

# Notes and recent observations concerning *Borbo borbonica* (Lepidoptera: HesperIIDae) in Andalucía (Spain)

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**Abstract.** *Borbo borbonica* (Boisduval, 1833) is reported, for the second time and in a new locality, from the province of Málaga. An important extension to the range of *B. borbonica* in the province of Cádiz is also provided. Localities visited during directed field surveys but where *B. borbonica* was absent are also documented. A new nectar plant, *Dittrichia viscosa* (Asteraceae), is documented and figured. It may be possible that *B. borbonica* is rapidly expanding its range but it cannot be precluded that it has been overlooked in the past. To have a better understanding of the population dynamics of this species, monitoring during coming years and in larger parts of Andalucía is needed.

**Samenvatting.** *Borbo borbonica* (Boisduval, 1833) wordt, voor de tweede keer en van een nieuwe plaats, gemeld uit de provincie Málaga. Ook een belangrijke uitbreiding van het verspreidingsgebied van *B. borbonica* in de provincie Cádiz wordt beschreven. Er wordt tevens aandacht geschonken aan plaatsen waar *B. borbonica* niet gezien werd ondanks gericht veldonderzoek. Een nieuwe nectarplant, *Dittrichia viscosa* (Asteraceae), wordt gedocumenteerd en afgebeeld. Het is mogelijk dat *B. borbonica* zich heel snel aan het verspreiden is maar het valt niet uit te sluiten dat de soort in het verleden over het hoofd werd gezien. Om een beter inzicht te krijgen over de populatiedynamiek van de soort, is nauwgezette opvolging in de komende jaren en over grotere delen van Andalusië nodig.

**Résumé.** *Borbo borbonica* (Boisduval, 1833) est mentionné pour la deuxième fois dans la province de Málaga, dans une nouvelle localité. Une expansion importante de la zone de distribution de *B. borbonica* dans la province de Cádiz est également décrite. Une attention particulière a été portée aux localités où *B. borbonica* n'a pas été observé jusqu'ici, malgré des recherches ciblées. Une nouvelle " plante nectar ", *Dittrichia viscosa* (Asteraceae), est signalée et illustrée. Il est possible que *B. borbonica* élargisse rapidement son aire de distribution mais probablement l'espèce a-t-elle également mal recherchée par le passé. Pour mieux comprendre la dynamique des populations, un suivi méticuleux dans les années futures et dans une partie plus large de l'Andalousie est nécessaire.

**Key words:** HesperIIDae – *Borbo borbonica* – Andalucía – Cádiz – Málaga – Spain – distribution – habitat – faunistics

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## Introduction

Until recently, very little was known concerning the Spanish distribution and biology of *Borbo borbonica* (Boisduval, 1833), Zeller's Skipper, making this large and fast-flying Skipper one of the most enigmatic butterflies of the Iberian Peninsula.

The first note on its occurrence in Spain (Gibbs 1913) concerns observations from June–July 1899 near the railway station of Algeciras. Later, during the months of August and September of the same year and also in subsequent years, Gibbs found *B. borbonica* abundantly on the right bank of the Rio Miele near Algeciras. Oberthür (1914) also mentions Gibraltar and many years later Manley & Allcard (1970) mention that different specimens were seen in the gardens of the hotel Reina Cristina at Algeciras from 24<sup>th</sup> to 26<sup>th</sup> of October 1920.

De Viedma (1976) confirms that it is a very rare butterfly cited from Algeciras, La Linea de la Concepción, Gibraltar and recently from Amposta (Tarragona) in the Ebro Delta. Mateo Lozano (1997) adds two localities in the Algeciras area: Los Barrios and Pinar del Rey. In the Atlas de las mariposas diurnas de la Península Ibérica e isles Baleares (Monografías S.E.A. 2004) the observations from the bay of Algeciras, Gibraltar and the Ebro delta are confirmed and two new places in Catalonia are added: Roda de Bará in the province of Tarragona (Meliá

1976) and Vall de Llorá in the province of Gerona (Pérez De-Gregorio 1976).

Barea-Azcón *et al.* (2008) state that in Andalucía there is, up to the date of their publication, a single stable population near Los Barrios of less than 150 specimens and that the population in the Ebro delta is almost extinct.

In 2011, new localities in the province of Cádiz were discovered (Farino 2011) near Benalup and Barbate. Later she reports no less than four separate colonies of Zeller's Skipper in Cádiz (Farino 2014).

In Fauna Ibérica (2013) all observations from Catalonia are attributed to wrong determinations of *Gegenes nostradamus* (Fabricius, 1793).

Recently Muñoz Sario (2013) studied in detail the biology, ecology and distribution of *B. borbonica* in the Cádiz province.

Underlining the vagrant behaviour of *B. borbonica* is the observation and photograph (Moreno-Benítez 2013) from 21.x.2013 of a single specimen feeding on *Lantana camara* in the gardens of the university campus of Málaga, 100 km NE of the nearest known localities in the province of Cádiz. This is the first record for the province of Málaga.

Mølgaard (2014) also confirms the occurrence of *B. borbonica* in different localities along the Barbate river nearby Benalup and states that the species is very common, an unusual feature of most HesperIIDae.

The purpose of this article is therefore to improve the knowledge on the distribution of *B. borbonica* in Andalucía.

## Abbreviations

B: Belgium  
Dk: Denmark  
MM: Morten Schneider Mølgaard  
MR: Matt Rowlings  
MT: Michel Taymans  
SC: Sylvain Cuvelier  
TF: Torben Friis-Larsen



Fig. 1 – *Borbo borbonica*, Puerto Banùs, 03.x.2014 (Photo: MR).

Fig. 2 – Habitat of *Borbo borbonica*, Barbate River near Benalup, 05.x.2014 (Photo: SC).

Fig. 3 – *Borbo borbonica* on *Bougainvillea*, Cortijo de los Monteros, 03.x.2014 (Photo: MR).

Fig. 4– Habitat of *Borbo borbonica*, Barbate River near Vejer de la Frontera, 05.x.2014 (Photo: SC).

Fig. 5– *Dittrichia viscosa*, nectar plant of *Borbo borbonica*, NE Vejer de la Frontera, 04.x.2014 (Photo: SC).

Fig. 6– *Borbo borbonica* feeding on *Dittrichia viscosa*, Libreros 02.x.2014 (Photo: SC).

## Methods

From 30.ix.2014 to 05.x.2014, SC surveyed different localities in the province of Cádiz and recorded coordinates with a Garmin eTrex 30. The presence or absence of *B. borbonica* was documented. From 03.x.2014 to 07.x.2014, MR independently surveyed different localities in the provinces of Málaga and Cádiz. Coordinates were extrapolated from Google Earth. The presence or absence of *B. borbonica* was documented. Google Earth (decimal degrees) was used for producing the distribution map (Fig. 7). Coordinates from all literature references in Fig. 7 are best estimates made by the authors. The authors' observations were pooled with recent observations received from Morten Mølgaard (Dk), Torben Friis-Larsen (Dk) and Michel Taymans (B).

The skipper could usually be easily observed as it repeatedly returned to the same location either for nectar or to defend a territory. Collecting, by SC, with an insect net was authorized by the Junta de Andalucía, Consejería de Medio Ambiente y Ordenación del Territorio. MR did not use a net.

## Observations

All available published data and the recent observations from the authors and information given by colleagues are included in a map (Fig. 7). Details on each locality are included in Table 1. Each recent observation from both authors and colleagues includes comments about the type of habitat and potential status in the locality.





Fig. 7— Distribution of *Borbo borbonica* in Andalucía.

📌 – records of *B. borbonica* from available literature;  
📍 – new records of *B. borbonica* (this paper).

Adapted from Google Earth (decimal degrees) by SC.

### Málaga

– Puerto Banús: 3 specimens on 03.x.2014 and 4 specimens on 07.x.2014. Standing water was present at the time of these observations. However the area is dry during the summer which may indicate that this location is not able to support a stable population. This is the second locality, known to us, in the province of Málaga where *B. borbonica* has been found (Fig. 1) and this confirms the 2013 observation (Moreno-Benítez 2013). Obs.: MR.

### Cádiz

– Benalup: observations along the Barbate river (Figs. 2; 9–12) over a distance of 2 km. The species is locally very common. Strong populations are present. Obs.: SC, MR, MSM.

– Hotel Cortijo de Los Monteros: several specimens were observed in a shady lawn but also nectaring on different ornamental flowers (Fig. 15) and *Lantana* sp. in the terraces, on *Bougainvillea* along the walls of the reception (Fig. 3) and 1 specimen was found in a dry area behind the hotel in 2013. A nearby population is suspected to exist. Obs.: SC, MR, MSM.

– Laguna de la Janda: *B. borbonica* was observed over 6 km always near canals, cotton or rice fields. The species was locally very common even in cloudy and very windy conditions. Butterflies were attracted to *Ecballium elaterium* (Fig. 14) for feeding and territorial behavior. Obs.: SC, MT.

– S of Manzanete: in unfavourable weather conditions, 2 specimens were seen not far from the Marismas del Barbate. Probably windswept vagrants coming from a nearby population. Obs.: SC.

– Vejer de la Frontera, El Paso hotel garden. 10–15 specimens. Obs.: TF.

– N of Vejer de la Frontera: a strong population was present along the Barbate river (Fig. 4). Obs.: SC.

– Cañada Ancha: a single specimen on a waste ground in the village, probably a vagrant. Obs.: MT.

– 2 km SW of Libreros: a strong population in meadows nearby the Barbate river. Obs.: SC.

– 3 km W of Tahivilla: a single specimen on a track to the wind turbines, nearest potential habitat at 3.5 km. Obs.: MT.

– 8 km NW Tahivilla: common (Fig. 8) on the canals at the east of la Janda. Obs.: MR.

– 3 km SE Tahivilla: common in a small habitat along the Rio Almodóvar (Fig. 13). Obs.: SC.

– 4 km NW Pedro Valiente: a single specimen. No potential habitat was found in the vicinity. Probably a vagrant. Obs.: SC.

– La Peña, 7 km NW of Tarifa: 2 specimens. Probably vagrants as no potential habitat was found nearby. Obs.: MR.

– N of Algeciras nearby the Rio Palmones: 2 specimens on 3.x.2014. *B. borbonica* was not observed during 2 subsequent visits. These were probably windswept specimens from nearby potential habitats. Obs.: SC.

– Gibraltar: 2 specimens at the north of the territory, no likely breeding habitat present in that area. Obs.: MR.

Different nectar plants have already been mentioned by Muñoz Sario (2013) and Mølgaard (2014). We add another important nectar source for *B. borbonica* in Andalucía: *Dittrichia viscosa* (Asteraceae). Its yellow flowers (Fig. 5) were the most important nectar source of *B. borbonica* near Vejer de la Frontera (Fig. 6) and NW of Tahivilla (Fig. 8). *B. borbonica* was found feeding on this plant in many other places.

Despite directed searches, *B. borbonica* was not observed in the following localities:

– Along the Arroyo del Aciscar (E of Tahivilla). Habitat seemed unsuitable. (SC).

– El Cobre along Rio de la Miel. Habitat seemed unsuitable. (SC).

– Just S of Los Barrios along Rio de las Cañas O Palmones. Potentially suitable habitat was not accessible. (SC).

– Wastelands to the north of La Linea de la Concepción. Habitat seemed unsuitable. (MR).

– Sierras E of Benalup, E of Tahivilla and E of Facinas. Habitat seemed unsuitable. (MR).

– Coastal areas S of Cádiz. Habitat seemed unsuitable. (MR).

– Pelayo, E of Tarifa, and southwards towards the coast. Habitat seemed unsuitable. (MR).

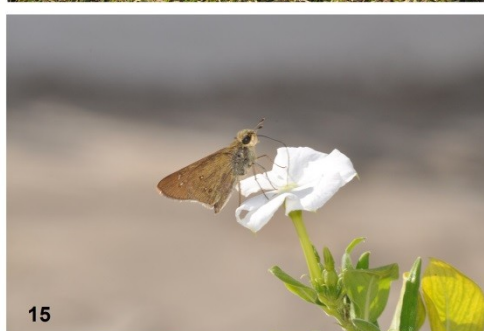
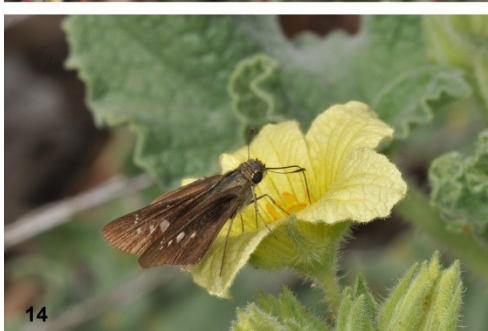
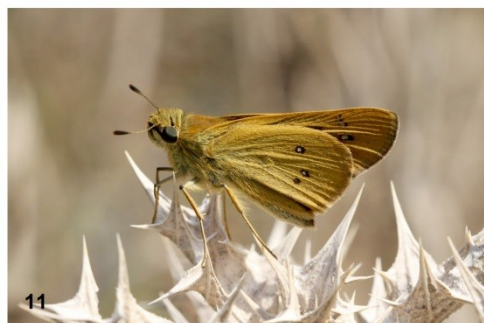
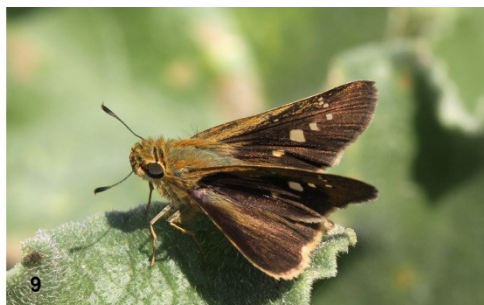


Fig. 8 – Habitat of *Borbo borbonica*, 8 km NW of Tahivilla, 05.x.2014 (Photo: MR).

Fig. 9 – *Borbo borbonica*, Benalup, 05.x.2014 (Photo: MR).

Fig. 10 – *Borbo borbonica* feeding on *Dittrichia viscosa*, Benalup, 05.x.2014 (Photo: MR).

Fig. 11 – *Borbo borbonica*, Benalup, 5.x.2014 (Photo: MR).

Fig. 12 – Copula of *Borbo borbonica*, Benalup, 04.x.2014 (Photo: MR).

Fig. 13 – Habitat of *Borbo borbonica*, Rio Almodóvar, 05.x.2014 (Photo: SC).

Fig. 14 – *Borbo borbonica* feeding on *Echallium elaterium*, Laguna de la Janda, 01.x.2014 (Photo: SC).

Fig. 15 *Borbo borbonica* feeding in a hotel garden, Cortijo de los Monteros, Benalup, 30.ix.2014 (Photo: SC).

Despite the timing of the visit late in the year, the authors observed many other species flying in sympatry with *B. borbonica*, often in low numbers: *Papilio machaon* (Linnaeus, 1758), *Pieris rapae* (Linnaeus, 1758), *Colias croceus* (Fourcroy, 1785), *Gonepteryx rhamni* (Linnaeus, 1758), *Vanessa atalanta* (Linnaeus, 1758), *Vanessa cardui* (Linnaeus, 1758), *Danaus plexippus* (Linnaeus, 1758), *Lasiommata megera* (Linnaeus, 1767), *Pararge aegeria* (Linnaeus, 1758), aestivated *Maniola jurtina* (Linnaeus, 1758) females, *Lycaena phlaeas* (Linnaeus, 1761), *Lampides boeticus* (Linnaeus, 1767), *Leptotes pirithous* (Linnaeus, 1767), *Zizeeria knysna* (Trimen, 1862), *Cacyreus marshalli* (Butler, 1898), *Aricia cramera* (Eschscholtz, 1821), *Celastrina argiolus* (Linnaeus, 1758), *Polymmatas celina* (Austaut, 1879), *Pyrgus onopordi* (Rambur, 1839), *Carcharodus baeticus* (Rambur, 1839), *Carcharodus tripolina* (Vérity, 1925), *Gegenes nostradamus* (Fabricius, 1793). A few, day active

moths are also documented (oral comm. MT): *Utetheisa pulchella* (Linnaeus, 1758), *Rhodometra sacraria* (Linnaeus, 1767) and *Spoladea recurvalis* (Fabricius, 1775).

## Conclusion

After the first observation of a single specimen in the city of Málaga (Moreno-Benítez 2013), this is the second time that *B. borbonica* is documented for this province. In two days, 7 specimens were found west of Marbella. Exploration of potential habitats in the province of Málaga seems mandatory and might well document the easternmost distributional range in Andalucía.

We also document an important extension to the published distribution of *B. borbonica* in the Spanish



province of Cádiz, from east of Cádiz city to Algeciras and Gibraltar.

To the west, lowland river valleys from the southeast of Cádiz city to the city of Huelva should be explored since they have potential for more populations of *B. borbonica*.

The species is locally very common in the third generation, on the wing from September to October.

Optimal habitats are found in pockets along river banks with slow flowing or standing water with open grassy vegetation and an abundance of nectar plants. *B. borbonica* is mobile and can be found far from these typical habitats. Hotel gardens have attraction due to the presence of fresh nectar plants that are rare in Andalusian nature during this period of the year.

*Dittrichia viscosa* (Asteraceae) is locally an important nectar plant for the third generation butterflies because at this time of year *Lythrum salicaria* is no longer fresh or in flower and *Echallium elaterium* is at low density or absent. It should be noted that *D. viscosa* is not confined to the habitat of *B. borbonica*. It is common throughout the region and may facilitate the dispersion of the skipper.

Given the current findings, it is possible that *B. borbonica* is rapidly expanding its range, but also it cannot be precluded that it has been overlooked in the past, since such biotopes are not often visited by lepidopterists at the optimal time of year. It is tempting nowadays to attribute such phenomena to climate change but it might well be nothing more than a reflection of insufficient historical data. This example underlines the importance of monitoring as a tool of assessing the population dynamics and the conservation status of species.

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Table 1 — New, previously unpublished localities with records of *B. borbonica*.

Locality	Dates	Alt (m)	Lat. N (dec. deg)	Lat. W (dec. deg)	Province	Leg.
Puerto Banús	3.x.2014 7.x.2014	45	36.30N	4.59W	Málaga	MR
Benalup Rio Barbate 1	9–12.x.2013 30.ix.2014 5.x.2014	10–11	36.31N	5.80W	Cádiz	MM, MR, SC
Benalup Rio Barbate 2	9–12.x.2013	10	36.31N	5.81W	Cádiz	MM
Benalup Rio Barbate 3	9–12.x.2013		36.30N	5.81W	Cádiz	MM
Benalup Cortijo de Los Monteros	9–12.x.2013 30.x.2014 4.x.2014	95	36.35N	5.85W	Cádiz	MM, MR, SC
Laguna de la Janda 1	1.x.2014	4	36.25N	5.82W	Cádiz	SC
Laguna de la Janda 2	1.x.2014 20.x.2014 21.x.2014	4	36.24N	5.83W	Cádiz	MT, SC
Laguna de la Janda 3	1.x.2014 20.x.2014 21.x.2014	9	36.22N	5.87W	Cádiz	MT, SC
S Manzanete	1.x.2014	24	36.21N	5.89W	Cádiz	SC
Cañada Ancha	21.x.2014	7	36.26N	5.96W	Cádiz	MT
Vejer de la Frontera	2.x.2014	6	36.25N	5.90W	Cádiz	TF
N Vejer de la Frontera	1.x.2014 2.x.2014 3.x.2014 4.x.2014	5–9	36.26N	5.95W	Cádiz	SC
Libreros	2.x.2014	7	36.26N	5.93W	Cádiz	SC
8 km NW Tahivilla	5.x.2014	30	36.13N	5.47W	Cádiz	MR
3 km W Tahivilla	21.x.2014	42	36.19N	5.79W	Cádiz	MT
3 km SE Tahivilla, Rio Almodóvar	5.x.2014	12	36.17N	5.72W	Cádiz	SC
NW Pedro Valiente	5.x.2014	10	36.07N	5.63W	Cádiz	SC
Algeciras, Parque municipal de Torrejo	3.x.2014	2	36.16N	5.44W	Cádiz	SC
7 km NW of Tarifa	5.x.2014	2	36.02N	5.39W	Cádiz	MR
N Gibraltar	6.x.2014	2	36.08N	5.21W	Cádiz	MR

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