FIRST RECORD OF *OPHIOGOMPHUS CECILIA* (DE FOURCROY) IN SPAIN (ANISOPTERA: GOMPHIDAE)

The species was known from northern Portugal (A.F. DE SEABRA, 1937, *Mem. Estud. Mus. zool. Univ. Coimbra* [1] 104: 1-14; – R. CORTES, K. DE TJARDA & A. SIMOES, 1986, *Limnetica* 2: 197-204), but the present record from Spain extends its known range considerably southwards (cf. R.R. ASKEW, 1988, *The dragonflies of Europe*, Harley, Colchester).

The larvae were collected at 6 out of 62 localities sampled during 2 years in the framework of a general invertebrate survey in eastern Andalusia (34°16'-38°18'N and 2°31'-3°48'W), on the Guadalquivir and Guadiana Menor rivers only, viz.

(1) Rio Guadalquivir, Puente Mazuecos, 300 m, U.T.M. 30SVG5998, Prov. Jaén: 16-XII-1988 (1L), 27-VI-1989 (1L), 26-IX-1989 (2L), 17-X-1989 (1L) and 23-IV-1991 (1L).

(2) Rio Guadalquivir, Vados de Torralba, 260 m, U.T.M. 30SVH4300, Prov. Jaén: 17-X-1990 (1L).

(3) Rio Guadalquivir, Villargordo, 250 m, U.T.M. 30SVH2904, Prov. Jaén: 27-VI-1989 (1L) and 26-IX-1989 (1L).

(4) Rio Guadiana Menor, Coto los Morenos, 520 m, U.T.M. 30SWG9966, Prov. Jaén: 9-X-1990 (1L).

(5) Rio Guadiana Menor, Puente Sierra de las Cabras, 400 m, U.T.M. 30SVG8288, Prov. Jaén: 13-X-1990 (3L), 26-I-1991 (1L) and 20-IV-1991 (2L).

(6) Rio Guadiana Menor, El Posito, 360 m, U.T.M. 30SVG7898, Prov. Jaén: 24-VI-1989 (1L), 23-IX-1989 (2L), 14-X-1990 (5L), 27-I-1991 (2L) and 20-IV-1991 (2L).

They were identified after G. CARCHINI (1983, *Guide Riconosc. Spec. Anim. Acque interne ital.* 21) and R.R. ASKEW (1988; cf. above), and compared with the Portuguese material of Dr. V. Cortes, in the University of Córdoba collection.

All sites had similar physiographic features, viz. up to 25 m wide loose-gravel and stony beds (pebble diameter up to 15 cm), and high water discharge. These are regulated rivers, however, and in the Guadalquivir R. the flow varies daily.

Table I – The most important physiographic features of the *O. cecilia* habitats – [D.s.: distance from source; – Slp: slope; – Max. W.: maximum width; – Max. D.: maximum depth; – Q: flow; – V.C.: vegetation cover]

River	Locality	D.s. (km)	Slp (%)	Max W. (m)	Max. D. (cm)	Q (m^3/sec)	V.C. (%)
Guadalquivir	Pte. Mazuecos	187.8	0.15	8.2-25.0	30-110	1.13-10.80	25-35
Guadalquivir	V. de Torralba	194.7	0.15	5.3-20.0	32-115	0.01-13.17	25-35
Guadalquivir	Villargordo	210.7	0.06	6.8-16.0	35-110	0.02- 7.40	40-50
Guadiana Menor	C. los Morenos	111.3	0.21	5.5-23.0	15- 30	0.76-11.50	30-40
Guadiana Menor	Pte S^{o} Cabras	155.1	0.30	6.0-12.0	40- 45	0.99-13.86	30-40
Guadiana Menor	El Posito	169.4	0.30	7.6-19.0	38-120	0.89-12.37	70-80

bank vegetation (*Populus* spp., *Tamaryx* sp., *Nerium* sp., *Phragmites* sp., *Typha* sp., *Scirpus* sp.) is variable (25-80%), and the aquatic vegetation is sparse (<5% cover; cf. Tab. I). The physiographical similarity between the Portuguese and Spanish sites is apparent, except for the greater granulometric variation in Portugal (2-500 mm; cf. R. CORTES, 1989, *Biotopologia de ecossistemas lóticos do nordeste de Portugal*, Univ. Tras-Os-Montes & Alto Douro, Vila Real).

The striking physico-chemical characteristics of the water in which the larvae were collected (Tab. II) were: (1) high mineralization (essentially due to runoff), (2) high O_2 content, and (3) moderate nutrient levels. These features differ essentially from those reported by CORTES (1989, cf. above) for the *cecilia* habitats in northern Portugal, where the granite beds carry acidic water, of low mineralization and low nutrient content.

As it goes from the above, *O. cecilia* shows a wide ecological tolerance re the physical and chemical parameters considered, particularly so with regard to electric conductivity and pH.

Table II – The range of variation of the physico-chemical parameters of the water – [for the waterways in Portugal (Olo, Corgo, Tua and Tâmega rivers) the interval of the mean values is given].

Parameters	Guadalquivir Basin	NE Portugal sites
Temperature (°C)	5.0- 25.0	-
pH	7.6- 8.3	6.4- 7.1
Conductivity (µmhos/cm)	1110 -4540	29.5-152.0
Alkalinity (meq/l)	1.7- 4.9	0.1- 0.4
Cl^- (mg/l)	110 - 964	4 - 13
$SO_4^=$ (mg/l)	173 - 884	-
Na^+ (mg/l)	69 - 532	-
K^+ (mg/l)	2 - 5	-
Ca^{++} (mg/l)	92 - 345	-
Mg^{++} (mg/l)	33 - 103	-
NH_4^+ (mg/l)	0.0- 1.3	-
NO_2^- (mg/l)	0.0- 0.2	-
$NO_3^=$ (mg/l)	0.0- 10.0	0.1- 0.4
PO_4^{3-} (mg/l)	0.0- 10.1	<0.1- 0.1
C.O.D. (mg O_2/l)	0.1- 6.6	6.7- 13.1
B.O.D. (mg O_2/l)	-	1.2- 3.1
O_2 (mg/l)	8.0- 15.3	10.0- 11.0

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