

Odonata from the Iberian Peninsula with a description of *Calopteryx haemorrhoidalis almogravensis* ssp. n. from Portugal

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23 spp. from Portugal and Spain are recorded. The findings are based on material collected between 1979 and 1990, but mainly on a journey in September 1980. A new subspecies of *Calopteryx haemorrhoidalis* (Vander L.) is described and discussed in the context of other Iberian ssp. Some remarks are also made concerning *Anax parthenope geyri* Buchholz and *Diplacodes lefebvrei* (Ramb.).

Introduction

In September 1980 I travelled through Spain and Portugal, observing and collecting Odonata (cf. HARTUNG, 1985, 1993). The year before I had made a few observations of dragonflies in Ibiza. This paper describes material from 23 localities, deposited in my collection. Some specimens were contributed by my friends Torsten Möhlmann (M) of Berlin, Reinhard Ehrmann (E) of Goch, and Rüdiger Prasse (P), Michael Ristow (R) and Michael Woelky (W) all of Berlin.

List of localities

Portugal

1. Beja distr., Odemira, Barragem de Santa Clara (18.IX.1980)
2. Beja distr., Odemira, Almogrove, little stream near coast, with dense vegetation (20.IX.1980)
3. Beja distr., Odemira, Villa Nova de Milfontes, north of Rio Mira (19.IX.1980)
4. Beja distr., Odemira, N of Rio Mira, parched dip in heathland, ca. 800m from coast (15.IX.1980)

Spain

5. Alicante prov., Denia, Río Racons (01.IX.1980)
6. Alicante prov., N of Denia, stream (01.IX.1980)
7. Córdoba prov., Córdoba, on a concrete ditch in the city (23.IX.1980)
8. Granada prov., Parque de Cubillas, Río Cubillas (02.IX.1980)
9. Huelva prov., El Rocío (26.V.1986)
10. Huelva prov., Matalascañas (26.V.1986)
11. Huelva prov., Mazagón (25.V.1986)
12. Huelva prov., Mazagón, Laguna de las Madres (several dates 1980 and 1986)
13. Huelva prov., Mazagón, Parador (11.IX.1980)
14. Huelva prov., Roquetes de Mar (25.V.1990)
15. Baleares prov., Ibiza, Sta. Eulalia, pool in the parched river-bed of the Río Sta. Eulalia (14.IV.1979)
16. Baleares prov., Mallorca (V.1985)
17. Baleares prov., Mallorca, Albucaira (14.V.1985)

18. Baleares prov., Mallorca, Cala d'Or (9.V.1985)
19. Baleares prov., Mallorca, Can Pastilla (VII.1983)
20. Baleares prov., Menorca (IX.1979)
21. Sevilla prov., Aguadulce, Río Blanco (4.IX.1980)
22. Tarragona prov., near Altea, Río Ebro (31.VIII.1980)
23. Girona prov., Vidreres, Duig Ventos (1.-26.VI.1987)

Annotated list of species¹

1. *Calopteryx haemorrhoidalis almogravensis* ssp. nov.

Portugal, Odemira (loc. 2, 10.IX.1980: 4 m, 3 f)

Measurements: (male) hind wing 25.3 ± 0.8 , abdomen: 32.4 ± 1.3 ; (female) hind wing: 26.7 ± 0.2 , abdomen: 31.7 ± 0.2

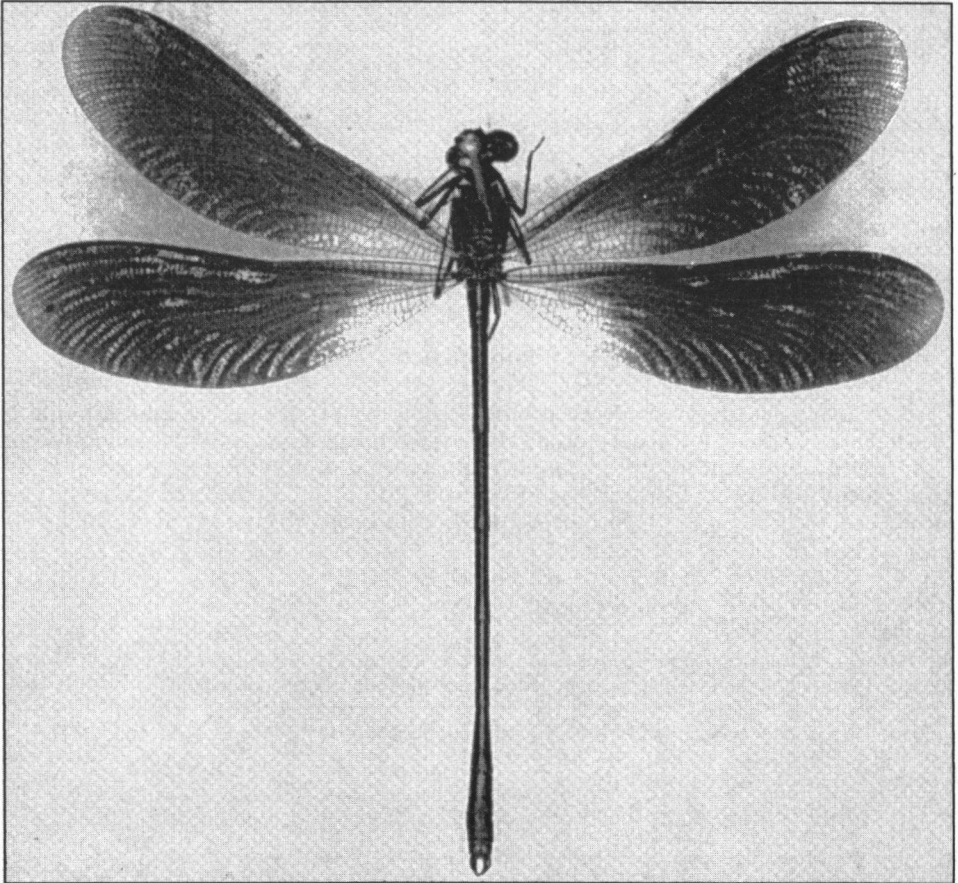


Fig. 1: *Calopteryx haemorrhoidalis almogravensis* ssp. n., holotype from Almogrove, Odemira, Beja distr., Portugal, 20.IX.1980, leg. M. Hartung.

¹ In the following text: m = male; f = female; wing length is measured from the most proximal hyaline area (anal sector) to the apex of the hind wing; all measurements are taken from dried specimens and given in mm.

The specimens collected at Almogrove are all very small.

MALES. - The apical part of the fore wings are more brownish hyaline than the central part which is dark brown. This pale zone starts 5.7 ± 0.15 mm from the distal end of the fore wings in all four males (two juveniles, two adults). In all four, the apical border in the posterior half of this zone is fully hyaline for 1-2 mm. The hyaline zone resembles that of the ssp. *occasi* Capra (cf. AGUESSE, 1968). The hind wings of the Almogrove specimens are very narrow, the ratio of length : width being 3.20 ± 0.08 ($n = 7$ wings).

FEMALES. - All three specimens have a whitish pterostigma, and the apical quarter of the hind wings is more brownish, similar to the nominate subspecies and to *occasi*. One adult female has weak brownish apical spots in the fore wings in addition to the hind wing apical spot, which is similar in size to the apical zone in the fore wing of the males. The body colour is dark green, with a slight tendency to metallic bronze.

The population of Almogrove was found at an altitude of 5-15 m at a little stream which was running straight down to the shore, where a little waterfall marked its end at an estuary in the Atlantic Ocean.

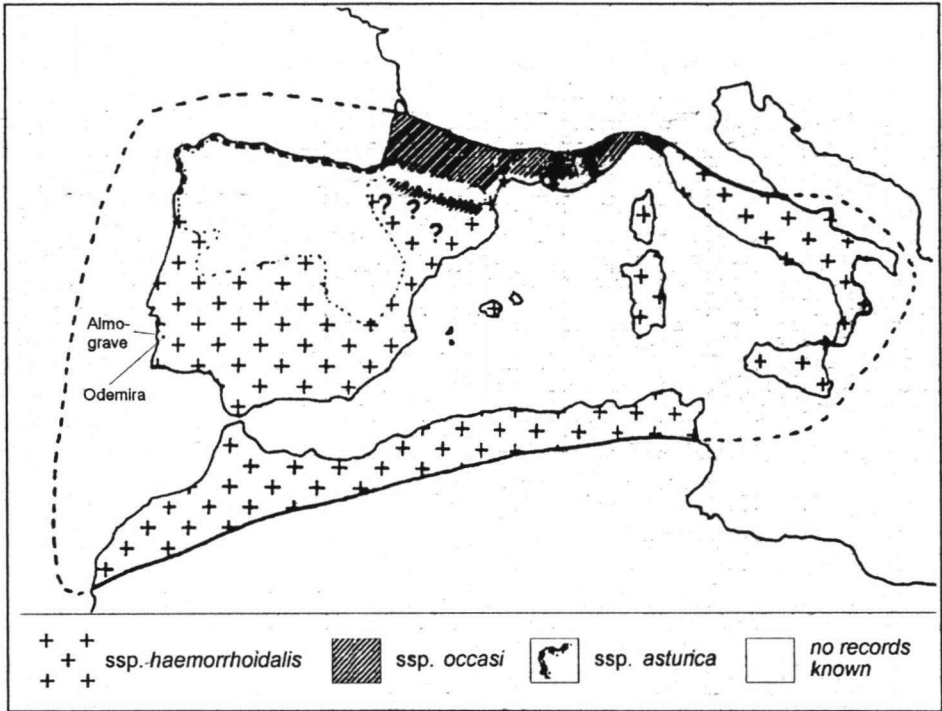


Fig. 2: Distribution of *Calopteryx haemorrhoidalis* ssp. in SW Europe and NW Africa; map after OCHARAN LARONDO (1987), modified. Almogrove/Odemira, Beja distr., is the locus typicus of *almogravensis* ssp. n.

DISCUSSION. -According to NAVAS (1924), the length of the hind wing of Iberian *Calopteryx haemorrhoidalis* ranges from 25 to 33 mm and the abdominal length from 35 to 42 mm, so the Almogrove population represent the minimal recorded size of this species. It should be noted that the abdomens of the two juvenile males are shortened due to drying.

LIEFTINCK (1966) has separated *ssp. haemorrhoidalis* from *ssp. occasi* in Spain, using material from the Leiden Museum: the former 'near Cadiz (Sevilla)' and 'Montilla (Andalusia)';

the latter 'Jacca (Aragon) in northern Spain' and an intermediate form 'Tortosa (Catalonia)'. HEYMER (1964) mentioned the subspecies *occasi* also from the province of Girona (Río Terri). In contrast, JURZITZA (1965) has only found typical *haemorrhoidalis* in this region (Río Llobregat).

OCHARAN (1983) has described a new ssp. *asturica* from the Atlantic coast of northern Spain. Typical for *asturica* is the extension of the hyaline areas: the basal parts, the apical third and a small band along the posterior borders of the front wings are predominantly hyaline. The hind wings show a similarly pattern, but the dark areas are more extended, so the apical hyaline remains only as a quarter of the wings. OCHARAN LARONDO (1987) listed an average hind wing length of 27.56 mm and abdominal length of 35.65 mm for the males; and 28.78 mm and 33.67 mm respectively for the females. He found ssp. *asturica* in habitats close to the Atlantic shore line. At the foothills of the Pyrenees there is a contact with ssp. *occasi*, which occurs in Spain only in a small area south of the Pyrenees (Fig. 2). His map also shows the range of the nominate subspecies in Portugal and large parts of southern Spain.

The findings of the Almogrove form which most resembles *occasi* is therefore a surprise. Why should such a population look like *occasi*? Some questions arise.

Is *asturica* a well defined subspecies? May *occasi* be found south of the area of *asturica*, down to Portugal in the Western Iberian Peninsula? An analysis of material from regions south of the *asturica* range may provide an answer, but there are at present no records from a huge area in the northern part of the Iberian Peninsula (fig. 2).

On the other hand, there may be an infraspecific variability of *C. haemorrhoidalis*, as MAIBACH (1987) has proposed, e.g. depending on the humid climate of the northern and Atlantic regions. According to this theory, *asturica* could be regarded as an extreme variety in wing colour reduction, and the Almogrove series may be analogous to the French and Italian populations. But these are not arguments against the assumption of a subspecific separation.

Influences of the local climate may also be considered responsible for the separation of a subspecies in the Atlantic regions of Portugal. The Iberian mountains may function as a barrier to the distribution of the different subspecies of *C. haemorrhoidalis*.

Further specimens have been found by Peter Jahn, Berlin, in southern Portugal which resemble my series in size and colouration (pers. comm.). I therefore propose that the population of Almogrove represents a new subspecies with a Portuguese distribution. The new name *almogrovensis* is an adjective derived from the type locality. The male No. 34/80 is designated to be the holotype, the female No. 35/80 is the allotype, to be deposited in the Naturkundemuseum Berlin.

2. *Lestes barbarus* (Fabricius)

Spain, Vidreras-Gerona (loc. 23, VI.1987, (W): 1 m)

3. *Lestes virens virens* (Charpentier)

Portugal, Odemira (loc. 4, IX. 1980: 3 m, 1 f); Spain, Huelva (loc. 9, IX.1984, (P): 2 m; V.1986, (M): 1 m, 1 f; loc. 10, V.1986, (M): 1 m; loc. 12, V.1986, (M): 1 f)

This form of *Lestes virens* from Portugal and South Spain with bicoloured pterostigmas is the real type subspecies of *Lestes virens* (HARTUNG, 1993). It is different from the Mediterranean taxon of *L. virens*, which is deemed to be the nominotypic subspecies and therefore must be renamed (HARTUNG, in prep).

4. *Platycnemis latipes* Rambur

Spain, Sevilla (loc. 21, IX.1980: 1 m, 1 f), Tarragona (loc. 22, VIII.1980: 2 m, 1 f)

5. *Ischnura elegans* (Vander Linden)

Spain, Tarragona (loc. 22, VIII.1980: 1 m, 2 f), Alicante (loc. 5, IX.1980: 1 m, 2 f; loc. 6, IX.1980: 1 m, 1 f), Ibiza (loc. 15, IV. 1979: 2 f), Mallorca (loc. 17, V.1985, (M): 1 m)

6. *Ischnura graellsii* (Rambur)

Spain, Granada (loc. 8, IX.1980: 2 m, 1 f), Sevilla (loc. 21, IX.1980: 1 m, 1 f), Huelva (loc. 12, IX.1980: 1 m, 1 f, V.1986, (M): 1 f, loc. 14, VI.1990, (M): 1 m)

7. *Erythromma viridulum* (Charpentier)

Spain, Huelva (loc 12, IX.1980: 1 m; loc 14, V.1990, (M): 1 m, 1 f)

8. *Cercion lindenii* (Selys)

Portugal, Odemira (loc. 1, IX.1980: 1 m); Spain, Sevilla (loc. 21, IX.1980: 1 m), Tarragona (loc. 22, VIII.1980: 2 m, 1 f)

9. *Ceriagrion tenellum* (de Villers)

Spain, Huelva (loc 9, V.1986: 1 f, loc. 12, V.1986, (M): 1 f)

10. *Anax imperator* Leach

Portugal, Odemira (loc. 3, IX.1980: 1 m); Spain, Huelva (loc. 14, VI.1990 (M): 1 exuvia)

11. *Anax parthenope geyri* Buchholz

Portugal, Odemira (loc. 1, IX.1980: 1 f); Spain, Alicante (loc. 6, IX.1980: 1 m)

Measurements: (male) abdomen: 50.8, appendices: 5.0 hind wing: 49.7; (female) abdomen: 47.0, appendices: 4.5, hind wing: 50.0

The male is very large (e.g. S1-3: 15.8 mm). The shapes of S1 and S2 are similar to BUCHHOLZ's fig. 10, and also the penis in ventral view and the inferior appendage are representing ssp. *geyri*, but the superior appendages are much longer and the end-lobes show only little differences from ssp. *parthenope* (BUCHHOLZ, 1955: fig. 1, 6; AGUESSE, 1968: fig. 75).

12. *Orthetrum cancellatum* (L.)

Spain, Huelva (loc. 12, IX.1980: 1 m; loc. 14, VI.1980, (M): 1 m exuvia), Mallorca (loc. 19, VII.1983, (W):1 f)

13. *Orthetrum chrysostigma* (Burmeister)

Portugal, Odemira (loc. 3, IX.1980: 1 m, 1 f)

14. *Orthetrum coerulescens* (Fabricius)

Portugal, Odemira (loc. 1, IX.1980: 2 m, 1 f); Spain, Huelva (loc. 12, IX.1980: 1 f)

15. *Orthetrum nitidinerve* (Selys)

Spain, Cordoba (loc. 7, IX.1980: 1 f)

The female was sitting on a concrete wall of a dry ditch on the outskirts of Cordoba.

16. *Orthetrum trinacria* (Selys)

Spain, Huelva (loc. 12, 10.IX.1980: 1 m)

This was the first record for the Iberian Peninsula, predating records from Badajoz in 1981 and from Huelva in 1983 (HARTUNG, 1985). BELLE (1984) has described his observations from Huelva in June 1983. This species has since been more often seen in Spain (CONESA GARCIA, 1985; OCHARAN LARONDO, 1987; GARCÍA-PARRÓN & BENITEZ-DONOSO, 1988; BENITEZ-DONOSO & GARCÍA-PARRÓN, 1989).

17. *Diplacodes lefebvrei* (Rambur)

Spain, Huelva (loc. 12, IX.1980: 4 m, 4 f)

Measurements: (male) hind wing: 22.7 ± 0.6 , pterostigma: 3.0 ± 0.2 mm; (female) hind wing: 21.8 ± 0.2 , pt.: 2.8 ± 0.1

According to PINHEY (1961), the hind wing length of specimens from eastern Africa range from 24 to 29 mm, though I have a small female from Mombasa, Kenya, with a hind wing length of 22.0 mm. The European specimens of this African species seem to be very small, my specimens being in the range given by NAVAS (1924) for Spain, from 22 to 24 mm.

An old male has, in addition to the basal blackish mark, a diffuse light brownish colouration of all wings from PN 2-3 to the apex. According to PINHEY (1961), Mauritanian specimens are 'more consistent in the presence of a brown apical patch' than the continental African forms. Concerning this fact, the specimens from Huelva may be closely related to the north-western African specimens.

At the Laguna de las Madres several males were sitting on the parched shore. Each male was defending a little territory with a diameter of about 2 m against the other neighbouring males. Often the males would fly in a circle around their resting point in the centre of their territory. During these actions *D. lefebvrei* flew in a height not more than 30 cm, where it was difficult to observe, because of its swift flight and the fact that the dark background of the territories matched its dark colours.

18. *Crocothemis erythraea* (Brulle)

Portugal, Odemira (loc. 1, IX.1980: 1 f); Spain, Alicante (loc. 6, IX.1980: 1 m), Huelva (loc. 12, IX.1980: 1 f; loc. 13, IX.1980: 1 m), Mallorca (loc. 19, VII.1983, (E): 2 m, 1 f), Sevilla (loc. 21, IX.1980: 1 f)

19. *Brachythemis leucosticta* (Burmeister)

Spain, Huelva (loc. 12, IX.1980: 1 f; V.1986, (M): 1 m).

The male was described earlier (HARTUNG, 1985).

20. *Sympetrum fonscolombii* (Selys)

Portugal, Odemira (loc. 3, IX.1980: 2 m, 1 f); Spain, Huelva (loc. 12, IX.1980: 2 m), Mallorca (loc. 16, V.1985, (M): 2 exuviae; loc. 17, V.1985, (M): 1 f); loc. 18, V.1985, (M): 1 m)

21. *Sympetrum meridionale* (Selys)

Portugal, Odemira (loc. 3, IX.1980: 1 m, 1 f); Spain, Huelva (loc. 14, VI.1990, (M): 1 exuviae), Ibiza (loc. 15, IV.1979: 1 m)

22. *Sympetrum striolatum* (Charpentier)

Spain, Menorca (loc. 20, IX.1979, collector unknown: 1 f)

23. *Trithemis annulata* (de Beauvois)

Portugal, Odemira (loc. 1, IX.1980: 1 m, 2 f); Spain, Huelva (loc. 12, IX.1980: 2 m, 2 f; loc. 14, VI.1980, (M): 1 exuviae), Sevilla (loc. 21, IX.1980: 1 f)

References

- AGUESSE, P. (1968): *Les Odonates de l'Europe occidentale, du Nord de l'Afrique et des Îles Atlantiques*. Masson, Paris
- BELLE, J. (1984): *Orthetrum trinacria* (Selys) new to the fauna of Spain, with records of three other Afrotropical Odonata Anisoptera. *Ent.Ber., Amst.* 44: 79-80
- BENITEZ-DONOSO, A. & M.J. GARCÍA-PARRÓN (1989): Datos sobre la biología de algunos anisópteros en la Península Ibérica (Odonata, Anisoptera). *Bol. Asoc. esp. Ent.* 13: 195-200
- BUCHHOLZ, K.F. (1955): Morphologische Differenzierung bei der Rassenbildung von *Anax parthenope* Selys (Odonata, Aeschnidae). *Bonn. zool. Beitr.* 6 (1/2): 118-131
- CONESA GARCIA, M.A. (1985): A new record of *Orthetrum trinacria* (Sel.) in the Iberian peninsula (Anisoptera: Libellulidae). *Notul. odonatol.* 2 (5): 83-84

- GARCIA-PARRON, M.J. & A. BENITEZ-DONOSO (1988): A record of the exuviae of *Orthetrum trinacria* (Sel.) from northern Extremadura, Spain (Anisoptera: Libellulidae). *Notul. odonatol.* 3 (2): 33-34
- HARTUNG, M. (1985): *Orthetrum trinacria* (Sel.) as a part of the dragonfly fauna in southern Spain (Anisoptera: Libellulidae). *Notul. odonatol.* 2 (6): 101-102
- HARTUNG, M. (1993): What is the true *Lestes virens virens* (Charpentier, 1825)? *Abstr. Papers XII Int. Symp. Odonatol.* (Osaka): 11-12
- HEYMER, A. (1964): Libellen aus Spanisch-Katalonien. *Beitr. Ent.* 14 (5/6): 601-617
- JURZITZA, G. (1965): Ein Beitrag zur Kenntnis der Odonatenfauna von Nordost-Spanien, mit Bemerkungen zur Rassenfrage der *Agrion haemorrhoidalis* (Van der Linden). *Beitr. naturk. Forsch. SW-Deutschl.* 24 (2): 183-187
- LIEFTINCK, M.A. (1966): A survey of the dragonfly fauna of Morocco (Odonata). *Bull. Inst. r. Sci. nat. Belg.* 42 (35): 1-63
- MAIBACH, A. (1987): Révision systématique du genre *Calopteryx* Leach pour l'Europe occidentale (Zygoptera: Calopterygidae). 3. Révision systématique, étude bibliographique, désignation des types et clé de détermination. *Odonatologica* 16 (2): 145-174
- NAVAS, L. (1924): Sinopsis de los Paraneurópteros (Odonatos) de la península ibérica. *Mem. Soc. ent. Esp.* (Zaragoza) 1: 1-69
- OCHARAN, F.J. (1983): *Calopteryx haemorrhoidalis asturica*, nueva subespecie de caballito del diablo del Norte de España. *Bol. Cienc. Nat. I.D.E.A.* 31: 3-10
- OCHARAN LARONDO, F.J. (1987): *Los odonatos de Asturias y de España: aspectos sistemáticos y faunísticos*. Tesis doct. Univers. Oviedo
- PINHEY, E.C.G. (1961): *A survey of the dragonflies (Order Odonata) of eastern Africa*. BMNH, London

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