

NEW AND INTERESTING GRASSHOPPER AND CRICKET (ORTHOPTERA) RECORDS FROM THE FAUNA OF PENEDA-GERÊS NATIONAL PARK (NORTH-WESTERN PORTUGAL)

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Abstract: Data on 18 species of Orthoptera is presented, increasing the knowledge on the diversity and distribution of the Orthoptera of Peneda-Gerês National Park. Nine species are recorded for the first time from the Park. *Metrioptera ambigua* Pfau, 1986 is new to Portugal and *Leptophyes punctatissima* (Bosc, 1792) is recorded for the second time from the country.

Keywords: Orthoptera, *Metrioptera ambigua* Pfau, 1986, faunistics, new records, Peneda-Gerês National Park, north-western Portugal.

Nuevos e interesantes registros de ortópteros (Orthoptera) del Parque Nacional de Peneda-Gerês (noroeste de Portugal).

Resumen: Se presentan registros de 18 especies de Orthoptera, ampliando los conocimientos sobre la composición y distribución de la fauna del Parque Nacional da Peneda Gerês. Nueve de las especies son novedades para la fauna del Parque. *Metrioptera ambigua* Pfau, 1986 es nueva para Portugal y *Leptophyes punctatissima* (Bosc, 1792) se registra por segunda vez del país.

Palabras clave: Orthoptera, *Metrioptera ambigua* Pfau, 1986, faunística, nuevos registros, Parque Nacional de Peneda-Gerês, noroeste de Portugal.

Introduction

The Peneda-Gerês National Park (PNPG) was created in 1971 and is the oldest Protected Area in Portugal and the only one with National Park status. Located in the North-west of Portugal (Fig. 1) the Park includes Amarela, Gerês, Peneda and Soajo mountain ridges and the Castro Laboreiro and Mourela plateaus. Because of various factors, namely its location in the Eurosiberian region, PNPG is sited in the area of the country with the highest level of precipitation, with an annual total of over 3500 mm in Gerês mountain ridge. Consequently the Park has an intricate network of rivers, streams and rivulets, and high levels of moisture that have significant implications on its flora and fauna.

During 2002 and 2003, the invertebrate fauna of PNPG was the subject of two complementary studies that focused on several Mollusc and Arthropod groups. The most interesting records that resulted from the study of the Coleoptera were presented in Soares-Vieira & Grosso-Silva (2003), which also included a brief characterisation of the Park and an historical overview of the study of the Park's beetle fauna. More recently, the data related to the orthopteran family Tetrigidae was included in a specific paper dealing with the Portuguese fauna of the group (Ferreira *et al.*, 2006). The present contribution contains the majority of the data that resulted from the study of the Orthoptera of PNPG, increasing and clarifying some of the already available information.

Methods

The data presented in this contribution results largely from literature survey and fieldwork. The former was conducted

Fig. 1. Map of continental Portugal with the location of the Peneda-Gerês National Park.



with the purpose of compiling the available information on the Orthoptera fauna of PNPG. Fieldwork, which was mainly based on direct search, was not specifically designed for Orthoptera, but aimed primarily to characterize local insect and molluscs' faunas, in particular to confirm some of the available data due to its antiquity and geographic or taxonomic imprecision.

The identification of the specimens was based on Harz (1969, 1975), Pfau (1986), Ragge (1990), Garcia *et al.* (1996) and Lluçia Pomares (2002).

List format

The specimens listed below include vouchers mainly collected by the authors, which unless otherwise stated are deposited in Grosso-Silva's collection and also field observations (specimens captured for identification and released afterwards, which are indicated by the abbreviation "obs."). The "MATERIAL EXAMINED" section includes the collecting data for each record: locality data (municipality, site name, UTM coordinate), date and number of specimens. The "UTM (10x10 Km)" section synthesises the 10 Km grid squares where the species were found and the "REFERENCES" section presents, for each species, the references that contain data from PNPG. The localities recorded in those references are listed alphabetically in the "BIBLIOGRAPHIC LOCALITIES" section.

Results

Suborder Caelifera Family Acrididae

Arcyptera (Arcyptera) tornosi Bolívar, 1884

MATERIAL EXAMINED: **Montalegre:** Carris reservoir (29TNG 7929), 09-07-2003 (1 ♂). **Terras de Bouro:** Calcedónia (29TNG 6719), 06-08-2002 (1 ♀).

UTM (10x10 Km): 29TNG61, 29TNG72.

REFERENCES: Cazurto (1888), Bolívar (1898), Aires & Menano (1915), Seabra (1939a, 1939b), Garcia *et al.* (1996).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

COMMENTS: According to Garcia *et al.* (1996), this species shows some variability related to its wide distribution in the Iberian Peninsula, this being a source of taxonomic difficulties which occasionally leads to misidentifications. The records of *A. fusca* (Pallas, 1773) by Aires & Menano (1915) are probably among those misidentifications, since the recorded species does not occur in the Iberian Peninsula apart from its North-eastern area and *A. tornosi* is the only species in the genus known to occur in Portugal (Garcia *et al.*, 1996).

Calliptamus barbarus (Costa, 1836)

MATERIAL EXAMINED: **Melgaço:** Near Dorna (29TNG6949), 24-07-2002 (1 ♀). **Montalegre:** Encruzilhada (29TNG8220), 21-08-2002 (3 ♀♀); Fonte de Bouzende (29TNG9130) 20-08-2002 (1 ♂); Near Chelo (29TNG8119), 21-08-2002 (1 ♀); Pitões das Júnias monastery (29TNG8731), 22-08-2002 (2 ♀♀). **Ponte da Barca:** Froufe (29TNG5830), 20-07-2003 (1 ♂); Near Germil (29TNG6025), 21-07-2003 (1 ♂). **Terras de Bouro:** Calcedónia (29TNG6719), 06-08-2002 (1 ♀); Cascata do Arado (29TNG 7219), 07-08-2002 (1 ♂ and 1 ♀); Fonte da Quelha da Buraca (29TNG6819), 06-08-2002 (1 ♀); Pontelha (29TNG6517), 07-08-2002 (2 ♀♀).

UTM (10x10 Km): 29TNG53, 29TNG61, 29TNG61, 29TNG62, 29TNG64, 29TNG71, 29TNG81, 29TNG82, 29TNG83, 29TNG93.

REFERENCES: Nobre (1900), Aires & Menano (1915), Vargas (1930), Seabra (1939a, 1939b), Fernandes (1965).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês and Serra do Soajo.

COMMENTS: Until JAGO's revision of the genus *Calliptamus* Serville, 1831. in 1963, the records related to *C. barbarus* in Portugal where presented under the name *C. italicus* (Linnaeus, 1758). Based on the material he examined, Jago (1963) concluded that *C. italicus* was absent from the Iberian Peninsula, however this is nowadays known to be false, as the species was collected in the Iberian Peninsula afterwards (Ragge, 1965; Presa, 1976; Miranda-Arabolaza & Barranco, 2005). After Jago's revision the majority of the Portuguese collections (including most of the

specimens previously recorded from PNPG), were studied by Fernandes (1965) who confirmed that the specimens identified as *C. italicus* in fact belonged to *C. barbarus*. Accordingly, in this paper we consider all bibliographic records to pertain to *C. barbarus*.

Oedipoda caerulescens (Linnaeus, 1758)

MATERIAL EXAMINED: **Melgaço:** Near Dorna (29TNG6949), 24-07-2002 (1 ♀). **Montalegre:** Encruzilhada (29TNG8220), 20-08-2002 (1 ♂); Fonte de Bouzende (29TNG9130), 20-08-2002 (1 ♂ and 1 ♀); Paradela reservoir (29TNG8725), 20-08-2002 (1 ♂ and 4 ♀♀); Near Chelo (29TNG8119), 20-08-2002 (1 ♂); Near Pitões das Júnias (29TNG8832), 20-08-2002 (1 ♀); Near Pitões das Júnias monastery (29TNG8731), 22-08-2002 (3 ♂♂ and 1 ♀); Near Travassos (29TNG9228), 19-08-2002 (1 ♂ and 3 ♀♀).

Ponte da Barca: Above Fornalhas (29TNG5933), 20-07-2003 (1 ♀); Near Cidadelhe (29TNG6334), 16-04-2003 (1 ♂ and 1 ♀).

Terras de Bouro: Calcedónia (29TNG6719), 06-08-2002 (1 ♂); Fonte da Quelha da Buraca (29TNG6819), 06-08-2002 (1 ♀); Gerês (29TNG6920), 08-08-2002 (1 ♂); Mata de Albergaria (29TNG7127), 08-08-2002 (2 ♂♂ and 2 ♀♀); Pontelha (29TNG6517), 07-08-2002 (1 ♂); Roda stream, near Campo do Gerês (29TNG6723), 07-08-2002 (1 ♂).

UTM (10x10 Km): 29TNG53, 29TNG61, 29TNG62, 29TNG63, 29TNG64, 29TNG72, 29TNG81, 29TNG82, 29TNG83, 29TNG92, 29TNG93.

REFERENCES: Nobre (1900), Aires & Menano (1915), Vargas (1930), Seabra (1939a, 1939b).

BIBLIOGRAPHIC LOCALITIES: Gerês e Serra do Gerês.

Pseudosphingonotus azurescens (Rambur, 1838)

MATERIAL EXAMINED: **Montalegre:** Encruzilhada (29TNG8220), 20-08-2002 (2 ♀♀).

UTM (10x10 Km): 29TNG82.

REFERENCES: Aires & Menano (1915).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

Sphingonotus caerulans (Linnaeus, 1767)

MATERIAL EXAMINED: **Montalegre:** Paradela reservoir (29TNG8725), 20-08-2002 (1 ♂ and 2 ♀♀).

UTM (10x10 Km): 29TNG82.

COMMENTS: First record for the Park.

Suborder Ensifera

Family Gryllidae

Gryllus campestris Linnaeus, 1758

MATERIAL EXAMINED: **Montalegre:** Near Covelães (29TNG9129), 28-05-2002 (1 ♀, J. Vaqueiro *leg.*); Raposeira (29TNG9238), 29-05-2002 (1 ♂).

UTM (10x10 Km): 29TNG92, 29TNG93.

COMMENTS: First record for the Park.

Nemobius sylvestris (Bosc, 1792)

MATERIAL EXAMINED: **Arcos de Valdevez:** Lage de Chãos (29TNG5738), 22-07-2003 (1 obs.); Mezio camping park (29TNG5737), 22-07-2003 (1 obs.); Passarinha (29TNG5736), 22-07-2003 (1 obs.); Portela da Ferreira (29TNG5637), 22-07-2003 (1 obs.). **Ponte da Barca:** Felgueira (29TNG5832), 20-07-2003 (1 obs.); Froufe (29TNG5830), 20-07-2003 (1 obs.); Lourido (29TNG5930), 21-07-2003 (1 obs.); Mosteirô (29TNG6133), 20-07-2003 (1 obs.). **Terras de Bouro:** Fonte de Albergaria (29TNG7227), 10-07-2003 (1 ♀); Gerês (29TNG6920), 16-06-2002 (1 obs.), 06-08-2002 (1 obs.); Mata de Albergaria (29TNG7127), 01-10-2002 (1 ♀); Near Fonte da Abilheira (29TNG7328), 30-05-2002 (1 obs.); Ponte da Maceira (29TNG 7125), 14-06-2002 (1 obs.); Portela do Homem (29TNG7229), 18-06-2002 (1 obs.).

UTM (10x10 Km): 29TNG53, 29TNG62, 29TNG63, 29TNG72.
COMMENTS: First record for the Park.

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

MATERIAL EXAMINED: **Arcos de Valdevez:** Adrão (29TNG6340), 23-07-2003 (1 obs.); Near Rouças (29TNG6344), 23-07-2003 (1 obs.); Porto do Prado (29TNG5242), 22-07-2003 (1 obs.); Rouças (Pomba stream) (29TNG6244), 23-07-2003 (1 obs.). **Montalegre:** Encruzilhada (29TNG8220), 20-08-2002 (1 obs.); Near Chelo (29TNG8119), 20-08-2002 (5 obs.). **Ponte da Barca:** Above Fornalhas (29TNG5933), 20-07-2003 (1 obs.); Agueira (29TNG 6030), 21-07-2003 (1 obs.); Chã da Moura (29TNG6029), 21-07-2003 (1 obs.); Costa (29TNG6129), 21-07-2003 (1 obs.); Entre-Ambos-os-Rios camping park (29TNG5630), 21-07-2003 (1 obs.); Felgueira (29TNG5832), 20-07-2003 (2 obs.); Froufe (29TNG 5830), 20-07-2003 (1 obs.); Lourido (29TNG5930), 21-07-2003 (1 obs.); Mosteirô (29TNG6133), 20-07-2003 (1 obs.); Near Froufe (29TNG5730), 20-07-2003 (1 ♀). **Melgaço:** Ameijoeira (29TNG 6948), 25-07-2002 (3 obs.); Near Bago de Baixo (29TNG7049), 25-07-2002 (6 obs.). **Terras de Bouro:** Curral de S. Miguel (29TNG7228), 08-08-2002 (1 obs.); Fonte da Soalheira (29TNG 7016), 07-08-2002 (1 obs.); Gerês (29TNG6920), 06-08-2002 (1 obs.); Mata de Albergaria (29TNG7127), 08-08-2002 (5 obs.); Near Fonte do Padre (29TNG6719), 06-08-2002 (1 obs.); Pontelha (29TNG6517), 07-08-2002 (2 obs.).

UTM (10x10 Km): 29TNG53, 29TNG54, 29TNG61, 29TNG62, 29TNG63, 29TNG64, 29TNG71, 29TNG72, 29TNG74, 29TNG 81, 29TNG82.

REFERENCES: Aires & Menano (1915), Seabra (1938).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

Family Bradyporidae

***Steropleurus asturiensis* (Bolívar, 1898)**

MATERIAL EXAMINED: **Montalegre:** Fonte de Bouzende (29TNG 9130), 20-08-2002 (1 ♂); Pitões das Júnias monastery (29TNG 8731), 22-08-2002 (1 ♂).

UTM (10x10 Km): 29TNG83, 29TNG93.

COMMENTS: First record for the Park.

Family Conocephalidae

***Conocephalus fuscus* (Fabricius, 1793)**

MATERIAL EXAMINED: **Montalegre:** Pegia (near Lama Chã stream) (29TNG9329), 19-08-2002 (1 ♂).

UTM (10x10 Km): 29TNG92.

COMMENTS: First record for the Park.

Family Meconematidae

***Meconema thalassinum* (De Geer, 1773)**

MATERIAL EXAMINED: **Terras de Bouro:** Mata de Albergaria (29TNG7127), 06-08-2002 (1 ♂), 17-09-2003 (2 ♀♀).

UTM (10x10 Km): 29TNG72.

REFERENCES: Seabra (1939a, 1939b).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

COMMENTS: In both cases the specimens were collected on the trunks of Oak trees (*Quercus robur* L.).

Family Phaneropteridae

***Leptophyes punctatissima* (Bosc, 1792)**

MATERIAL EXAMINED: **Montalegre:** Pegia (near Lama Chã stream) (29TNG9329), 19-08-2002 (1 ♂); Near Pitões das Júnias monastery (29TNG8731), 22-08-2002 (1 ♂).

UTM (10x10 Km): 29TNG83, 29TNG92.

COMMENTS: First record for the Park.

***Phaneroptera nana* Fieber, 1853**

MATERIAL EXAMINED: **Terras de Bouro:** Gerês (29TNG6920), 17-09-2003 (1 ♂).

UTM (10x10 Km): 29TNG62.

COMMENTS: First record for the Park.

Family Tettigoniidae

***Antaxius florezi* Bolívar, 1899**

MATERIAL EXAMINED: **Melgaço:** Near Dorna (29TNG6949), 24-07-2002 (1 ♀). **Terras de Bouro:** Gerês (29TNG6920), 17-09-2003 (1 ♂).

UTM (10x10 Km): 29TNG62, 29TNG64.

COMMENTS: First record for the Park.

***Antaxius spinibrachius* (Fischer, 1853)**

MATERIAL EXAMINED: **Melgaço:** Near Dorna (29TNG6949), 24-07-2002 (1 ♀). **Montalegre:** Encruzilhada (29TNG8220), 20-08-2002 (1 ♀).

UTM (10x10 Km): 29TNG64, 29TNG82.

REFERENCES: Aires & Menano (1916), Harz (1969).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

***Metrioptera ambigua* Pfau, 1986**

MATERIAL EXAMINED: **Montalegre:** Pegia (near Lama Chã stream) (29TNG9329), 19-08-2002 (1 ♀).

UTM (10x10 Km): 29TNG92.

COMMENTS: First record for Portugal.

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

MATERIAL EXAMINED: **Melgaço:** Near Dorna (29TNG6949), 24-07-2002 (1 ♀). **Arcos de Valdevez:** Porto do Prado (29TNG5242), 22-07-2003 (1 ♀).

UTM (10x10 Km): 29TNG54, 29TNG64.

REFERENCES: Cazorro (1888), Seabra (1939a, 1939b).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

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

MATERIAL EXAMINED: **Montalegre:** Near Pitões das Júnias monastery (29TNG8731), 22-08-2002 (1 ♀); Pegia (near Lama Chã stream) (29TNG9329), 20-08-2002 (1 ♂, J. Vaqueiro *leg.*).

Ponte da Barca: Near Cidadelhe (29TNG6334), 23-07-2003 (1 obs.).

UTM (10x10 Km): 29TNG63, 29TNG83, 29TNG92.

REFERENCES: Aires & Menano (1916), Seabra (1939a, 1939b).

BIBLIOGRAPHIC LOCALITIES: Serra do Gerês.

Discussion

In this paper nine species are recorded for the first time from PNPG, one of them being new for the country. However, the presence of five of these species (*P. nana*, *C. fuscus*, *N. sylvestris*, *G. campestris* and *S. caerulans*) is not surprising, as they appear to be relatively widespread in the country. Furthermore, the occurrence of *A. florezi* in the Park was also likely, since it was already recorded from the North-west of the country (Gangwere *et al.*, 1985).

As a result, only three of the recorded species can be regarded as unexpected novelties and therefore be considered interesting range expansions. One of these is *S. asturiensis*, which in Portugal was only known from Mata do Fundão (Aires & Menano, 1916) and several localities in the river Sabor basin (North-eastern Portugal) (Miranda-Arabolaza & Barranco, 2005). The second one is *L. punctatissima*, previously known only from Serra da Nogueira (Miranda-Arabolaza & Barranco, 2005) and recorded in the

present work for the second time to the country. In Spain this species is known from Pirineos, Cantabria, Catalonia, Vizcaya and Guadarrama and Gredos mountain ridges (Bolívar, 1877; Ragge, 1965; Pinedo, 1988; Herrera & Larumbe, 1992; Llucià Pomares, 2002). Finally, *M. ambigua* is recorded here for the first time from Portugal. This species was only known from Lugo (Galicia), from where it was described in 1986 by Pfau, and from Cantabria (Pfau, 1986, as “*Metrioptera* aff. *ambigua*”; Herrera & Larumbe, 1992).

Despite the advance that the new data represents for the knowledge of the Orthoptera of Peneda-Gerês National Park, it must be emphasized that it results from a more general study of the Park’s invertebrate fauna whose field surveys were not specifically designed for the Orthoptera. Therefore, a much higher amount of data regarding the inventory, distribution, ecology and conservation status of these insects in the Park is to be expected if a specific study is conducted.

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