

## A preliminary checklist of the Odonata of Galicia, NW Spain

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The knowledge of the distribution of the odonates in Galicia (NW Spain) is very fragmentary, due to the absence of faunistic searches in the last 60 years. The recent bibliographical revision of Ocharán (1987) records 30 species in Galician localities, while Askew (1988) indicates the lack of data on the distribution of many species in this zone with a question mark in his maps. In this study I present data about the distribution of 41 species, collected during the last 10 years in 69 localities. The most interesting discoveries have been of abundant populations of *Ischnura elegans* (Vander L.) in coastal lagoons, and the location of several colonies of *Coenagrion scitulum* (Ramb.), *Coenagrion mercuriale* (Charp.), *Oxygastra curtisii* (Dale), *Macromia splendens* (Pict.) and *Gomphus graslini* Ramb.

### Introduction

In contrast with other European countries, the present knowledge of the distribution, taxonomy and biology of Iberian odonates is very far from being complete (OCHARÁN, 1988). The number of species that have been collected from Spanish localities amounts to 72 (71 species recorded by OCHARÁN (1988) and *Leucorrhinia dubia*, collected by MICHELS & VERHEYEN (1990) in the Spanish Pyrenees), but given that some other species breed in the French Pyrenees, several more species could be found in the future (OCHARÁN, 1988). Many parts of the Iberian geography have not been explored in search for odonates during the last 60 years (since the death of Longinos Navás, the "father" of Spanish odonatology), or even ever been explored at all. OCHARÁN (1988) points out the scarcity of faunistic records from the Iberian System, Pyrenees, Galicia, Ebro valley, the north of Castilla, and Sierra Nevada (Granada). ASKEW (1988) also indicates the absence of data from NW Spain with a question mark on the distribution maps of several species.

Galicia forms the northwestern corner of the Iberian Peninsula (Fig. 1), bounded on the North and West by the Atlantic Ocean, with Portugal to the South, and Asturias and León to the East. Galicia is divided into four provinces, named after their capital cities: A Coruña, Lugo, Pontevedra and Ourense<sup>1</sup>. Notwithstanding its limited size (29,434 km<sup>2</sup>), this region is characterized by great climatic contrasts, from the Mediterranean climate on the coast of Pontevedra and part of the province of Ourense, to the Pyrenean climate in the mountains of Lugo and Ourense (CARBALLEIRA et al., 1983).

<sup>1</sup> In this paper I use the official place-names in the Galician language, some of which are slightly different from the Spanish version.

In his recent revision of the Iberian odonatological literature, OCHARÁN (1987) found that only 30 species were known from Galicia, most of them from the few localities visited by Longinos Navás during the first 20 years of this century. The aim of this paper is to make a contribution to the knowledge of the odonates of Galicia.

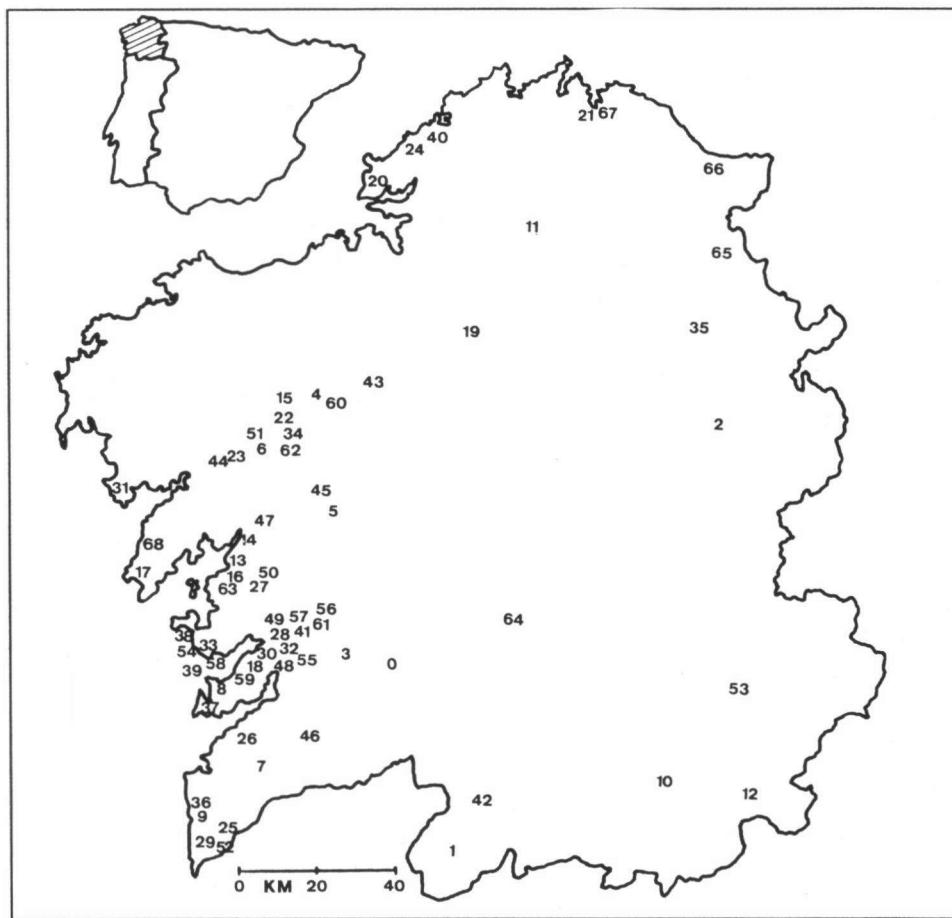


Figure 1. Map of Galicia (NW Spain), showing the approximate situation of the localities; see Appendix for details.

### Methods

I started the study of Galician odonates in 1984 but, because I was involved in time-consuming ecological studies (e.g. CORDERO, 1992), I could not explore the country with the dedication needed for an exhaustive work. Notwithstanding these limitations, during the last 10 years I have collected many species that were previously unknown from Galicia. Most of the localities that I have had the opportunity to visit are in the Pontevedra and A Coruña provinces (Fig. 1). For this reason, the fauna of Lugo and Ourense remains largely unknown, and some Mediterranean species are likely to be present there. All the individuals that I have examined are in my own

collection. For each species I indicate the locality with a number code (see Appendix), the date of collection and the number of males (m) and females (f) collected.

The bibliographic citations are based on the revision by OCHARÁN (1987). The distribution is compared with the maps by ASKEW (1988).

## Checklist of the odonates of Galicia

### Calopterygidae

- *Calopteryx haemorrhoidalis* (Vander Linden)

Common and widespread, mainly near the coast. This species shows great variability in male wing colouration. Galician populations are characterized by the absence of dark colouration in the distal and basal parts of fore and hindwings, and by the metallic violet colouration of the body of the mature male (see Plate 3 in ASKEW, 1988 for the same colouration in a French specimen). These are the characteristics of the subspecies *asturica* (OCHARÁN, 1983), clearly different from the nominate subspecies that has dark wings and metallic black body. This species has been recorded from Galician localities by NAVÁS (1917, 1924b), OCHARÁN (1987) and CORDERO (1989a, 1991).

**Localities:** Pontevedra province: 8, 5-8-79, 1m; 25, 16-9-84, 1m, 21-7-85, 1m, 25-8-85, 1m, 1f, 27, 17-7-88, 1m; 30, 1-9-85, 1m, 1f, 19-9-85, 1m, 5-7-86, 1m, 15-8-86, 4m, 5-7-87, 1m, 12-6-94, 1m, 1f; 32, 29-8-85, 1m, 1f, 41, 19-7-84, 1m; 48, 7-9-86, 1m; 47, 23-8-85, 3m, 2f; 50, 26-7-86, 1f; 54, 7-8-85, 1m, 1f; 55, 16-7-84, 1m, 1f, 25-7-84, 1f, 13-7-85, 1m, 1f; 57, 7-7-85, 1m; 59, 21-9-84, 1m, 31-8-85, 2m; A Coruña province: 17, 25-8-88, 1m, 1f. Lugo province: 21, 19-6-90, 1m.

- *Calopteryx xanthostoma* (Charpentier)

Widespread, but common only by large slow-running rivers, or near the mouth of some small rivers. Records by NAVÁS (1917, 1924b), OCHARÁN (1987) and CORDERO (1989a).

**Localities:** Pontevedra province: 25, 7-7-85, 1m, 1f; 41, 19-7-84, 1m, 1f, 24-6-85, 1m, 1f, 47, 23-8-85, 1m, 1f; 50, 26-7-86, 1m, 1f, 25-7-87, 1f. A Coruña province: 4, 10-6-90, 1m; 15, 22-6-89, 1m; 17, 29-3-88 (ex larva), 1f; 23, 16-7-89, 1m; 43, 30-6-82, 1m leg. P. Membiela; 44, 15-5-82, 1f leg. P. Membiela; 22-8-88, 1f; 60, 8-7-82, 1f leg. P. Membiela.

- *Calopteryx virgo* (Linnaeus)

Common and widespread by most rivers of Galicia, from the coast to the interior. Previously recorded by NAVÁS (1907, 1917, 1924b), OCHARÁN (1987), CORDERO (1989a) and PARDO (1992) from localities in all four Galician provinces.

**Localities.** Pontevedra province: 5, 20-8-89, 4m, 4f, 9, 11-6-94, 2m, 2f; 25, 20-7-85, 2f, 21-7-85, 2m; 30, 1-9-85, 1m, 25-7-86, 1f; 32, 29-8-85, 1m; 41, 19-7-84, 1m, 1f, 12-7-88, 1m; 48, 7-9-86, 1m; 47, 23-8-85, 1m, 1f; 50, 26-7-86, 1m; 55, 27-4-85, 1f; 57, 2-7-85, 1m, 1f; 59, 23-4-84, 1m, 21-9-84, 1m; 63, 2-9-85, 1m, 1f. A Coruña province: 17, 25-8-88, 1m; 23, 16-7-89, 1m; 34, 22-6-88, 1m, 2f; 44, 15-5-82, 1m leg. P. Membiela; 22-8-88, 1m, 1f; 62, 10-8-88, 2m. Lugo province: 35, 2-8-85, 1m, 1f (leg. S. Coladas-Guzmán); 67, 19-6-90, 3m. Ourense province: 53, 13-7-86, 1m, 2f (leg. J. Rodríguez García).

### Lestidae

- *Sympetrum fusca* (Vander Linden)

Rare. Previously recorded only from the Pontevedra province by COMPTE (1975), this species was observed by man-made ponds and coastal lagoons.

**Localities:** Pontevedra province: 38, 14-4-95, 1f; 52, 18-4-87, 1m; 54, 9-7-85, 1m, 1f, 8-8-86, 1f. A Coruña province: 17, 28-4-90, 1f; 25-3-95, 1m; 68, 9-7-90, 1m.

- *Lestes barbarus* (Fabricius)

Fairly common, most frequently found near the coast, especially by lagoons. Previously known from A Guardia (Pontevedra, NAVÁS, 1917) and Louro (A Coruña, OCHARÁN, 1987).

**Localities:** Pontevedra province: 28, 14-5-85, 1f, 15-5-85, 1m; 38, 20-4-85, 1f, 1-6-85, 2m, 2f, 9-7-85, 1m, 1f, 12-9-85, 1m, 1f. A Coruña province: 17, 25-8-88, 1m. Lugo province: 66, 7-6-90, 1m.

- *Lestes dryas* Kirby

This species typically occurs at high altitude ponds and wetlands, at about 1000 m in the south of its range (ASKEW, 1988) or even higher (1700 m, CARCHINI, 1974). In Galicia it has been found at high altitude (Manzaneda, Ourense, loc. 53), but also in coastal lagoons at sea level. It is rare and previously unknown from Galicia.

**Localities:** Pontevedra province: 28, 4-5-85, 1m; 38, 9-7-85. A Coruña province: 4, 10-6-90, 1m, 1f, 10-6-94, 2m; 19, 9-3-90, 1m, 4f, 51, 24-5-90, 1m, 2f; 62, 23-6-88, 3m, 1f. Ourense province: 53, 3m (leg. J. Rodríguez García).

- *Lestes virens* (Charpentier)

Inhabits the same coastal lagoons and wetlands as *L. barbarus*, but is more common. Nevertheless, NAVAS (1917) only recorded it from Tui (Pontevedra), and BENÍTEZ (1950) from A Coruña province (no locality).

**Localities:** Pontevedra province: 25, 10-8-86, 1m, 16-7-88, 1m; 28, 20-6-84, 1f, 21-6-84, 1m; 38, 28-10-84, 1m, 9-7-85, 1m, 12-9-85, 1m; 47, 23-8-85, 2m, 2f; 52, 24-8-86, 1m, 1f; 55, 11-9-85, 1m; 54, 8-8-86, 1m. A Coruña province: 4, 7-10-94, 1m; 17, 25-8-88, 2m, 2f, 29-9-94, 1m; 68, 12-9-88, 1f, 9-7-90, 7m, 2f. Lugo province: 66, 14-6-90, 2m, 1f.

- *Lestes viridis* (Vander Linden)

Common. Present by most rivers, and, under some circumstances, in dense populations at ponds (CORDERO, 1988). Previously recorded by NAVÁS (1917, 1924b), MARGALEF et al. (1976), CORDERO (1988, 1989a) and PARDO (1992).

**Localities:** Pontevedra province: 5, 20-8-89, 1f; 7, 29-8-86, 1m; 25, 1-9-84, 1f, 16-9-84, 2m, 22-7-84, 1f; 32, 29-8-85, 1f; 41, 17-8-86, 1m; 48, 7-9-86, 1m; 47, 23-8-85, 2m, 1f; 50, 26-7-86, 1m; 55, 9-10-83, 1m, 1f, 27-6-84, 1m, 1f; 5-8-84, 1m, 1f; 18-8-84, 1f, 12-9-85, 1m, 1f, 27-10-85, 1m. Coruña province: 17, 25-8-88, 1m, 31-5-90, 1m, 29-9-94, 1m; 15, 26-8-89, 1m, 1f; 45, 20-8-89, 3m, 2f; 62, 29-7-88, 1f. Lugo province: 66, 7-6-90, 1m, 1f.

## Platycnemididae

- *Platycnemis acutipennis* Selys

Common, but present in smaller numbers than *P. latipes* at medium to large rivers. Rare by streams. Recorded by NAVÁS (1907, 1917, 1924a, 1924b), BENÍTEZ (1950) and CORDERO (1989a).

**Localities:** Pontevedra province: 25, 7-7-85, 1m, 1f, 24-7-88, 1m; 41, 19-7-84, 1m, 1f, 24-6-85, 3m, 3f, 17-8-86, 1f, 12-7-88, 1m, 7-6-94, 2m, 2f; 7, 11-4-95, 1m; 50, 26-7-86, 1m, 1f. A Coruña province: 4, 10-6-90, 1m, 2f; 15, 1m; 23, 16-7-89, 1m.

- *Platycnemis latipes* Rambur

Very common by all running waters of Galicia, from small rivulets to large rivers like the Miño. Previously recorded by NAVÁS (1917), BENÍTEZ (1950), CORDERO (1989a) and PARDO (1992).

**Localities:** Pontevedra province: **25**, 22-7-84, 1m, 1f, 7-7-85, 1m; **41**, 19-7-84, 2m, 1f, 17-8-86, 1m, 12-7-88, 1m, 1f; **46**, 9-9-79, 1m, 1f; **47**, 23-8-85, 1m, 1f; **50**, 26-7-86, 1m, 1f, 25-7-87, 1f. A Coruña province: **15**, 22-6-89, 1m; **23**, 16-7-89, 1m; **44**, 22-8-89, 1m; **45**, 20-8-89, 5m, 4f. Lugo province: **11**, 20-6-90, 1f. Ourense province: **64**, 30-6-82, 2f leg. P. Membiela.

## Coenagrionidae

- *Pyrrhosoma nymphula* (Sulzer)

Very common by all types of running water, from irrigation channels to streams and rivers; more rarely at ponds. One of the first odonates to emerge, sometimes in the first week of March. Records by NAVÁS (1917), OCHARÁN (1987), CORDERO (1989a) and PARDO (1992).

**Localities:** Pontevedra province: **8**, 15-7-79, 1m, 1f; **14**, 9-6-90, 1m; **25**, 21-7-84, 2m, 1f, 21-7-85, 1f, 3-4-88, 2f; **26**, 13-4-95, 1m; **32**, 29-8-85, 1m; **41**, 12-7-88, 1m; **7**, 11-4-95, 1m, 1f; **50**, 26-7-86, 1m; **52**, 18-4-87, 1m; **55**, 8-4-84, 1f, 18-4-84, 1m, 1f, 20-4-84, 1f. A Coruña province: **17**, Feb. 88 (ex larva), 2m, 1f, 5-6-94, 1m, 1f; **15**, 22-6-89, 1m; **22**, 5-5-90, 2m; **23**, 16-7-89, 1f; **40**, 12-7-90, 1m, 1f; **43**, 30-6-82, 1m, 1f leg. P. Membiela; **51**, 30-5-90, 1m; **62**, 10-7-88, 2m, 24-8-88, 2m, 2f. Lugo province: **2**, 20-5-84, 1f leg. P. Membiela; **67**, 19-6-90, 3m. Ourense province: **10**, 1-8-89, 1m, 1f leg. P. Membiela; **12**, 1m leg. P. Membiela; **42**, 24-9-83, 1m leg. P. Membiela; **53**, 13-7-86, 3m, 6f (leg. J. Rodríguez García).

- *Erythromma viridulum* (Charpentier)

Rare and found only by man-made ponds. Recorded by NAVÁS (1917) from A Guardia (Pontevedra).

**Localities:** Pontevedra province: **52**, 25-8-86, 1m, 28-8-86, 1f, 29-8-86, 1m, 18-8-90, 1f, 26-8-90, 1m, 5-9-90, 1f; **54**, 7-8-85, 2m, 8-8-86, 1m.

- *Cercion lindenii* (Selys)

Very common, breeding in both standing and running waters. Records by NAVÁS (1907, 1917, 1924a, 1924b), BENÍTEZ (1950), MARGALEF et al. (1976) and (1989a).

**Localities:** Pontevedra province: **25**, 21-7-84, 1m, 1f, 16-9-84, 1f, 7-7-85, 1m, 2f, 24-7-88, 1m, 11-6-94, 1m; **26**, 6-9-84, 1m, 13-4-95, 1m; **41**, 12-7-88, 2m, 1f; **50**, 12-7-87, 1m; **52**, 24-8-85, 1m, 1f. **55**, 30-6-84, 1m, 1f, 5-8-84, 1f, 1-9-85, 1m; A Coruña province: **17**, 12-9-88, 1f; **44**, 22-8-88, 1m.

- *Coenagrion mercuriale* (Charpentier)

Common species breeding in small streams and irrigation channels with dense vegetation. Records by NAVÁS (1917, 1924b), BENÍTEZ (1950) and OCHARÁN (1987).

**Localities:** Pontevedra province: **14**, 9-6-90, 2m, 2f; **25**, 21-7-84, 1m, 3f, 6-7-85, 1m, 1f, 20-7-85, 1f, 21-7-85, 1m, 24-8-85, 2m, 16-7-88, 2m. A Coruña province: **17**, 1-5-93, 1m; **40**, 12-7-90, 1m; **62**, 10-7-88, 3m, 2f, 24-8-88, 1m, 25-5-89, 1m, 1f. Lugo province: **11**, 20-6-90, 2m; **67**, 19-6-90, 7m, 3f.

- *Coenagrion puella* (Linnaeus)

Rare, mainly found by inland ponds. Not previously recorded in Galicia.

**Localities:** Pontevedra province: **7**, 11-4-95, 1m. A Coruña province: **4**, 16-5-90, 3m, 1f, 10-6-90, 1m, 8f, 10-6-94, 2m; **40**, 12-7-90, 1m; **51**, 24-5-90, 1m, 30-5-90, 1m, 1f. Lugo province: **11**, 20-6-90, 2m; **66**, 14-6-90, 4m.

- *Coenagrion scitulum* (Rambur)

Locally abundant, breeding in ponds with dense vegetation. Not previously recorded in Galicia (see distribution map in ASKEW, 1988), but seems quite widespread.

**Localities:** Pontevedra province: **25**, 9-5-93, 1m; **55**, 8-9-84, 1m, 9-7-85, 1m. A Coruña province: **4**, 10-6-90, 2m, 1f; **17**, 31-5-90, 1m, 1f, 5-6-94, 2m, 2f; **40**, 12-7-90, 1m, 1f; **51**, 30-5-90, 2m; **68**, 9-7-90, 1m. Lugo province: **66**, 7-6-90, 1m, 14-6-90, 1m.

- *Enallagma cyathigerum* (Charpentier)

Common, but only found by large ponds and reservoirs. Surprisingly, this species was unknown from Galicia, and ASKEW (1988) reflects the absence of data from this region with a question mark on his distribution map.

**Localities:** Pontevedra province: **16**, 2-9-85, 1m, 1f; **18**, 18-8-84, 1m, 1f; **38**, 14-4-95, 1m; **41**, 17-8-87, 1f; **49**, 29-6-85, 3m, 3f; **7**, 11-4-95, 1m, 1f; **52**, 16-8-85, 1m, 18-4-87, 2f; **54**, 7-8-85, 1m, 1f, 28-8-87, 1f; **55**, 11-8-85, 1m. A Coruña province: **17**, 28-4-90, 1m, 1-10-94, 1m; **20**, 12-7-90, 2m; **22**, 5-5-90, 10m, 4f, ex larva; **24**, 12-7-90, 1m; **68**, 9-7-90, 1f. Lugo province: **66**, 14-6-90, 1m.

- *Ischnura elegans* (Vander Linden)

This species has a surprising distribution in the Iberian Peninsula. Common and widespread on the Mediterranean coast from Catalonia to Valencia and Murcia, but absent from the south of the country. It appears again in Madrid, León and Santander (OCHARÁN, 1987; COMpte, 1988). In Galicia it was not recorded by previous workers. Nevertheless, there are dense populations at coastal lagoons on the north coast of the A Coruña and Lugo provinces, and it appears occasionally also in the south (Lourizán, Pontevedra: 4 specimens of *I. elegans* among more than 1600 of *I. graellsii*; CORDERO, 1989b). The distribution map in ASKEW (1988) is clearly incomplete.

**Localities.** A Coruña province: **17**, 3-6-90, 1m; **20**, 12-7-90, 69m, 49f, **24**, 12-7-90, 71m, 26f; **31**, 9-4-95, 8m, 5f; **40**, 12-7-90, 44m, 10f. Lugo province: **66**, 7-6-90, 1m, 2f; 14-6-90, 25m, 15f.

- *Ischnura graellsii* (Rambur)

This is the commonest damselfly in most areas of Galicia. It can be found in any kind of aquatic habitat, forming very dense populations in coastal lagoons and saltmarshes, as *I. elegans* does in other areas of Europe. Recorded by NAVAS (1924b), OCHARÁN (1987) and COMpte (1988). CORDERO (1987, 1989b, 1992) studied several populations of this species using mark-recapture methods.

**Localities.** Pontevedra province: **7**, 29-8-86, 2f; **14**, 9-6-90, 1m; **25**, 22-7-84, 1m, 1f, 16-9-84, 1m, 1f, 7-7-85, 1m, 1f, 24-8-85, 1m, 1f, 24-7-88, 1m; **26**, 6-9-84, 1m; **28**, 4-5-85, 4m, 2f, 2-7-85, 1m; **30**, 19-7-86, 3m, 1f, 30-8-86, 1m, 14-5-88, 4m, 8f; **38**, 9-7-85, 1m, 2f, 4-6-94, 4m, 5f, 14-4-95, 1f; **41**, 17-8-86, 1m, 2f, 12-7-88, 1m; **47**, 23-8-85, 1m, 1f, **7**, 11-4-95, 1m; **50**, 25-7-87, 1m; **54**, 7-8-85, 1f; **55**, 11-9-79, 1m, 6-10-83, 1m, 29-4-84, 1m, 1f, 27-6-84, 1m, 30-6-84, 2f, 5-7-84, 1m, 1f, 25-7-84, 1f, 27-8-84, 1m, 8-9-84, 1f, 20-9-84, 2m, 26-7-85, 1f, 5-8-85, 1f, 11-6-86, 1m. A Coruña province: **4**, 16-5-90, 1m, 1f; **17**, 25-8-88, 1m, 3f, 30-8-88, 3m, 1f, 24-7-89, 2m, 2f, 31-5-90, 8m; **31**, 9-4-95, 4m, 3f, **34**, 22-6-88, 1m; **51**, 24-5-90, 1m; **62**, 10-5-88, 2m; **68**, 12-9-88, 4m, 4f, 25-3-95, 1m. Lugo province: **66**, 14-6-90, 40m, 9f.

- *Ischnura pumilio* (Charpentier)

This species has been found in several localities but never forming dense colonies. Most of the populations seem to survive in temporary habitats, especially man-made ponds with just a few cm of water, as in other areas of Europe (FOX & CHAM, 1994). The only locality where the species has been found in a natural wetland is Lourizán (Locality 30, CORDERO, 1989b). There are no bibliographic records of this species from Galicia, but there are three records from Asturias (OCHARÁN, 1987). The present records confirm that *I. pumilio* has a wider distribution than ASKEW (1988) indicates.

**Localities.** Pontevedra province: **28**, 4-5-85, 1f; **30**, 3-9-88, 4m, 1f; **55**, 23-7-85, 1m. A Coruña province: **62**, 23-6-88, 2m, 1f.

- *Ceriagrion tenellum* (de Villers)

Common at streams, wetlands and ponds, even on the coast. Previously recorded by NAVÁS (1907, 1917, 1924b), BENÍTEZ (1950), OCHARÁN (1987) and CORDERO (1989a).

**Localities.** Pontevedra province: 7, 29-8-86, 2f; 14, 9-6-90, 1m; 50, 12-7-87, 1m; 25, 20-7-85, 2f, 25-8-85, 1m, 1f, 8-9-85, 1m, 1f, 41, 17-8-86, 2m, 1f, 12-7-88, 1m, 1f, 47, 23-8-85, 1m; 48, 7-9-86, 1m, 1f, 52, 24-8-85, 1m, 1f, 27-8-86, 2f; 55, 29-9-83, 1m, 1f, 25-7-84, 1m, 1f, 10-8-84, 1f. A Coruña province: 4, 16-5-90, 4m, 1f, 10-6-90, 7m, 6f, 10-6-94, 4m, 5f, 17, 25-8-88, 1m, 1f, 30-8-88, 2f, 5-6-94, 1f; 40, 12-7-90, 1m, 1f, 62, 24-8-88, 1m; 68, 9-7-90, 1m. Lugo province: 11, 20-6-90, 1m, 3f.

## Aeshnidae

- *Boyeria irene* (Fonscolombe)

Very common by all rivers and streams, and occasionally has been observed on a patrol flight along stony coasts and beaches. Recorded from Galicia by NAVÁS (1906, 1917), OCHARÁN (1987), CORDERO (1989a) and PARDO (1992). Also common in Asturias (OCHARÁN, 1987). These observations indicate that the species is present in all parts of the Iberian Peninsula (completing the map by ASKEW, 1988).

**Localities.** Pontevedra province: 3, 5-10-94, 1m; 5, 20-8-89, 1m; 18, 29-7-84, 1m; 29, 15-9-84, 1m; 30, 1-9-85, 1m; 48, 1m; 59, 25-8-84, 1f. A Coruña province: 15, 26-8-89, 1m; 43, 30-6-82, 1 exuvium leg. P. Membiela; 62, 19-7-88, 1m.

- *Aeshna affinis* Vander Linden

Very rare, found in sympatry with *A. mixta*. Not previously recorded in Galicia. The only known locality is very far from its range (OCHARÁN, 1987; ASKEW, 1988).

**Localities.** Pontevedra province: 38, 7-6-85, 1m.

- *Aeshna cyanea* (Müller)

Very common, found at garden ponds, large ponds and rivers. Nevertheless, it was only known from A Igrexo (Fornelos de Montes, Pontevedra; NAVÁS, 1917).

**Localities.** Pontevedra province: 25, 1f; 56, 9-9-84, 1f (leg. J. Rodríguez García); 55, 11-9-84, 1m, 6-10-84, 1m (leg. J. Rodríguez García); 48, 7-9-86, 1m; 21-8-90, 36, 8-10-94, 1m. Lugo province: 65, 26-7-84, 1m.

- *Aeshna mixta* Latreille

Common, breeding mainly in coastal lagoons. It was only known from Muros (A Coruña, OCHARÁN, 1987).

**Localities.** Pontevedra province: 28, 8-7-84, 1f; 38, 28-10-84, 1m, 1f (leg. J. Rodríguez García). A Coruña province: 17, 12-9-88, 1m.

- *Anax imperator* Leach

Widespread and common especially on standing waters. Notwithstanding this, the species had only been recorded previously from Louro (A Coruña, OCHARÁN, 1987), and appears with a question mark in the distribution map in ASKEW (1988). Observed but not captured at many localities.

**Localities.** Pontevedra province: 25, 11-8-84, 1m; 6-7-85, 1f, 7-7-85, 1m; 52, 24-8-85, 1f, 15-8-90, 1f, 55, 25-7-84, 1f, 28-7-84, 1m, 4-8-87, 1m. A Coruña province: 17, 30-8-88, 1m; 40, 12-7-90, 1f. Lugo province: observed at 67.

## Gomphidae

- *Gomphus graslinii* Selys

Very rare, found in just one locality. Never recorded in Galicia before.

**Localities.** *Ourense province:* 0, 13-6-95, 1m

- *Gomphus pulchellus* Selys

Rare, inhabits ponds and slow running rivers. Like the following species was recorded from Lugo by NAVÁS (1924a).

**Localities.** *Pontevedra province:* 25, 22-7-84, 1m, 1f, 7-7-85, 1m, 1f, 24-7-88, 1m; 26, 13-4-95, 1m; 27, 17-7-88, 2m; 41, 26-6-80, 1f, 12-7-88, 2m; 7, 11-4-95, 1m; 50, 31-7-87, 1f; 52, 9-5-93, 1f. 55, 28-4-85, 1m; *A Coruña province:* 4, 10-6-90, 1f; 23, 16-7-89, 1m. *Ourense province:* 0, 13-6-95, 1f.

- *Gomphus simillimus* Selys

Rare, only found by relatively large rivers. Recorded from Lugo by NAVAS (1924a), and from Portas (Pontevedra) by CORDERO (1989a).

**Localities.** *Pontevedra province:* 41, 19-7-84, 1f; 50, 26-7-86, 1f, 12-7-87, 1f. *A Coruña province:* 22, 3-6-90, 1f; 23, 16-7-89, 1m.

- *Onychogomphus uncatus* (Charpentier)

Very common, widespread at all running waters. Records by NAVAS (1917, 1924a), OCHARÁN (1987), CORDERO (1989a) and PARDO (1992).

**Localities.** *Pontevedra province:* 8, 20-7-79, 1m; 25, 21-7-84, 1m, 1f, 11-6-94, 1m; 32, 29-8-85, 1m; 41, 19-7-84, 1m, 1f, 47, 23-8-85, 1m, 1f; 48, 7-9-86, 1f; 49, 29-6-85, 1m; 50, 26-7-86, 1m; 59, 31-8-85, 1f; 61, 24-6-85, 1m, 29-6-85, 1f. *A Coruña province:* 22, 27-6-89, 1m, 1f; 23, 16-7-89, 1f; 43, 30-6-82, 1m, 1 exuvium leg. P. Membiela; 44, 22-8-88, 1m; 62, 10-7-88, 1m.

## Cordulegastridae

- *Cordulegaster boltonii* (Donovan)

Very common at all running waters. Records by NAVÁS (1917), BENÍTEZ (1950), OCHARÁN (1987) and PARDO (1992).

**Localities.** *Pontevedra province:* 5, 20-8-89, 1m; 8, 28-7-79, 1m; 39, 8-7-90, 1m; 18, 31-8-85, 1m; 30, 12-6-94, 1m; 37, 30-9-94, 1m; 50, 26-7-86, 1m; 55, 16-7-84, 1f, 29-7-84, 1m; 59, 21-9-84, 1f, 31-8-85, 1m. *A Coruña province:* 22, 3-6-90, 1m; 62, 10-7-88, 1f, 15-7-88, 1m. *Lugo province:* 67, 19-6-90, 1f. *Ourense province:* 1, 17-9-92, 2m (leg. J. López Pérez).

## Corduliidae

- *Macromia splendens* (Pictet)

A very rare species, never cited from Galicia before. About 20 males were observed in the only locality where it has been found.

**Localities.** *Ourense province:* 0, 11-6-95, 1m, 13-6-95, 2m.

- *Oxygastra curtisii* (Dale)

Restricted to some slow-flowing rivers, with sunny areas and not very deep waters, where the species may be abundant. It has been recorded from Lugo by NAVÁS (1924a), from Portas (Pontevedra) by CORDERO (1989a) and from the river Tea by PARDO (1992).

**Localities.** Pontevedra province: 27, 17-7-88, 2m, 2f; 49, 29-6-85, 1m; 50, 26-7-86, 1m, 1f, 12-7-87, 2m. A Coruña province: 22, 27-6-89, 1f; 23, 16-7-89, 1m.

### Libellulidae

- *Libellula depressa* Linnaeus

Common species that may be found by ponds and slowly running waters. NAVAS (1917, 1924b) recorded it from three localities.

**Localities.** Pontevedra province: 8, 30-7-79, 1m; 30, 15-7-86, 1f, 19-7-86, 1m; 55, 31-8-84, 1f, 23-7-85, 1m; 59, 9-8-84, 1m.

- *Libellula quadrimaculata* Linnaeus

This species has only been recorded from Tui (Pontevedra) by NAVAS (1917) and seems rather rare in Galicia. This could, in part, be due to the short and early flight period.

**Localities.** Pontevedra province: 41, 12-7-88, 1f; 55, 20-4-85, 1f; 7, 11-4-95, 1m, 1f. A Coruña province: 4, 10-6-90, 1m; 17, 28-4-90 (ex larva), 1f; 51, 30-5-90, 1m.

- *Orthetrum brunneum* (Fonscolombe)

Though widely distributed in the Iberian Peninsula, the only Galician record is from A Guardia (Pontevedra) by NAVAS (1917). It has never been captured by other authors. Although ASKEW (1988) indicates its presence all over the Iberian Peninsula, it seems absent from most areas of Galicia.

- *Orthetrum cancellatum* (Linnaeus)

Common by reservoirs and ponds, and more rarely by slowly running waters. Previously unknown from Galicia, the localities below, together with those of OCHARÁN (1987) for Asturias, complete the map in ASKEW (1988).

**Localities.** Pontevedra province: 25, 16-9-84, 1f; 52, 24-8-86, 1m, 1f; 55, 2-7-84, 1m, 5-7-84, 1m, 23-5-85, 1f. Ourense province: 0, 11-6-95, 1f, 13-6-95, 1m.

- *Orthetrum coerulescens* (Fabricius)

Very common species in all kind of freshwater habitats. It has been also captured in salt marshes. It is known from many localities (NAVÁS, 1902, 1906, 1917; OCHARÁN, 1987; CORDERO, 1989a).

**Localities.** Pontevedra province: 7, 29-8-86, 1f; 8, 31-7-79, 1f, 18-8-78, 1m; 14, 9-6-90, 1m; 18, 1-7-79, 1m, 22-6-84, 1m, 18-8-84, 1m; 25, 21-7-84, 1m, 1f, 24-8-85, 1m, 24-7-88, 1f; 33, 23-7-85, 1m; 48, 7-9-86, 1m; 47, 23-8-85, 1m, 1f; 50, 26-7-86, 1m, 12-7-87, 1m; 52, 5-9-90, 1m; 54, 7-8-85, 1m, 1f, 12-9-85, 1m; 55, 17-8-85, 1m. A Coruña province: 17, 25-8-88, 1m; 45, 20-8-89, 1m, 1f; 62, 10-7-88, 1m. Lugo province: 11, 20-6-90, 1f; 67, 19-6-90, 1m.

- *Crocothemis erythraea* (Brullé)

Common at all kinds of static water. Never recorded in Galicia before.

**Localities.** Pontevedra province: 25, 22-7-84, 1f; 54, 25-8-87, 2f; 55, 3-7-84, 1f, 5-8-85, 1m. A Coruña province: 17, 25-8-88, 1m.

- *Sympetrum fonscolombii* (Selys)

This species can be very common locally, but has a scattered distribution. Only found at ponds. Recorded by NAVÁS (1917) from A Igrexa (Pontevedra) and by OCHARÁN (1987) from Louro (A Coruña).

**Localities.** Pontevedra province: 18, 18-8-84, 1m; 25, 24-8-85, 1m; 38, 1-6-85, 2m, 9-7-85, 2m; 54, 9-7-85, 1m, 7-8-85, 2m, 1f, 28-8-87, 1m; 55, 13-5-84, 1m, 15-7-85, 1m, 1f. A Coruña province: 17, 25-8-88, 1m; 24, 12-7-90, 1m; 40, 12-7-90, 1m; 62, 23-6-88, 1m.

- *Sympetrum sanguineum* (Müller)

Common by ponds and slowly running waters. Records by NAVÁS (1906, 1917, 1924a, 1924b), OCHARÁN (1987) and PARDO (1992).

**Localities.** Pontevedra province: 7, 29-8-86, 1m; 13, 2-9-85, 1m, 1f; 14, 9-6-90, 1f; 25, 21-7-84, 1f, 22-7-84, 1m, 16-9-84, 1m, 1f; 24-7-88, 2m, 1f; 28, 19-9-84, 1m; 30, 1-9-85, 1m; 47, 23-8-85, 1m; 50, 26-7-86, 1m; 54, 28-8-87, 1f; 55, 11-8-85, 1m. A Coruña province: 4, 10-6-90, 1f; 6, 24-5-90 (ex larva), 1m, 1f; 68, 12-9-88, 1m; 9-7-90, 1m, 1f. Lugo province: 66, 11, 20-6-90, 1m; 7-6-90, 1m; 67, 19-6-90, 1m.

- *Sympetrum striolatum* (Charpentier)

This is the commonest dragonfly at most ponds and wetlands, but surprisingly it had only previously been recorded from two localities (NAVÁS, 1917), possibly because of its autumnal flight period.

**Localities.** Pontevedra province: 25, 16-9-84, 1m, 1f; 28, 13-5-84, 1f, 19-9-84, 1m, 1f; 37, 30-9-90, 2m, 2f; 38, 1-6-85, 1m, 1f; 47, 23-8-85, 1m; 48, 7-9-86, 1m; 55, 12-10-83, 1m, 1f; 30-10-83, 1m, 1f; 11-9-84, 1m, 1f; 7-10-84, 1f; 6-9-85, 1m; 57, 9-7-85, 1m; 58, 12-9-85, 1f; 59, 21-9-84, 1m. A Coruña province: 17, 18-11-87, 1f; 25-8-88, 1f; 62, 24-8-88, 1m.

## Conclusion

The number of odonate species that have been found in Galicia is 42, including *Orthetrum brunneum* which has not been collected in the last 80 years. This number is rather low compared with the richness of the Spanish fauna which contains 72 species (OCHARÁN, 1987; MICHELS & VERHEYEN, 1990).

Galicia has plenty of rivulets and streams, most of them unpolluted and with a very low mineral content (MARTÍNEZ ANSEMIL & MEMBIELA, 1992), but this habitat usually has just 7 species of odonates. The communities of these streams consist of *Calopteryx virgo*, *Lestes viridis*, *Pyrrhosoma nymphula*, *Platycnemis latipes*, *Onychogomphus uncatus*, *Boyeria irene* and *Cordulegaster boltonii*, and consequently these species are very common and widespread. For instance, PARDO (1992) found the above species in a two-year study of rivers Tea and Louro (Pontevedra province), and she only added *Oxygastra curtisii* and *Sympetrum sanguineum* to this community.

There are no true lakes in Galicia. The commonest types of standing water are the coastal lagoons which are common behind large beaches, being formed when the outlet of a stream is closed by a sand barrier. In these habitats, the diversity of odonates is not very high, but several interesting species, like *Ischnura elegans*, have their highest populations in some coastal lagoons (Valdovífo, loc. 24; Doniños, loc. 20; Muros, loc. 31). Most large to medium rivers have been dammed to form reservoirs, but their odonate communities are usually very poor. However, the only population of *Macromia splendens* that has been found in Galicia inhabits one such reservoir. Natural ponds are also rare in Galicia and, during the last decades, the biggest wetlands have ceased to exist. The wetland of Antela, in the province of Ourense, that

covered about 40 km<sup>2</sup>, was reclaimed during the 1950s, and at Gándaras de Budriño (loc. 7) in the province of Pontevedra, most of the area has been converted to industrial use. This situation makes urgent a survey of freshwater habitats of Galicia, because some species seem to be in clear danger of disappearing. Of special interest are the populations of *Coenagrion scitulum* and *C. mercuriale*, still quite common in Galicia but endangered species over most of their distribution ranges; *Oxygastra curtisii*, that inhabits most of the large rivers (Tambre, Ulla, Umia, Lérez), and *Macromia splendens* and *Gomphus graslini* that have been found at just one reservoir (loc. 0).

The following additional species are likely to occur in Galicia: *Lestes sponsa*, *Coenagrion caerulescens*, *Aeshna juncea*, *Anaciaeschna isosceles*, *Anax parthenope*, *Gomphus vulgatissimus*, *Onychogomphus forcipatus*, *Sympetrum meridionale*, *Sympetrum flaveolum*. Most of them have been found in the neighbouring Asturias or León provinces, and so it is likely that some colonies could be present in the eastern range of Lugo and Ourense provinces. A study of these areas might reveal much of interest.

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Addendum (11.10.95)

One male of *Sympetrum meridionale* was collected on 9-9-95 at locality 38 (O Ogrove). Taking into account this species and the records of *Hemianax ephippiger*, *Ciomphus vulgarissimus* and *Sympetrum pedemontanum* by Joachim Hoffmann (this book), the number of species collected in Galicia amounts to 47.

## Appendix

List of the locations where adult odonates have been captured, with their geographical coordinates.

Location	Province	Latitude	Longitude
0. Avión	Ourense	42° 23'	8° 13'
1. Baños (Lobios)	Ourense	41° 59'	8° 00'
2. Baralla	Lugo	42° 54'	7° 16'
3. Berducido (A Lama)	Pontevedra	42° 22'	8° 25'
4. Berreo (Trazo)	A Coruña	42° 59'	8° 30'
5. Berres (A Estrada)	Pontevedra	42° 45'	8° 25'
6. Bertamiráns (Ames)	A Coruña	42° 52'	8° 39'
7. Gándaras de Budiño (O Porriño)	Pontevedra	42° 05'	8° 38'
8. Bueu	Pontevedra	42° 19'	8° 17'
9. Burgueira (Oia)	Pontevedra	42° 00'	8° 50'
10. Camba (Laza)	Ourense	42° 03'	7° 27'
11. Candamil (Xermade)	Lugo	43° 22'	7° 46'
12. Canizo (A Gudiña)	Ourense	42° 03'	7° 07'
13. Castrogudín (Vilagarcía)	Pontevedra	42° 36'	8° 43'
14. Catoira	Pontevedra	42° 40'	8° 43'
15. Chaián (Trazo)	A Coruña	42° 58'	8° 32'
16. Con (Vilagarcía)	Pontevedra	42° 36'	8° 43'
17. Corrubedo (Ribeira)	A Coruña	42° 35'	9° 04'
18. Coutorredondo (Marín)	Pontevedra	42° 22'	8° 40'
19. Curtis	A Coruña	43° 09'	8° 03'
20. Doniños (O Ferrol)	A Coruña	43° 30'	8° 19'
21. Esteira (Viveiro)	Lugo	43° 40'	7° 36'
22. Fecha (Santiago de Compostela)	A Coruña	42° 57'	8° 37'
23. Franza (Brío)	A Coruña	42° 52'	8° 43'
24. Frouxeira (Valdoviño)	A Coruña	43° 36'	8° 09'
25. Goián (Tomiño)	Pontevedra	41° 57'	8° 46'
26. Lagoas-Marcosende (Vigo)	Pontevedra	42° 10'	8° 40'
27. Lantaflo (Portas)	Pontevedra	42° 34'	8° 40'
28. Lérez (Pontevedra)	Pontevedra	42° 27'	8° 38'
29. Lourezá (O Rosal)	Pontevedra	41° 59'	8° 48'
30. Lourizán (Pontevedra)	Pontevedra	42° 25'	8° 40'
31. Louro (Muros)	A Coruña	42° 45'	9° 06'
32. Marcón (Pontevedra)	Pontevedra	42° 25'	8° 36'
33. Montalvo (Sanxenxo)	Pontevedra	42° 24'	8° 51'

34. Monte Pedroso (Santiago de Compostela)	A Coruña	42° 53'	8° 34'
35. Mosteiro (Pol)	Lugo	43° 08'	7° 20'
36. Mougás (Oia)	Pontevedra	42° 03'	8° 52'
37. Nerga (Cangas do Morrazo)	Pontevedra	42° 16'	8° 50'
38. O Grove	Pontevedra	42° 29'	8° 52'
39. Ons (Bueu)	Pontevedra	42° 23'	8° 56'
40. Pantín (Valdoviño)	A Coruña	43° 38'	8° 06'
41. Ponte Bora (Pontevedra)	Pontevedra	42° 27'	8° 36'
42. Ponte Cadós (Bande)	Ourense	42° 01'	8° 00'
43. Ponte Carreira (Frades)	A Coruña	43° 02'	8° 16'
44. Ponte Maceira (Brión)	A Coruña	42° 52'	8° 47'
45. Ponte Sarandón (Vedra)	A Coruña	42° 46'	8° 28'
46. Pontearreas	Pontevedra	42° 11'	8° 31'
47. Pontecesures	Pontevedra	42° 43'	8° 38'
48. Pontesampaio (Pontevedra)	Pontevedra	42° 21'	8° 37'
49. Pontillón de Castro (Pontevedra)	Pontevedra	42° 30'	8° 37'
50. Portas	Pontevedra	42° 35'	8° 41'
51. Portela (Ames)	A Coruña	42° 56'	8° 37'
52. Portela (O Rosal)	Pontevedra	41° 56'	8° 48'
53. Prada (Manzaneira)	Ourense	42° 15'	7° 18'
54. Punta Faxilde (Sanxenxo)	Pontevedra	42° 25'	8° 53'
55. Salcedo (Pontevedra)	Pontevedra	42° 26'	8° 38'
56. San Xurxo de Sacos (Cotobade)	Pontevedra	42° 30'	8° 30'
57. Santa María de Xeve (Pontevedra)	Pontevedra	42° 28'	8° 35'
58. Sanxenxo	Pontevedra	42° 24'	8° 48'
59. Seixo (Marín)	Pontevedra	42° 22'	8° 43'
60. Sigríeiro (Oroso)	A Coruña	42° 58'	8° 26'
61. Tenorio (Cotobade)	Pontevedra	42° 28'	8° 33'
62. Vidán (Santiago de Compostela)	A Coruña	42° 53'	8° 34'
63. Vilagarcía	Pontevedra	42° 36'	8° 45'
64. Vilamarín	Ourense	42° 28'	7° 53'
65. Vilameá (A Ponte Nova)	Lugo	43° 20'	7° 13'
66. Vilar (Barreiros)	Lugo	43° 33'	7° 15'
67. Viveiro	Lugo	43° 39'	7° 35'
68. Xuño (Porto do Son)	A Coruña	42° 38'	9° 02'