, 1984)**

Material examined: İzmir, Ödemiş province, Bozdağ Mountain, Günalan Plateau, 1509 m, 38° 21' 145" N, 28° 06' 687" E, 19.8.2003, 1 ♂ (leg. A. Mol).

***Tettigonia caudata* (Charpentier, 1845)**

Material examined: Yozgat, Yozgat-Sorgun road, 10<sup>th</sup> km, 1160 m, 39° 49' 463" N, 35° 03' 871" E, 11.8.2005, 1 ♂ (leg. A. Mol).

***Tettigonia viridissima* (Linne, 1758)**

Material examined: Artvin, Yusufeli, Yaylacık Village, 2100 m, 10.8.2004, 1 ♂, 1 ♀; Şavşat, Aşağı Kocabay Plateau, 1600-1700 m, 41° 13' 606" N, 42° 26' 373" E, 27.7.2005, 1 ♂; Gümüşhane, Kelkit, Pöskedağ Mountain, 2100-2250 m, 39° 53' 550" N, 39° 22' 007" E, 24.8.2005, 1 ♂ (leg. A. Mol); Elazığ,

exit of Keban 15<sup>th</sup> km, 1376 m, 38° 42' 790" N, 38° 57' 428" E, 03.VII.2012, 3 ♂♂, 2 ♀♀ (nymph) (legs. D. Şirin and A. Mol).

## CONCLUSION

The present paper encapsulates the outcome of our research on the Ensifera suborder in Turkey, which comprises 117 taxa belonging to 43 genera, eight subfamilies, and three families. When we consider the geographical distribution of Ensiferan subfamilies collected during 2002-2014, it is clear that Tettigoninae, Phaneropterinae and Saginae subfamilies members are mostly often collected in all geographical regions of Turkey. In contrast, Oecanthinae and Gryllotalpinae subfamilies members have been found only in the Blacksea region of Turkey (Table 1). These results are within the bounds of possibility when the taxa numbers of each subfamily and their habitat preferences are considered. The *Oecanthus pellucens* (Oecanthinae) and *Gryllotalpa gryllotalpa* (Gryllotalpinae) need special attention when collected in the field. *Oecanthus pellucens* is mostly active after sunset and hides below the leaves, whereas *Gryllotalpa gryllotalpa* prefers generally the subterranean areas. Therefore, it is difficult to collect both species during one field trip which is not aimed to collect directly these species. The most collected three subfamilies (Tettigoninae, Phaneropterinae, Saginae) are the members of the richest family which is Tettigoniidae of the Ensifera suborder in Turkey. These subfamilies are mostly distributed in different types of bushes and high grass vegetations. This is an important reason for the species of these subfamilies to be collected easily and firsthand as compared to others.

The three of 117 examined taxa show a distribution in Middle East and Turkey; 10 of them in Balkans and Turkey; 11 of them in Caucasia and Turkey; and 67 of them (Table 2) show distribution only in Turkey (Karabağ, 1958; Çıplak *et al.*, 2002a; Eades *et al.*, 2015). Nearly more than half of the collected species are endemic to Anatolia, which is very revelatory for the high endemism rate in Anatolia. Thus the reevaluation of the distribution borders of these endemics with new data is necessary.

In previous studies some 12 taxa are reported as harmful to agricultural crops (Table 2) (Lodos, 1983; Kaya and Kovanci, 2000). Among the harmful taxa, *Gryllus campestris*, *Melanogryllus desertus*, *Oecanthus pellucens*, *Gryllotalpa gryllotalpa*, *Tylopsis lilifolia*, *Decticus verrucivorus* and *Platypleis intermedia intermedia* show a widespread distribution. The other harmful taxa, namely *Conocephalus (Conocephalus) hastatus*, *Isophya speciosa* and *Poecilimon (Poecilimon) sanctipauli*, are endemic to Balkans and Turkey, while *Isophya nervosa* and *Poecilimon (Poecilimon) bosphoricus* are endemic to Turkey only. These 12 taxa should be checked for their distribution and population density periodically by entomologists.

## ACKNOWLEDGMENTS

Our special thanks go to Dr. Nadim YILMAZER (Namık Kemal University) for their valuable comments on the early version of the manuscript. This study was conducted by using Scientific and Technological Application and Research Center, (ASUBTAM)

Aksaray University, (Aksaray/Turkey) and Namık Kemal University Entomology Museum, NKUEM (Tekirdağ/Turkey). This study was partly supported by Tekirdağ Namık Kemal University, (Project number: NKUBAP.00.10.YL.14.02).

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*Contribution to the Knowledge of Ensifera (Insecta: Orthoptera) Fauna of Turkey*

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