Studies on Iberian Dragonflies. *Adv. Odonatol.*, Suppl. 1: 113-116

Notes and observations on dragonflies in southern Portugal

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20 spp. from 12 localities are reported. The records of *Anaciaeschna isosceles* (Müll.) and *Diplacodes lefebvrii* (Ramb.) are remarkable.

Introduction

During the period between 10.-17.06.95, we visited southern Portugal to look at the area's natural history in general, and dragonflies in particular. We were based at Alvor in the Algarve region and travelled as far north as the Alentejo Plains, as far east as Alte, and as far west as Cabo de São Vicente. Potential dragonfly sites were selected from various nature reports which metioned the presence of freshwater habitats, and by interpretation of regional maps. For determination of the species the keys by ASKEW (1988) were used.

List of localities

(1) Barragem da Bravura, 6 km NE Bensafrim, Algarve, 8°41'E 37°12'N. 11.+15.06.95; 11.00-12.00 h; hot and sunny. A large, fairly deep pool, at the base of the dam, with very little emergent vegetation. An overflow feeds remnants of the Riba de Odiaxere which had dried to form very small pools. The site is sheltered by steep valley sides and the dam itself.

(2) Madrinha, 4.5 km W Monchique, Algarve, 8°36'E 37°18'N. 12.06.95, 10.30-12.00 h, cool, with hazy sunshine, alt. 750 m. A large pool, over 35 m in diameter, with shallow margins and 50 % cover of reeds at its sheltered northern end. Set in a slight bowl in the mountainside which is very exposed to the south. Surrounded by an area of low scrub.

(3) Quinta da Torrinha, 1 km N Rasmalho, Algarve, 8°32'E 37°14'N. 12.06.95, 13.30-14.30 h, hot and sunny. A shallow river in a sheltered valley. Up to 3 m wide, the river gently flows over a stoney/gravelly bed. The river has low grassy margins with sparse groups of reeds and is lined with trees on either side. This has the effect of casting the river in shadow except when the sun is at its highest during the middle of the day.

(4) Riba de Odelouca, 1.5 km NW Odelouca, Algarve, 8°30'E 37°13'N. 12.06.95, 16.00-17.00 h, hot and sunny. A wide river, over 10 m across, up to 1 m deep, with shallow gravel beds exposed in places, forming a series of pools divided by shingle bars. The western bank has areas of lush emergent vegetation.

(5) River 6 km E Castro Verde, Alentejo Plains, 8°00'E 37°41'N. 13.06.95, 10.30-12.00 h, hot and sunny. The river has fragmented into a series of pools up to 5 m wide. The lush marginal vegetation contrasts with open plains of the surrounding arid farmland.

(6) River 5 km E Castro Verde, Alentejo Plains, 8°01'E 37°41'N. 13.06.95, 12.30-14.00 h, hot and sunny. A very wide river (over 20 m), with small areas of reeds along its margins. Set in an area of arid farmland.

(7) Namorados, 7.5 km SE Castro Verde, Alentejo Plains, 8°01'E 37°39'N. 13.06.95, 15.00-16.00 h, hot and sunny. A series of shallow pools, with muddy bottoms, left isolated in a drying river bed, the largest of which was approximately 20 m across at its widest point, but had very little emergent vegetation. The smaller pools had

lush stands of reeds along their margins and were fragmented by outcrops of rock. The pools are set in an area of arid grassland and scattered scrub.

(8) Vale de Barao, 3 km W Burgau, Algarve, 8°48'E 37°48'N. 14.06.95, 13.00-16.00 h, hot and sunny, alt. 10 m. Set in a broad coastal valley, this steep-sided river is approximately 3 m wide and crosses an area of neglected farmland now used for rough grazing. There was very little emergent vegetation along the banks of the river except for small areas of reeds scattered along the channel. At the time of our visit the reed bed to the north had dried up and the river was starting to do the same.

(9) Cruzinha Ponds, Quinta da Rocha, Alvor Marshes, Algarve, 8°36'E 37°08'N. 15.06.95, 12.00-13.00 h, hot and sunny. A series of three man-made ponds in the grounds of the A Rocha Christian Conservation centre. Each has a lush growth of reeds around the margins, the largest pool being over 10 m long with floating vegetation at one end. This excellent site was mentioned by GARDINER & STURGESS (1994) who listed 14 dragonfly species, 10 of which had been confirmed as breeding on the Quinta da Rocha headland up to the end of 1993.

(10) Riba de Alte, Alte, Algarve, 8°10'E 37°14'N. 16.06.95, 11.00-13.00 h, very hot and sunny, alt. 190 m. The site is divided into two distinct sections around the „Fonte" area. Upstream the river is shallow and approximately 3 m wide and flows over a rocky bed with scattered emergent vegetation. Downstream the river is deeper and over 5 m wide with walled edges on one side and sparse emergent vegetation.

(11) Barragem do Arde, Casa Queimada, 7.5 km NE Silves, Algarve, 8°22'E 37°14'N. 16.06.95, 14.00-16.00 h, very hot and sunny. One of a series of pools formed by a river below the dam, up to 10 m wide with lush emergent vegetation around the shallow margins including reeds and *Juncus*, and small areas of floating vegetation in the more open stretches. A sheltered site.

(12) Odelouca Bridge, 1.25 km W Odelouca, Algarve, 8°30'E 37°12'N. 16.06.95, 16.30-17.30 h, hot and sunny. A small pool alongside the main river which may be tidal as is the Riba de Odelouca at this point.

Results

The numbers in brackets refer to the list of localities. The maximum numbers and observations on reproductive indications are given.

Calopteryx haemorrhoidalis (Vander L.) - (3): 1. This solitary record suggests that this species is fairly uncommon in the area.

C. virgo meridionalis Sel. - (10): 1. This species seems to be uncommon in this region where so many of the rivers are seasonal. When viewed from certain angles, the head and thorax appeared to be purple in colour, similar to *C. haemorrhoidalis*, though the black tibias could clearly be seen.

Lestes virens (Charp.) - (2): 2 tenerals. This species may be relatively uncommon because of the lack of freshwater pools in the Algarve region. The teneral nature of the imagos suggests that the flight period was just beginning.

L. viridis (Vander L.) - (4): exuviae; (5): 3; (10): 3.

Platycnemis acutipennis (Sel.) - (1): 1.

P. latipes Ramb. - (3): 30 incl. tenerals; (4): 3 tenerals; (10): exuviae, 7 tenerals; (11): 10 incl. tenerals. Identification of teneral insects proved difficult and was based on the short black median line on the tibia and the male's abdominal appendages.

Pyrrhosoma nymphula (Sulz.) - (2): 5 incl. tenerals; (3): 1.

Cercion lindenii (Sel.) - (1): 2; (4): 5, exuviae, copula, oviposition; (9): 4; (11): 4, copula. A relative common and widespread species in the Algarve, but not recorded in any great numbers.

Ischnura graellsii (Ramb.) - (1): 5; (2): 4; (4): 3; (5): 6 incl. tenerals; (6): 1; (7): 12 incl. tenerals; (8): 11; (9): 20; (10): 3; (11): 20, copula. During our visit the most commonly seen species and frequently the most numerous. A number of males were noted with variations in the blue marking on the terminal segments of the abdomen (Fig. 1). Similar variation has been noted in *I. elegans* in Britain (JONES, 1993).

Ceriagrion tenellum (de Vill.) - (1): 1; (11): > 200, copula.

Onychogomphus uncatus (Charp.) - (3): 1. It was observed making its maiden flight from an area of low vegetation (less than 25 cm tall).

Anaciaeschna isosceles (Müll.) - (9): 1. This species has been recorded from this locality in the recent past, but not prior to, or during, 1993 (GARDINER & STURGESS, 1994).

Anax imperator Leach - (2): 2 (1 teneral), exuviae; (3): 1; (8): 1.

Libellula depressa L. - (7): 1.

Orthetrum coerulescens (Fabr.) - (1): 2; (3): 2; (10): 5; (11): 45 incl. tenerals, copula. This species was the most numerous of all the Anisoptera. At loc. (3) males appeared to throw themselves onto the water, becoming partially submerged, before flying off again. The same behaviour was observed in males of *Crocothemis erythraea*. CORBET (1962) considered various theories regarding this behaviour, e.g. possible attempts to drink, to cool down, to wash or to feed. He also added two more possibilities. Firstly that the insects may be testing the true nature of the reflective surface they are attracted to, i.e.: is it water? Secondly, it may be an act of aggression when males attempt to fly at their own reflections.

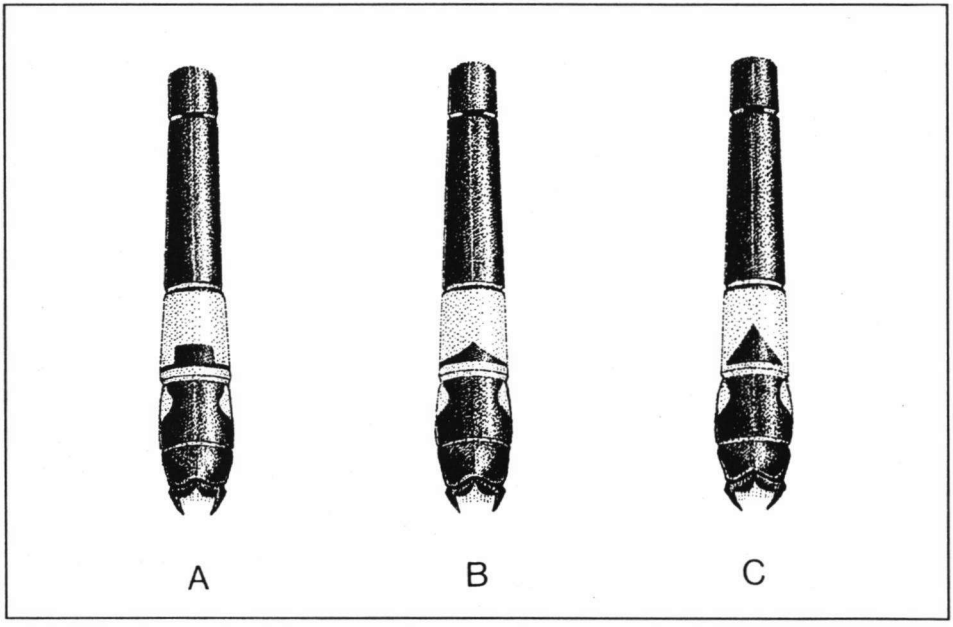

Fig. 1: Variations in the blue markongs on the terminal segments of the abdomen in male *Ischnura graellsii*. Variation A was found at loc. (1), (4), (7), (11), B at loc. (7), and C at loc. (2).

Diplacodes lefèbvrii (Ramb.) - (9): 1. The male was fully mature and held a territory. The species was not reported by GARDINER & STURGESS (1994) from this locality.

Crocothemis erythraea (Brullé) - (1): 1 teneral; (3): 4, oviposition; (4): 2; (7): 1; (8): 2; (9): 3 (1 teneral); (10): 2; (11): 9, copula; oviposition; (12): 1.. This insect was common and widespread throughout the area being the most frequently encountered of all the anisopteran species.

Sympetrum fonscolombii (Sel.) - (8): 2, oviposition; (9): 1. GARDINER & STURGESS (1994) noted that of 70 *Sympetrum* netted at loc. (9) in October 1993, 66 were *S. fonscolombii*, the rest being *S. striolatum*.

S. striolatum (Charp.) - (4): exuviae; (7): exuviae; (11): exuviae. No adults were seen during our trip.

Trithemis annulata (P. de Beauv.) - (1): 2; (11): 4. Both sites where this species was observed are pools below dams. This perhaps suggest a reliance on permanent standing water.

Acknowledgements

I am indebted to ROGER JONES who carried out the vast majority of preparatory work for our trip, and also to LYNN and KATHRYN JONES for their help and enthusiasm which helped make the field work so enjoyable.

References

ASKEW, R.R. (1988): *The dragonflies of Europe*. Harley, Colchester

CORBET, P.S. (1962): *A biology of dragonflies*. Witherby, London

GARDINER, A. & P. STURGESS (1994): Dragonflies on Quinta da Rocha in 1993. *In*: The A Rocha observatory report for the year 1993. A Rocha Trust, Portimão

JONES, S.P. (1993): Variations of the blue markings on segments 7, 8 & 9 in Ischnura elegans. *J. Br. Dragonfly Soc.* 9 (1): 13

Received: 13.07.95
Revised and Accepted: 18.07.95