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Preliminary catalogue of the entomofauna of Parque das Serras do Porto (Porto, Portugal)

Francisco Gil¹, José Manuel Grosso-Silva² & Alexandre Valente³

¹ Rua Dr. Sérgio Vieira de Melo, 39, 3.º dir., 4420-623 S. Cosme, Portugal. e-mail: franvbgil@gmail.com

² Museu de História Natural e da Ciência da Universidade do Porto (MHNC-UP) / PRISC, Praça Gomes Teixeira, 4099-002 Porto, Portugal. e-mail: jmgrossosilva@mhnc.up.pt

³ Departamento de Biologia, Faculdade de Ciências da Universidade do Porto, Portugal. e-mail: acvalent@fc.up.pt

Abstract: The first catalogue of the insect fauna of the Parque das Serras do Porto (northern Portugal) is presented, including a compilation of literature records and new data mainly obtained in Couce (Valongo). The catalogue contains 210 species (101, or 48.1%, recorded for the first time from the area) spanning nine orders of the class Insecta, and is the first comprehensive list of the area's entomofauna.

Key words: Insecta, Protected Landscape, inventory, Parque das Serras do Porto, Porto, Portugal.

Resumen: Catálogo preliminar de la entomofauna del Parque das Serras do Porto (Porto, Portugal). Se presenta el primer catálogo de la fauna de insectos del Parque das Serras do Porto (norte de Portugal), incluyendo una recopilación de registros bibliográficos y nuevos datos obtenidos mayoritariamente en Couce (Valongo). El catálogo contiene 210 especies (101, o 48.1%, registradas por primera vez de la zona) de nueve ordenes de la clase Insecta y constituye el primer listado exhaustivo de la entomofauna del área.

Palabras clave: Insecta, Paisaje Protegido, inventario, Parque das Serras do Porto, Porto, Portugal.

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Introduction

Parque das Serras do Porto (henceforth referred to as PSeP or "the Park") is a Regionally Protected Landscape created in 2017 with an area of approximately 6000 hectares whose territory intercepts that of three municipalities in the district of Porto, Portugal: Gondomar, Paredes and Valongo (A.M.P.S.P., 2018). The PSeP is crossed by two main rivers (Ferreira and Sousa) and contains six mountain ranges (Santa Justa, Pias, Castiçal, Santa Iria, Banjas, and Flores mountain ranges) (A.M.P.S.P., 2018).

Within the limits of the PSeP lies a Site of Community Importance (SCI) of the Natura 2000 Network (PTCON0024 Valongo), established in 2004 and with an area of over 2500 hectares (I.C.N.F., 1997; Alves et al., 2018; Associação de Municípios Parque das Serras do Porto, 2018).

Although virtually surrounded by commercial plantations of *Eucalyptus* spp. and plagued by ever-increasing populations of invasive *Acacia* spp. and *Hackea* spp., the Park features a wide range of autochthonous plant species, such as *Quercus robur* L., *Q. suber* L., *Ulex micranthus* Lange and *Cytisus striatus* (Hill) Rothm. (Alves et al., 2018). Endangered plant species like *Narcissus cyclamineus* DC., *Culcita macrocarpa* C. Presl. and *Vandenboschia speciosa* (Willd.) G. Kunkel are also found within the limits of the PSeP (Alves et al., 2018). The Park's fauna also includes many species of interest, namely the European eel, *Anguilla anguilla* (Linnaeus, 1758), the gold-striped salamander, *Chioglossa lusitanica*

Bocage, 1864, and the European stag beetle, *Lucanus cervus* (Linnaeus, 1758), all of them of great conservation importance (Alves et al., 2018; A.M.P.S.P., 2018). Despite this, the overall insect fauna of the PSeP is still largely undocumented.

Our main objective was to merge all known insect records from PSeP with the unpublished information collected in the area to produce a preliminary inventory of the entomofauna of the Park.

Material and methods

As the main goal was to construct a comprehensive inventory of the entomofauna of the Park, data from as many available publications as possible was used, as well as the results of a recent unpublished M.S. thesis (Gil, 2019) and some additional unpublished records.

Table 1 summarises the information about the localities from the publications, including original geo-referencing, and the locations of the new records presented herein. In this table, location data used in Gil (2019) is presented as "Couce-1" (site 11 in Table 1), "Couce-2" (site 9) and "Couce-3" (site 10), representing sampling locations coded "C1", "C2" and "C3" in the thesis, respectively. These three entries are also represented by longer, more descriptive designations, respectively "Ponte do Couce, left bank of River Ferreira", "North-eastern limit of Couce village" and "Northern limit of Couce village, by the road" which insures more detailed location descriptions for the records listed in Annex 1.

Sampling techniques used in the previous studies include sweep net over vegetation, Malaise traps and light traps. Particularly, the insects in the inventory by Gil (2019) were collected using the sweep net method. In the latter study, the methodology used was applied in three different sub-sampling zones within the PSeP. The net used has a 65 cm long handle and an approximately circular ring with a maximum diameter of 44 cm. The netting used was a fine enough cloth (with a mesh of approximately 0,5 mm and with 61 cm of depth) to trap virtually every insect present in sampled vegetation. In a pre-defined transept, the net was swung on brush and herbaceous vegetation from side to side in five periods of two minutes.

Captured individuals were identified to species level on-site if possible; if not, they were sacrificed and preserved in ethanol 70% for further identification. Immatures, non-target individuals and insects already identified on that day in that sub-sampling zone were released at a distance great enough as to avoid recapture.

The complete inventory of the Park's insects recorded to date is presented in Annex 1. The date of capture or observation is presented in dd/mm/yyyy format.

Unless otherwise stated, the specimens studied were captured by the authors and the observations ("obs.") were done by J.M. Grosso-Silva. Likewise, unless when stated explicitly, the specimens are deposited in the collection of Museu de História Natural e da Ciência da Universidade do Porto (Portugal). The specimens in J.M. Grosso-Silva's personal collection are marked "GSC".

Three situations regarding the treatment of previous literature records should be noted:

- Carles-Tolrá & Andrade (2011) recorded three additional specimens for Campo (Valongo) whose identification did not reach species-level: *Minettia* sp., *Sapromyzosoma* sp. and *Chamaepsila* sp. These taxa are not included in Annex 1.
- Ferreira et al. (2005) found two species of Odonata in Valongo, besides the one featured in Annex 1, namely *Lestes viridis* (Van der Linden, 1825) (Lestidae) and *Platycnemis latipes* Rambur, 1842 (Platycnemididae). However, it is unclear if these were collected within the limits of the Park and, as a result, were not included in the inventory (Annex 1).
- Ebejer & Andrade (2015) cited a number of specimens of the genus *Elachiptera* Macquart, 1835 as part of the *Elachiptera cornuta*-species complex because of the unresolved taxonomy of the group, acknowledging that several taxa may be represented in that material. For this reason, these specimens are not considered in Annex 1.

Results and discussion

The data in this inventory refers to a total of 210 species in 9 orders (Annex 1). Overall, 101 of the species (48.1%) are new for the area: most of the Coleoptera (43 species) and Lepidoptera (17 species), all the Hemiptera (31 species), Orthoptera (3 species), Hymenoptera (2 species), Mantodea (2 species), Neuroptera (1 species), Odonata (1 species) and Diptera (1 species).

Four of the species recorded so far have a particular interest:

- *Lucanus cervus* (Linnaeus, 1758) (Coleoptera: Lucanidae), is a saproxilophagous species associated with deciduous trees such as oaks (*Quercus* spp.) and chestnuts (*Castanea sativa* Mill.) (Harvey *et al.*, 2011). The species is protected by the Directive 92/43/CEE ("Habitats") (Annex II) and has a Near Threatened threat status in Europe and Least Concern threat status in the Mediterranean area (Nieto & Alexander, 2010; García *et al.*, 2018).
- *Oxygastra curtisii* (Dale, 1834), *Gomphus graslinii* Rambur, 1842, and *Macromia splendens* (Pictet, 1843) (Odonata: Corduliidae, Gomphidae, Macromiidae). These species have a southwestern European distribution and live near and are largely dependent on large water courses (rivers and large streams) and can even be used as water quality indicators (Ferreira, 2009; Alves *et al.*, 2018). The three species are legally protected by the Directive 92/43/CEE ("Habitats") (Annexes II and IV) and have a Near Threatened threat status (*G. graslinii* and *O. curtisii*) and Vulnerable threat status (*M. splendens*) (Kalkman *et al.*, 2010; Boudot, 2020). The presence of the latter species in PSeP is of particular interest and importance, as it is not only endangered, but extremely restricted in its geographic distribution: endemic of the Iberian Peninsula and the south of France, it is rare throughout its range and spread out in isolated populations (Kalkman *et al.*, 2010; Maravalhas *et al.*, 2011; Alves *et al.*, 2018; Boudot, 2020).

Conclusions

The catalogue of the insects of the Parque das Serras do Porto presented in this study, derived from bibliographic compilation and fieldwork conducted over several years, must be viewed as a preliminary contribution towards the inventory of the entomofauna and the characterization of the species' distributions in the area, being an obvious underestimate of the local fauna. As a result, the main conclusion to be derived is that much is still to be done in terms of the cataloguing of all the orders and also regarding the sampling of most of the Park's area.

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References

Alves, P.; Silva, D.; Fernandes, D.; Sá, J.; Rodrigues, I.; Nunes, M.J. & Viterbo, R. 2018. 5.2 *Biodiversidade*, pp. 145-167. In: Andresen, T. & Andrade, G. (coords.). *Plano de Gestão do Parque das Serras do Porto - Estudos Prévios*. Associação de Municípios Parque das Serras do Porto, Gondomar-Paredes-Valongo, 279 pp.

- Andrade, R. 2014. First portuguese record of the genus *Atrichops* Verrall (Diptera: Athericidae). *Boletín de la Sociedad Entomológica Aragonesa*, **54**: 349-350.
- Andrade, R.; Gonçalves, A.R. & Ebejer, M.J. 2015. Acartophthalmidae, Camillidae, Campichoetidae and Diastatidae (Diptera: Brachycera) from Portugal. *Heteropterus Revista de Entomología*, **15**(1): 17-21.
- A.M.P.S.P. (Associação de Municípios Parque das Serras do Porto). 2018. *Plano de Gestão do Parque das Serras do Porto*. Associação de Municípios Parque das Serras do Porto, Gondomar-Paredes-Valongo, 124 pp.
- Boudot, J.-P. 2020. *Macromia splendens* (Pictet, 1843). The IUCN Red List of Threatened Species 2020. Available online at: <https://doi.org/10.2305/IUCN.UK.2020-3.RLTS.T12598A140605297.en>
- Carles-Tolrá, M. 2020. Datos faunísticos de tábanos de España, Portugal y Andorra (Diptera: Tabanidae). *Boletín de la Sociedad Entomológica Aragonesa*, **67**: 217-220.
- Carles-Tolrá, M. & Andrade, R. 2011. Algunos clúsidos, lauxánidos y psílidos de Portugal (Diptera: Clusiidae, Lauxaniidae y Psilidae). *Boletín de la Sociedad Entomológica Aragonesa*, **48**: 489-490.
- Černý, M.; Andrade, R.; Gonçalves, A.R. & von Tschirnhaus, M. 2018. New records of Agromyzidae (Diptera) from Portugal, with an updated checklist. *Acta Musei Silesiae, Scientiae Naturales*, **67**(1): 7-57.
- Corley, M.F.V.; Nunes, J.; Rosete, J. & Ferreira, S. 2019. New and interesting Portuguese Lepidoptera records from 2018 (Insecta: Lepidoptera). *SHILAP Revista de Lepidopterología*, **47**(188): 611-630.
- Corley, M.F.V, Rosete, J.; Gonçalves, A.R.; Mata, V.; Nunes, J. & Pires, P. 2018. New and interesting Portuguese Lepidoptera records from 2016 (Insecta: Lepidoptera). *SHILAP Revista de Lepidopterología*, **46**(181): 33-56.
- Dvorak, L. & Andrade, R. 2016. New records of window-gnats from Portugal (Diptera: Anisopodidae). *Boletín de la Sociedad Entomológica Aragonesa*, **58**: 231-232.
- Ebejer, M.J. & Andrade, R. 2010. First records of Platypezidae (Diptera) from mainland Portugal with a first record for Iberia of the genus *Paraplatypeza* Kessel & Magioncalda. *Boletín de la Sociedad Entomológica Aragonesa*, **47**: 454.
- Ebejer, M.J. & Andrade, R. 2015. The Chloropidae (Diptera: Brachycera) of mainland Portugal with description of a new species of *Lasiosina* Becker. *Entomologist's Monthly Magazine*, **151**: 227-271.
- Ebejer, M.J.; Andrade, R.; Gonçalves, A.R. & Knutson, L.V. 2016. Sciomyzidae (Diptera) of Portugal with new records and description of a new species of *Pherbellia* Robineau-Desvoidy, 1830. *Dipterists Digest*, **23**: 23-40.
- Ferreira, S. 2009. Um vale encantado... *Valongo Natura*, **15**: 2-3.
- Ferreira, S.; Soares, A. & Grosso-Silva, J.M. 2008. Dragonfly (Insecta, Odonata) records from three northern Portugal localities. *Boletín de la Sociedad Entomológica Aragonesa*, **42**: 445-446.
- Ferreira, S.; Soares-Vieira, P. & Grosso-Silva, J.M. 2005. Miscellaneous records of dragonflies and damselfies (Insecta, Odonata) from Continental Portugal. *Boletín de la Sociedad Entomológica Aragonesa*, **36**: 275-277.
- García, N.; Numa, C.; Bartolozzi, L.; Brustel, H.; Buse, J.; Norbiato, M.; Recalde, J.I.; Zapata, J.L.; Dodelin, B.; Alcázar, E.; Barrios, V.; Verdugo, A.; Audisio, P.; Micó, E.; Otero, J.C.; Bahillo, P.; Viñolas, A.; Valladares, L.; Méndez, M.; El Antry, S. & Galante, E. 2018. *The conservation status and distribution of Mediterranean saproxylic beetles*. Malaga, Spain: IUCN. xii + 58 pp.
- Gil, F.V.B. 2019. *Análise comparativa da entomofauna (Insecta: Coleoptera e Hemiptera) do vale do rio Ferreira (Valongo) e do Parque Oriental da Cidade do Porto ao longo de um ciclo anual*. Master Thesis. Faculdade de Ciências da Universidade do Porto. Porto, 47 pp.

Grosso-Silva, J.M. 1999. Registos interessantes de coleópteros de Portugal (Insecta, Coleoptera). *Boletín de la Sociedad Entomológica Aragonesa*, **25**: 21-23.

Grosso-Silva, J.M. 2002. Registos interessantes de coleópteros (Insecta, Coleoptera) para Portugal (3ª nota). Primeiro registo ibérico de *Pediacus dermestoides* (Fabricius, 1792) (Cucujidae). *Boletín de la Sociedad Entomológica Aragonesa*, **31**: 49-54.

Grosso-Silva, J.M. 2011. "Vivo nos carvalhais da Santa Justa!" - *Lucanus cervus*. *Valongo Natura*, **19**: 7.

Harvey, D.J.; Gange, A.C.; Hawes, C.J.; Rink, M.; Abdehalden, M.; Al Fulaij, N.; Asp, T.; Ballerio, A.; Bartolozzi, L.; Brustel, H.; Cammaerts, R.; Carpanetto, G.M.; Cederberg, B.; Chobot, K.; Cianferoni, F.; Drumont, A.; Ellwanger, G.; Ferreira, S.; Grosso-Silva, J.M.; Gueorguiev, B.; Harvey, W.; Hendriks, P.; Istrate, P.; Jansson, N.; Jelaska, L.S.; Jendek, E.; Jović, M.; Kervyn, T.; Krenn, H.W.; Kretschmer, K.; Legakis, A.; Lelo, S.; Moretti, M.; Merkl, O.; Palma, R.M.; Neculiseanu, Z.; Rabitsch, W.; Rodríguez, S.M.; Smit, J.T.; Smith, M.; Sprecher-Uebersax, E.; Telnov, D.; Thomaes, A.; Thomsen, P.F.; Tykarski, P.; Vrezec, A.; Werner, S. & Zach, P. 2011. Bionomics and distribution of the stag beetle, *Lucanus cervus* (L) across Europe. *Insect Conservation and Diversity*, **4**(1): 23-38.

I.C.N.F. (Instituto da Conservação da Natureza e das Florestas). 1997. *Ficha de Caracterização Ecológica e de Gestão dos Valores Naturais do Plano Sectorial da Rede Natura 2000 - Sítio Valongo (Código PTCON0024)*. Available online at: <http://www2.icnf.pt/portal/pn/biodiversidade/rn2000/resource/doc/sic-cont/valongo>

Kalkman, V.J.; Boudot, J.-P.; Bernard, R.; Conze, K.-J.; De Knijf, G.; Dyatlova, E.; Ferreira, S.; Jović, M.; Ott, J.; Riservato, E. & Sahlén, G. 2010. *European Red List of Dragonflies*. Luxembourg: Publications Office of the European Union. 28 pp.

MacGowan, I.; Andrade, R. & Gonçalves, A.R. 2016. Notes on the Lonchaeidae (Insecta, Diptera) of Portugal with a description of a new species. *Boletín de la Asociación española de Entomología*, **40**(1-2): 175-183.

Maravalhas, E.; Pereira, P.; Soares, A. & Peixoto, M. 2011. Notes on the distribution and biology of the Splendid Cruiser *Macromia splendens* (Pictet, 1843) in northern Portugal (Odonata: Macromididae). *Boletín de la Sociedad Entomológica Aragonesa*, **48**: 439-440.

Nieto, A. & Alexander, K.N.A. 2010. *European Red List of Saproxyllic Beetles*. Luxembourg: Publications Office of the European Union. 45 pp.

Roháček, J. & Andrade, R. 2017. *Periscelis fugax* sp. nov., an overlooked European species of Periscelididae (Diptera), with notes on the morphology and terminology of terminalia. *Acta Entomologica Musei Nationalis Pragae*, **57**(1): 229-251.

Roháček, J.; Andrade, R.; Gonçalves, A.R. & Almeida, J.M. 2016. New records of Micropezidae, Clusiidae and Periscelididae (Diptera: Acalyptrata) from Portugal. *Acta Musei Silesiae, Scientiae Naturales*, **65**(2): 153-166.

Table 1. - Sampling localities of published and new records of insects in the PSeP, with municipalities, latitude, longitude, and altitude (in meters above sea level). Altitude is only presented when enough geographical detail is available or when stated in the original publication. The geo-referencing presented in the original publications was converted into decimal degrees format except when MGRS coordinates are the only available information.

Reference	Site	Locality data	Notes
Andrade (2014)	1	Valongo: River Simão bank, near Carvoeira (41.179639°, -8.482500°), 97 m	Published as "Campo, 41°10'46.70"N, 8°28'57.00"W"
Andrade et al. (2015) Ebejer & Andrade (2015) Dvorak & Andrade (2016) Ebejer et al. (2016) MacGowan et al. (2016)	2	Valongo: Couce (41.159278°, -8.484889°), 50 m	Published as "Campo" with coordinates: 41°09'33.4"N, 8°29'05.6"W; inferred as Couce from coordinates
Roháček et al. (2016) Roháček & Andrade (2017) Černý et al. (2018)			Published as "Valongo, 41°09'33.4"N, 8°29'05.6"W"; inferred as Couce from coordinates
Grosso-Silva (1999) Grosso-Silva (2002) Ferreira et al. (2005) Carles-Tolrá (2020) This study	3	Paredes: Alvre, Santa Comba stream bank (41.124693°, -8.419665°), 71 m	Published as "Alvre (=Aguiar de Sousa) (Paredes)" by Carles-Tolrá (2020), as "Santa Comba stream (Alvre) (29TNF45)" by Ferreira et al. (2005), and as "Alvre (Aguiar de Sousa), Paredes (29TNF45)" by Grosso-Silva (1999, 2002)
Carles-Tolrá & Andrade (2011)	4	Valongo: River Simão bank, near Carvoeira (41.178964°, -8.482157°), 95 m	Published as "Campo" (coordinates: Rui Andrade, pers. comm.)
Černý et al. (2018)	5	Valongo: River Simão bank, near Carvoeira (41.175528°, -8.480139°), 86 m	Published as "Campo and Sobrado, 41°10'31.9"N, 8°28'48.5"W"
Corley et al. (2018) Corley et al. (2019)	6	Valongo: Couce (29TNF4356), 50 m	
Ebejer & Andrade (2010)	7	Valongo: River Simão bank, near Carvoeira (41.177881°, -8.481669°), 99 m	Published as "Campo (41°10'40.37"N, 8°28'54.01"W)"
Ferreira et al. (2008) Ferreira (2009)	8	Valongo: Vale de Couce	Ferreira et al. (2008) provide an MGRS coordinate: 29TNF45
Gil (2019)	9	Valongo: North-eastern limit of Couce village: "Couce-2" (41.160583°, -8.483333°), 66 m	
Gil (2019)	10	Valongo: Northern limit of Couce village, by the road: "Couce-3" (41.160250°, -8.487222°), 77 m	
Gil (2019)	11	Valongo: Ponte do Couce, left bank of River Ferreira: "Couce-1" (41.157056°, -8.483611°), 49 m	
Grosso-Silva (2011)	12	Valongo: Serra de Santa Justa	
Maravalhas et al. (2011)	13	Valongo: Couce (41.1592°, -8.4848°), 50 m	Published as "River Ferreira, Campo at 50 m (29TNF45)"; inferred as Couce from the altitude presented
This study	14	Gondomar: Near Alto dos Zerbos (41.141655°, -8.474777°), 211 m	
This study	15	Valongo: Environmental Interpretation Centre (41.185036°, -8.497129°), 189 m	
This study	16	Valongo: Couce (41.159°, -8.486°)	
This study	17	Valongo: Ponte do Couce (41.157108°, -8.484690°), 44 m	
This study	18	Valongo: River Simão bank, between Espinheiro and Azenha (41.182726°, -8.486320°), 109 m	
This study	19	Valongo: River Simão bank, near Carvoeira (41.178855°, -8.481943°), 94 m	
This study	20	Valongo: Near the mouth of river Simão (41.173702°, -8.479193°), 90 m	

This study	21	Valongo: Valongo-Couce road, between the mouth of river Simão and Couce (41.169805°, -8.483009°), 87 m	
This study	22	Valongo: River Simão bank, south-east of Valongo's City Park (41.184453°, -8.487902°), 109 m	
This study	23	Valongo: Northern limit of Couce village, by the road (41.160412°, -8.487092°), 75 m	
This study	24	Valongo: North-eastern limit of Couce village (41.160924°, -8.485868°), 64 m	

Annex 1.- Inventory of the insects of PSeP, with the recorded diversity of each order. The localities are arranged by municipality and include the site numbers presented in Table 1.

Coleoptera (46 species)

Family Cantharidae

- *Rhagonycha (Rhagonycha) fulva* (Scopoli, 1763)

Valongo: Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 21/06/2013 (10, obs.).

- *Rhagonycha (Rhagonycha) quadricollis* Kiesenwetter, 1852

Paredes: Alvre, Santa Comba stream bank (site 3), 02/03/2007 (3 ♂♂, 2 ♀♀, GSC).

Family Carabidae

- *Demetrias atricapillus* (Linnaeus, 1758)

Paredes: Alvre, Santa Comba stream bank (site 3), 14/02/1998 (2, obs.).

- *Drypta (Drypta) dentata* (Rossi, 1790)

Paredes: Alvre, Santa Comba stream bank (site 3) (Grosso-Silva, 1999).

- *Penetretus rufipennis* (Dejean, 1828)

Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (1, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (1, obs.).

Family Cerambycidae

- *Arhopalus ferus* (Mulsant, 1839)

Paredes: Alvre, Santa Comba stream bank (site 3), 25/09/1998 (1, GSC).

- *Oberea (Oberea) oculata* (Linnaeus, 1758)

Valongo: River Simão bank, near Carvoeira (site 19), 03/08/2019 (2, obs.).

- *Stictoleptura (Cribroleptura) stragulata* (Germar, 1824)

Valongo: Ponte do Couce (site 17), 12/07/2018 (2, obs.); Couce-3 (site 10), 28/06/2019 (2); Northern limit of Couce village, by the road (site 23), 12/07/2018 (5, obs.).

- *Stictoleptura (Stictoleptura) fontenayi* (Mulsant, 1839)
Valongo: Couce-3 (site 10), 24/07/2018 (1, GSC).

Family Chrysomelidae

- *Agelastica alni* (Linnaeus, 1758)
Valongo: Ponte do Couce (site 17), 24/07/2018 (1, obs.)
- *Calomicrus circumfusus* (Marsham, 1802)
Valongo: Couce-1 (site 11), 28/05/2019 (2 ♂♂).
- *Chrysolina (Chrysolina) bankii* (Fabricius, 1775)
Valongo: Near the mouth of river Simão (site 20), 24/04/2010 (1, obs.).
- *Cryptocephalus vittatus* Fabricius, 1775
Valongo: Couce-2 (site 9), 24/07/2018 (1 ♂); Couce-3 (site 10), 28/06/2019 (1 ♂).
- *Dicladispa testacea* (Linnaeus, 1767)
Paredes: Alvre, Santa Comba stream bank (site 3), 14/02/1998 (1, obs.). Valongo: Couce-1 (site 11), 24/07/2018 (1); Couce-2 (site 9), 24/10/2018 (1); Couce-3 (site 10), 24/07/2018 (1); River Simão bank, near Carvoeira (site 19), 23/10/2010 (1, obs.).
- *Exosoma lusitanicum* (Linnaeus, 1767)
Valongo: Couce-1 (site 11), 29/04/2019 (2); Environmental Interpretation Centre (site 15), 21/06/2013 (2, obs.).
- *Gonioctena (Spartophila) olivacea* (Forster, 1771)
Valongo: Couce-1 (site 11), 29/04/2019 (3); Near the mouth of river Simão (site 20), 24/04/2010 (10, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 15/05/2013 (2, obs.).
- *Labidostomis (Chlorostola) hordei* (Fabricius, 1787)
Valongo: Couce-1 (site 11), 28/05/2019 (1 ♀).
- *Pachybrachis pteromelas* Graëlls, 1858
Valongo: Couce-1 (site 11), 24/07/2018 (1 ♂).
- *Timarcha chloropus* (Germar, 1824)
Paredes: Alvre, Santa Comba stream, 14/02/1998 (1, E. Petitpierre det., 2012, GSC).

Family Coccinellidae

- *Adalia (Adalia) bipunctata* (Linnaeus, 1758)
Valongo: Near the mouth of river Simão (site 20), 24/04/2010 (1, obs.).
- *Adalia (Adalia) decempunctata* (Linnaeus, 1758)
Valongo: Couce-1 (site 11), 23/01/2019 (1).

- *Chilocorus bipustulatus* (Linnaeus, 1758)
Valongo: Couce-1 (site 11), 28/02/2019 (1), 28/06/2019 (2); Couce-2 (site 9), 25/08/2018 (1); Couce-3 (site 10), 24/10/2018 (1), 22/11/2018 (1), 28/02/2019 (1), 29/04/2019 (1).
- *Coccinella septempunctata* Linnaeus, 1758
Valongo: Couce-3 (site 10), 29/04/2019 (1).
- *Hyperaspis reppensis* (Herbst, 1783)
Valongo: Couce-1 (site 11), 28/05/2019 (1).
- *Lindorus lophantae* (Blaisdell, 1892)
Valongo: Couce-1 (site 11), 28/02/2019 (1); Couce-2 (site 9), 22/11/2018 (1), 28/02/2019 (1), 28/05/2019 (3), 28/06/2019 (6); Couce-3 (site 10), 25/08/2018 (2), 24/10/2018 (1), 23/01/2019 (1), 28/06/2019 (4).
- *Parexochomus nigromaculatus* (Goeze, 1777)
Valongo: Couce-1 (site 11), 23/01/2019 (1).
- *Scymnus apetzi* Mulsant, 1846
Valongo: Couce-2 (site 9), 25/08/2018 (1), 24/10/2018 (1).
- *Stethorus pusillus* (Herbst, 1797)
Valongo: Couce-3 (site 10), 28/06/2019 (1).
- *Tytthaspis sedecimpunctata* (Linnaeus, 1758)
Valongo: Near the mouth of river Simão (site 20), 24/04/2010 (1, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (1, obs.).

Family Lucanidae

- *Lucanus cervus* (Linnaeus, 1758)
Valongo: Couce (site 16), 26/05/2007 (1 ♂, Claudia Soares obs.); Serra de Santa Justa (site 12) (Grosso-Silva, 2011).

Family Meloidae

- *Lytta (Lytta) vesicatoria* (Linnaeus, 1758)
Gondomar: Near Alto dos Zerbos (site 14), 08/04/2019 (1, obs.).
Paredes: Alvre, Santa Comba stream bank (site 3), 25/04/1994 (1, GSC).
Valongo: Couce-3 (site 10), 29/04/2019 (1); Near the mouth of river Simão (site 20), 24/04/2010 (1, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (1, obs.).

Family Melyridae

- *Axinotarsus (Axinotarsus) marginalis* (Laporte, 1840)
Valongo: Couce-1 (site 11), 28/05/19 (1), 28/06/2019 (1); Couce-2 (site 9), 28/05/2019 (1).
- *Enicopus (Parahenicopus) paulinoi* Bourgeois, 1884
Valongo: Couce-1 (site 11), 28/05/2019 (2), 28/06/2019 (1).

- *Enicopus (Enicopus) spiniger* Jacquelin du Val, 1860

Valongo: Couce-1 (site 11), 28/05/2019 (2).

- *Malachius (Malachius) bipustulatus* (Linnaeus, 1758)

Valongo: Couce-1 (site 11), 29/04/2019 (1 ♀).

- *Malachius (Malachius) lusitanicus* Erichson, 1840

Valongo: Couce-1 (site 11), 29/04/2019 (1 ♂).

Family Nitidulidae

- *Meligethes aeneus* (Fabricius, 1775)

Valongo: Couce-1 (site 11), 30/09/2018 (1).

- *Meligethes grenieri* Ch. Brisout de Barneville, 1872

Valongo: Couce-1 (site 11), 29/04/2019 (1).

Family Oedemeridae

- *Oedemera (Oedemera) flavipes* (Fabricius, 1792)

Valongo: Couce-1 (site 11), 24/07/2018 (1 ♂), 28/06/2019 (1 ♀); Couce-2 (site 9), 24/07/2018 (1 ♂), 28/06/2019 (6); Couce-3 (site 10), 24/07/2018 (1).

- *Oedemera (Oedemera) nobilis* (Scopoli, 1763)

Valongo: Couce-2 (site 9), 28/06/2019 (1).

Family Phalacridae

- *Olibrus corticalis* (Panzer, 1797)

Valongo: Couce-1 (site 11), 25/08/2018 (1).

Family Scarabaeidae

- *Onthophagus (Onthophagus) taurus* (Schreber, 1759)

Valongo: Ponte do Couce (site 17), 08/04/2019 (1).

- *Oryctes (Oryctes) nasicornis* (Linnaeus, 1758) ssp. *grypus* (Illiger, 1803)

Valongo: North-eastern limit of Couce village (site 24), 11/07/2007 (1 ♂, Claudia Soares leg., GSC).

- *Oxythyrea funesta* (Poda, 1761)

Gondomar: Near Alto dos Zerbos (site 14), 08/04/2019 (10, obs.).

Valongo: Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 15/05/2013 (5, obs.).

Family Staphylinidae

- *Nudobius collaris* (Erichson, 1839)

Paredes: Alvre, Santa Comba stream bank (site 3) (Grosso-Silva, 2002).

Family Tenebrionidae

- *Heliotaurus ruficollis* (Fabricius, 1781)

Paredes: Alvre, Santa Comba stream bank (site 3), 25/04/1994 (1, GSC).

Diptera (88 species)

Family Agromyzidae

- *Agromyza abiens* Zetterstedt, 1848

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Agromyza hiemalis* Becker, 1908

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Agromyza nana* Meigen, 1830

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Cerodontha (Butomyza) angulata* (Loew, 1869)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Cerodontha (Cerodontha) fulvipes* (Meigen, 1830)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Cerodontha (Icteromyza) capitata* (Zetterstedt, 1848)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Cerodontha (Icteromyza) rozkosnyi* Černý, 2007

Valongo: Couce (site 2) (Černý et al., 2018).

- *Chromatomyia aprilina* (Goureaux, 1851)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Chromatomyia milii* (Kaltenbach, 1864)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Liriomyza orbona* (Meigen, 1830)

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Liriomyza pedestris* Hendel, 1931

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Ophiomyia moravica* Černý, 1994

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Phytoliriomyza pteridii* Spencer, 1973

Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

- *Phytoliriomyza scotica* Spencer, 1962
Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).
- *Phytomyza albipennis* Fallén, 1823
Valongo: Couce (site 2) (Černý et al., 2018).
- *Phytomyza clematidis* Kaltenbach, 1859
Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).
- *Phytomyza ranunculi* (Schrank, 1803)
Valongo: River Simão bank, near Carvoeira (site 5) (Černý et al., 2018).

Family Anisopodidae

- *Sylvicola cinctus* (Fabricius, 1787)
Valongo: Couce (site 2) (Dvorak & Andrade, 2016).

Family Athericidae

- *Atrichops crassipes* (Meigen, 1820)
Valongo: River Simão bank, near Carvoeira (site 1) (Andrade, 2014).

Family Campichoetidae

- *Campichoeta grandiloba* McAlpine, 1962
Valongo: Couce (site 2) (Andrade et al., 2015).
- *Campichoeta punctum* (Meigen, 1830)
Valongo: Couce (site 2) (Andrade et al., 2015).

Family Chloropidae

- *Aphanotrigonum anderssoni* Nartshuk, 2003
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Camarota curvipennis* (Latreille, 1805)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Cetema elongatum* (Meigen, 1830)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Cetema neglectum* Tonnoir, 1921
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Chlorops limbatus* Meigen, 1830
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).

- *Chlorops planifrons* (Loew, 1866)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Chlorops pumilionis* (Bjerkander, 1778)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Chlorops troglodytes* (Zetterstedt, 1848)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Dicraeus tibialis* (Macquart, 1835)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Elachiptera austriaca* Duda, 1932
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Elachiptera bimaculata* (Loew, 1845)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Elachiptera megaspis* (Loew, 1858)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiambia baliola* Collin, 1946
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiambia palposa* (Fallén, 1820)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiochaeta pubescens* (Thalhammer, 1898)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiosina brevisurstylata* Dely-Draskovits, 1976
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiosina intermedia* Dely-Draskovits, 1977
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Lasiosina stenostylus* Ebejer & Andrade, 2015
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Meromyza femorata* Macquart, 1835
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinella frit* (Linnaeus, 1758)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinella maura* (Fallén, 1820)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).

- *Oscinella nartshukiana* Beschovski, 1978
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinella nitidissima* (Meigen, 1838)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinella ventricosi* Nartshuk, 1955
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinimorpha arcuata* (Duda, 1932)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinimorpha novaki* (Strobl, 1893)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Oscinisoma germanicum* (Duda, 1932)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Rhodesiella fedtshenkoi* Nartshuk, 1978
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Thaumatomyia elongatula* (Becker, 1910)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Thaumatomyia notata* (Meigen, 1830)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Tricimba bimarginata* Sabrosky, 1979
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Tricimba cincta* (Meigen, 1830)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Tricimba humeralis* (Loew, 1858)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).
- *Tricimba lineella* (Fallén, 1820)
Valongo: Couce (site 2) (Ebejer & Andrade, 2015).

Family Clusiidae

- *Clusiodes gentilis* (Collin, 1912)
Valongo: Couce (site 2) (Roháček et al., 2016).
- *Clusiodes verticalis* (Collin, 1912)
Valongo: Couce (site 2) (Roháček et al., 2016).

Family Diastatidae

- *Diastata adusta* Meigen, 1830
Valongo: Couce (site 2) (Andrade *et al.*, 2015).
- *Diastata fuscula* (Fallén, 1823)
Valongo: Couce (site 2) (Andrade *et al.*, 2015).

Family Lauxaniidae

- *Callipum oosterbroeki* Shatalkin, 2000
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Chyliza leptogaster* (Panzer, 1798)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Homoneura notata* (Fallén, 1820)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Minettia biseriata* (Loew, 1847)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Minettia fasciata* (Fallén, 1826)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Minettia flavipalpis* (Loew, 1847)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Minettia lupulina* (Fabricius, 1787)
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Prosopomyia pallida* Loew, 1856
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).
- *Sapromyza tuberculosa* Becker, 1895
Valongo: River Simão bank, near Carvoeira (site 4) (Carles-Tolrá & Andrade, 2011).

Family Lonchaeidae

- *Dasiops calvus* Morge, 1959
Valongo: Couce (site 2) (MacGowan *et al.*, 2016).
- *Protearomyia iberica* MacGowan, 2014
Valongo: Couce (site 2) (MacGowan *et al.*, 2016).
- *Silba adipata* McAlpine, 1956
Valongo: Couce (site 2) (MacGowan *et al.*, 2016).

- *Silba fumosa* (Egger, 1862)
Valongo: Couce (site 2) (MacGowan et al., 2016).

Family Micropezidae

- *Micropeza lateralis* Meigen, 1826
Valongo: Couce (site 2) (Roháček et al., 2016).
- *Neria octoannulata* (Strobl, 1899)
Valongo: Couce (site 2) (Roháček et al., 2016).

Family Periscelididae

- *Periscelis (Myodris) annulata* (Fallén, 1813)
Valongo: Couce (site 2) (Roháček et al., 2016).
- *Periscelis (Myodris) pirircercus* Carles-Tolrá & Verdugo Páez, 2009
Valongo: Couce (site 2) (Roháček et al., 2016).
- *Periscelis (Periscelis) fugax* Roháček & Andrade, 2017
Valongo: Couce (site 2) (Roháček et al., 2016, as *Periscelis (Periscelis)* sp. n. near *P. winnertzii* Egger, 1862; Roháček & Andrade, 2017).

Family Platypezidae

- *Lindneromyia dorsalis* (Meigen, 1804)
Valongo: River Simão bank, near Carvoeira (site 7) (Ebejer & Andrade, 2010).
- *Paraplatypeza atra* (Meigen, 1804)
Valongo: River Simão bank, near Carvoeira (site 7) (Ebejer & Andrade, 2010).
- *Polyporivora ornata* (Meigen, 1838)
Valongo: River Simão bank, near Carvoeira (site 7) (Ebejer & Andrade, 2010).

Family Sciomyzidae

- *Euthycera seguyi* Vala, 1990
Valongo: Couce (site 2) (Ebejer et al., 2016).
- *Hydromya dorsalis* (Fabricius, 1775)
Valongo: Couce (site 2) (Ebejer et al., 2016).
- *Ilione trifaria* (Loew, 1847)
Valongo: Couce (site 2) (Ebejer et al., 2016).
- *Pherbellia griseola* (Fallén, 1820)
Valongo: Couce (site 2) (Ebejer et al., 2016).

- *Tetanocera arrogans* (Meigen, 1830)
Valongo: Couce (site 2) (Ebejer *et al.*, 2016).
- *Tetanocera ferruginea* (Fallén, 1820)
Valongo: Couce (site 2) (Ebejer *et al.*, 2016).

Family Syrphidae

- *Episyrphus balteatus* (De Geer, 1776)
Valongo: River Simão bank, near Carvoeira (site 19), 24/04/2010 (1, obs.).

Family Tabanidae

- *Haematopota enriquei* Leclercq, 1971
Paredes: Alvre, Santa Comba stream bank (site 3) (Carles-Tolrá, 2020).

Hemiptera (31 species)

Family Alydidae

- *Camptopus lateralis* (Germar, 1817)
Valongo: Couce-2 (site 9), 24/10/2018 (1).

Family Anthocoridae

- *Elatophilus nigricornis* (Zetterstedt, 1838)
Valongo: Couce-1 (site 11), 28/05/2019 (2).
- *Orius laticollis* (Reuter, 1884)
Valongo: Couce-1 (site 11), 26/03/2019 (2).

Family Berytidae

- *Apoplymus pectoralis* Fieber, 1859
Valongo: Couce-2 (site 9), 28/05/2019 (1).

Family Cercopidae

- *Cercopis intermedia* Kirschbaum, 1868
Paredes: Alvre, Santa Comba stream bank (site 3), 25/04/1994 (1, GSC), 02/03/2007 (1, obs.; 1, GSC).
Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (5, obs.); River Simão bank, near Carvoeira (site 19), 24/04/2010 (5, obs.); Near the mouth of river Simão (site 20), 24/04/2010 (5, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (5, obs.).

Family Cicadellidae

- *Cicadella viridis* (Linnaeus, 1758)
Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 23/10/2010 (1, obs.); River

Simão bank, near Carvoeira (site 19), 23/10/2010 (1, obs.), 03/08/2019 (1, obs.), 13/09/2020 (10, obs.); River Simão bank, south-east of Valongo's City Park (site 22), 05/10/2018 (1, obs.).

Family Coreiidae

- *Coreus marginatus* (Linnaeus, 1758)

Valongo: Couce-2 (site 9), 25/08/2018 (1), 26/03/2019 (1); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (2, obs.).

- *Syromastes rhombeus* (Linnaeus, 1767)

Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (1, obs.).

Family Hydrometridae

- *Hydrometra stagnorum* (Linnaeus, 1758)

Paredes: Alvre, Santa Comba stream bank (site 3), 02/03/2007 (1, obs.).

Family Lygaeidae

- *Geocoris erythrocephalus* (Le Peletier & Serville, 1825)

Valongo: Couce-2 (site 9), 29/04/2019 (1).

- *Horvathiolus superbus* (Pollich, 1779)

Valongo: Couce-1 (site 11), 26/03/2019 (1), 28/06/2019 (1); Couce-2 (site 9), 25/08/2018 (2), 26/03/2019 (1), 29/04/2019 (2), 28/05/2019 (5), 26/06/2019 (2); Couce-3 (site 10), 26/03/2019 (1), 29-4-2019 (1).

- *Kleidocerys ericae* (Horváth, 1909)

Valongo: Couce-1 (site 11), 24/07/2018 (1); Couce-2 (site 9), 25/08/2018 (1), 29/04/2019 (1); Couce-3 (site 10), 24/10/2018 (1).

- *Melanocoryphus albomaculatus* (Goeze, 1778)

Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 23/10/2010 (5, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 13/09/2020 (1, obs.).

- *Nysius ericae* (Schilling, 1829)

Valongo: Couce-1 (site 11), 25/08/2018 (1); Couce-3 (site 10), 25/08/2018 (1).

- *Nysius thymi* (Wolff, 1804)

Valongo: Couce-1 (site 11), 25/08/2018 (1).

- *Tropistethus holosericus* (H. Scholz, 1846)

Valongo: Couce-1 (site 11), 24/10/2018 (1).

Family Pentatomidae

- *Eysarcoris ventralis* (Westwood, 1837)

Paredes: Alvre, Santa Comba stream bank (site 3), 25/07/1998 (1, GSC).

- *Graphosoma (Graphosoma) italicum* (O.F. Müller, 1766) ssp. *italicum* s. str.
Valongo: River Simão bank, near Carvoeira (site 19), 03/08/2019 (2, obs.); River Simão bank, south-east of Valongo's City Park (site 22), 23/10/2010 (1, obs.).
- *Palomena prasina* (Linnaeus, 1761)
Valongo: Couce-3 (site 10), 26/03/2019 (1).
- *Piezodorus lituratus* (Fabricius, 1794)
Valongo: Couce-2 (site 9), 24/07/2018 (1), 24/10/2018 (1), 26/03/2019 (1); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (1, obs.).
- *Stagonomus venustissimus* (Schrank, 1776)
Paredes: Alvre, Santa Comba stream bank (site 3), 25/07/1998 (3, GSC).

Family Reduviidae

- *Empicoris rubromaculatus* (Blackburn, 1889)
Valongo: Couce-2 (site 9), 24/07/2018 (1 ♂).
- *Phymata monstrosa* (Fabricius, 1794)
Valongo: Couce-1 (site 11), 28/06/2019 (1).
- *Rhynocoris iracundus* (Poda, 1761)
Valongo: Couce-2 (site 9), 28/06/2019 (1).
- *Sphedanolestes sanguineus* (Fabricius, 1794)
Valongo: Couce-2 (site 9), 29/04/2019 (1).

Family Rhopalidae

- *Corizus hyoscyami* (Linnaeus, 1758) ssp. *hyoscyami* s. str.
Valongo: Ponte do Couce (site 17), 24/07/2018 (1, obs.); River Simão bank, near Carvoeira (site 19), 23/10/2010 (1, obs.).
- *Rhopalus parumpunctatus* Schilling, 1829
Valongo: Couce-1 (site 11), 24/07/2018 (3), 25/08/2018 (1); Couce-2 (site 9), 25/08/2018 (2); Couce-3 (site 10), 25/08/2018 (1), 30/09/2018 (2).
- *Rhopalus rufus* Schilling, 1829
Valongo: Couce-2 (site 9), 25/08/2018 (1).
- *Rhopalus subrufus* (Gmelin, 1790)
Valongo: Couce-1 (site 11), 24/07/2018 (1), 25/08/18 (1); Couce-3 (site 10), 24/12/2018 (2).

Family Scutelleridae

- *Psacasta (Psacasta) exanthematica* (Scopoli, 1763)
Paredes: Alvre, Santa Comba stream bank (site 3), 25/07/1998 (1, GSC).

Family Tingidae

- *Corythucha ciliata* (Say, 1832)
Valongo: Couce-3 (site 10), 30/09/2018 (1), 22/11/2018 (1).

Hymenoptera (2 species)

Family Vespidae

- *Vespa crabro* Linnaeus, 1758
Valongo: Ponte do Couce (site 17), 15/05/2013 (1, obs.); North-eastern limit of Couce village (site 24), 24/07/2018 (1, obs.); Northern limit of Couce village, by the road (site 23), 24/07/2018 (1, obs.).
- *Vespa velutina* Lepeletier, 1836
Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 03/10/2018 (1, obs.).

Lepidoptera (21 species)

Family Geometridae

- *Operophtera brumata* (Linnaeus, 1758)
Valongo: Couce (site 6) (Corley et al., 2018).
- *Pseudopanthera macularia* (Linnaeus, 1758)
Paredes: Alvre, Santa Comba stream bank (site 3), 10/04/1995 (1, GSC).
Valongo: River Simão bank, near Carvoeira (site 19), 24/04/2010 (5, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (1, obs.).
- *Rhodometra sacraria* (Linnaeus, 1767)
Valongo: River Simão bank, near Carvoeira (site 19), 13/09/2020 (1, obs.).

Family Lycaenidae

- *Lycaena tityrus* (Poda, 1761)
Valongo: River Simão bank, near Carvoeira (site 19), 24/04/2010 (1, obs.).

Family Noctuidae

- *Aedia leucomelas* (Linnaeus, 1758)
Valongo: Couce (site 6) (Corley et al., 2019).

Family Nymphalidae

- *Apatura ilia* (Denis & Schiffermüller, 1775)
Valongo: River Simão bank, near Carvoeira (site 19), 03/08/2019 (1, obs.).
- *Charaxes jasius* (Linnaeus, 1767)
Paredes: Alvre, Santa Comba stream bank (site 3), 28/09/1997 (1, obs.).

Valongo: Environmental Interpretation Centre (site 15), 21/06/2013 (1, obs.); River Simão bank, near Carvoeira (site 19), 03/10/2018 (1, obs.).

- *Hipparchia semele* (Linnaeus, 1758)

Valongo: Northern limit of Couce village, by the road (site 23), 03/08/2019 (1, obs.).

- *Issoria lathonia* (Linnaeus, 1758)

Paredes: Alvre, Santa Comba stream bank (site 3), 18/09/1994 (1, GSC).

- *Lasiommata megera* (Linnaeus, 1767)

Valongo: River Simão bank, near Carvoeira (site 19), 05/10/2018 (1, obs.).

- *Maniola jurtina* (Linnaeus, 1758)

Valongo: Northern limit of Couce village, by the road (site 23), 24/07/2018 (1 ♀, obs.).

- *Pararge aegeria* (Linnaeus, 1758)

Valongo: Ponte do Couce (site 17), 24/07/2018 (1, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (3, obs.); River Simão bank, near Carvoeira (site 19), 23/10/2010 (3, obs.), 21/11/2020 (2, obs.).

- *Vanessa atalanta* (Linnaeus, 1758)

Valongo: River Simão bank, near Carvoeira (site 19), 24/04/2010 (2, obs.), 05/10/2018 (1, obs.), 21/11/2020 (1, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (2, obs.).

Family Papilionidae

- *Iphiclides podalirius* (Linnaeus, 1758) ssp. *feisthamelii* (Duponchel, 1832)

Valongo: Ponte do Couce (site 17), 12/07/2018 (1, obs.), 13/09/2020 (1, obs.).

Family Pieridae

- *Colias croceus* (Geoffroy in Fourcroy, 1785)

Valongo: Ponte do Couce (site 17), 12/07/2018 (1, obs.); Near the mouth of river Simão (site 20), 03/08/2019 (1, obs.); River Simão bank, near Carvoeira (site 19), 13/09/2020 (1, obs.).

- *Pieris napi* (Linnaeus, 1758)

Valongo: River Simão bank, near Carvoeira (site 19), 23/10/2010 (1, obs.), 13/09/2020 (1, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (1, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 03/08/2019 (1, obs.).

- *Pieris rapae* (Linnaeus, 1758)

Valongo: River Simão bank, near Carvoeira (site 19), 13/09/2020 (1, obs.); Near the mouth of river Simão (site 20), 05/10/2018 (1, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 21/11/2020 (2, obs.).

- *Pontia daplidice* (Linnaeus, 1758)

Valongo: River Simão bank, between Espinheiro and Azenha (site 18), 05/10/2018 (1 ♂, obs.); River

Simão bank, near Carvoeira (site 19), 13/09/2020 (10, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 05/10/2018 (1 ♀, obs.).

Family Sphingidae

- *Macroglossum stellatarum* (Linnaeus, 1758)

Valongo: Northern limit of Couce village, by the road (site 23), 12/07/2018 (1, obs.).

Family Tineidae

- *Crassicornella agenjoi* Petersen, 1957

Valongo: Couce (site 6) (Corley et al., 2018).

- *Infurcitinea corleyi* Gaedike, 2011

Valongo: Couce (site 6) (Corley et al., 2019).

Mantodea (2 species)

Family Empusidae

- *Empusa pennata* (Thunberg, 1815)

Paredes: Alvre, Santa Comba stream bank (site 3), 02/03/2007 (1, obs.).

Family Mantidae

- *Mantis religiosa* (Linnaeus, 1758)

Valongo: Northern limit of Couce village, by the road (site 23), 05/10/2018 (1 ♀, obs.); River Simão bank, near Carvoeira (site 19), 23/10/2010 (1 ♀, obs.).

Neuroptera (1 species)

Family Myrmeleontidae

- *Distoleon tetragrammicus* (Fabricius, 1798)

Valongo: North-eastern limit of Couce village (site 24), 24/07/2018 (1).

Odonata (16 species)

Family Aeshnidae

- *Aeshna cyanea* (Müller, 1764)

Valongo: Vale de Couce (site 8) (Ferreira et al., 2008).

Family Calopterygidae

- *Calopteryx haemorrhoidalis* (Vander Linden, 1825)

Paredes: Alvre, Santa Comba stream bank (site 3), 18/09/1994 (1, GSC).

Valongo: Ponte do Couce (site 17), 12/07/2018 (1 ♂, obs.), 24/07/2018 (5 ♂♂, obs.); River Simão

bank, near Carvoeira (site 19), 03/08/2019 (2, obs.), 13/09/2020 (2 ♂♂, 1 ♀, obs.); Near the mouth of river Simão (site 20), 03/08/2019 (1, obs.); Vale de Couce (site 8) (Ferreira *et al.*, 2008); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 03/08/2019 (1, obs.).

Family Coenagrionidae

- *Ceriagrion tenellum* (Villers, 1789)
Valongo: Vale de Couce (site 8) (Ferreira *et al.*, 2008); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 03/08/2019 (1, obs.).
- *Ischnura graellsii* (Rambur, 1842)
Valongo: Vale de Couce (site 8) (Ferreira *et al.*, 2008).
- *Pyrrhosoma nymphula* (Sulzer, 1776)
Valongo: River Simão bank, near Carvoeira (site 19), 24/04/2010 (2, obs.); River Simão bank, between Espinheiro and Azenha (site 18), 24/04/2010 (3, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 24/04/2010 (1, obs.).

Family Corduliidae

- *Oxygastra curtisii* (Dale, 1834)
Valongo: Vale de Couce (site 8) (Ferreira *et al.*, 2008; Ferreira, 2009).

Family Gomphidae

- *Gomphus graslinii* Rambur, 1842
Valongo: Vale de Couce (site 8) (Ferreira, 2009).
- *Gomphus pulchellus* Selys, 1840
Paredes: Alvre, Santa Comba stream bank (site 3) (Ferreira *et al.*, 2005).
- *Onychogomphus forcipatus* (Linnaeus, 1758) ssp. *unguiculatus* Vander Linden, 1823
Valongo: River Simão bank, near Carvoeira (site 19), 13/09/2020 (1 ♂, obs.); Vale de Couce (site 8) (Ferreira *et al.*, 2008).
- *Onychogomphus uncatus* (Charpentier, 1840)
Valongo: Vale de Couce (site 8) (Ferreira *et al.*, 2008).

Family Lestidae

- *Lestes viridis* (Vander Linden, 1825)
Valongo: Vale de Couce (site 8) (Ferreira *et al.*, 2008).

Family Libellulidae

- *Orthetrum coerulescens* (Fabricius, 1798)
Valongo: River Simão bank, near Carvoeira (site 19): 13/09/2020 (1 ♂, obs.); Vale de Couce (site 8) (Ferreira *et al.*, 2008).

- *Trithemis annulata* (Palisot de Beauvois, 1807)
Valongo: Vale de Couce (site 8) (Ferreira et al., 2008).

Family Macromiidae

- *Macromia splendens* (Pictet, 1843)
Valongo: Couce (site 13) (Maravalhas et al., 2011); Vale de Couce (site 8) (Ferreira, 2009).

Family Platycnemididae

- *Platycnemis latipes* Rambur, 1842
Valongo: Vale de Couce (site 8) (Ferreira et al., 2008).
- *Platycnemis acutipennis* Selys, 1841
Valongo: Vale de Couce (site 8) (Ferreira et al., 2008).

Orthoptera (3 species)

Family Acrididae

- *Anacridium aegyptium* (Linnaeus, 1764)
Valongo: Northern limit of Couce village, by the road (site 23), 12/07/2018 (1, obs.); River Simão bank, near Carvoeira (site 19), 23/10/2010 (1, obs.); Near the mouth of river Simão (site 20), 24/04/2010 (1, obs.); Valongo-Couce road, between the mouth of river Simão and Couce (site 21), 03/08/2019 (1, obs.).

Family Gryllidae

- *Gryllus campestris* Linnaeus, 1758
Paredes: Alvre, Santa Comba stream bank (site 3), 24/09/1995 (1, GSC).
- *Nemobius sylvestris* (Bosc, 1792)
Valongo: Ponte do Couce (site 17), 15/02/2019 (1 ♂, obs.).