

## NOTA / NOTE

# First records of the family Cryptopidae Kohlrausch, 1881 (Chilopoda: Scolopendromorpha) in Galicia (NW of the Iberian Peninsula).

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**Abstract:** The family Cryptopidae Kohlrausch, 1881 is reported for the first time in Galicia, thus expanding the Iberian known distribution of *Cryptops (C.) anomalans* Newport, 1844 (first record for Lugo) and *Cryptops (C.) hortensis* (Donovan, 1810) (first record for Lugo and Pontevedra). Ecological remarks and updated maps of known distribution of both species in the Iberian Peninsula are provided.

**Key words:** Chilopoda, Cryptopidae, *Cryptops anomalans*, *Cryptops hortensis*, Galicia, faunistics.

**Resumen:** Primeras citas de la familia Cryptopidae Kohlrausch, 1881 (Chilopoda: Scolopendromorpha) en Galicia (NO de la península ibérica). Se cita por primera vez la familia Cryptopidae Kohlrausch, 1881 en Galicia y se amplía la distribución ibérica conocida de *Cryptops (C.) anomalans* Newport, 1844 (primera cita para Lugo) y *Cryptops (C.) hortensis* (Donovan, 1810) (primera cita para Lugo y Pontevedra). Se proporcionan notas ecológicas y mapas actualizados de la distribución conocida de ambas especies en la península ibérica.

**Palabras clave:** Chilopoda, Cryptopidae, *Cryptops anomalans*, *Cryptops hortensis*, Galicia, faunística.

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Cryptopidae Kohlrausch, 1881 is a family of anophthalmous centipedes that comprises 3 genera and ca. 187 species widely distributed in temperate and tropical regions throughout the world (Bonato *et al.*, 2016). Only the genus *Cryptops* Leach, 1816 is known from the Iberian Peninsula, where 8 species within 2 subgenera have been listed (Vadell, 2013; Giribet, 2015). Six species are ascribed to the nominotypical subgenus: *C. anomalans* Newport, 1844, *C. hispanus* Brölemann, 1920, *C. hortensis* (Donovan, 1810), *C. lobatus* Verhoeff, 1931, *C. parisi* Brölemann, 1920, and *C. trisulcatus* Brölemann, 1902, while the remaining 2 taxa belong to the subgenus *Trigonocryptops* Verhoeff, 1906: *C. longicornis* (Ribaut, 1915) and *C. similis* Machado, 1953. Ecology of the *Cryptops* species is poorly known in the Iberian Peninsula since records are sparse and disjointed. So the aim of this report is to provide the first records of the family Cryptopidae and the species *C. anomalans* and *C. hortensis* in Galicia and to expand their known distribution in the Iberian Peninsula. In addition, ecological remarks are given and new maps of known distribution in the Iberian Peninsula are provided.

The specimens were hand collected by the author (unless stated otherwise) and then conserved in ethanol 70% to be later identified with a binocular stereomicroscope model NOVEX AP-2 (10-60x). Papers on the morphology of the *Cryptops* species reported from the Iberian Peninsula were consulted in determining the specimens (Brölemann, 1930; García-Ruiz, 1997; Vadell, 2013). Geographical data of the prospected localities are given in Table 1, including environmental data extracted from <https://es.climate-data.org/>.

Maps were generated with QGIS Desktop 3.4.4 with GRASS 7.4.4. (Datum ETRS89), attending to previous records reported in the literature. Pictures of *habitus in vivo* of the specimens were taken with a Nikon D810 camera equipped with a Sigma 150 OS macro lens (*C. anomalans*, Fig. 1) and with a Panasonic Lumix DMC-FZ200 camera equipped with a Raynox DCR-250 macro lens (*C. hortensis*, Fig. 2).

**Table 1.** - Study areas. **MGRS** - Military Grid Reference System. **A** - Altitude, expressed in metres above sea level (masl). **T** - Mean annual temperature, expressed in °C. **P** - Mean annual precipitation, expressed in mm.

Province	Council	Zone	Habitat	MGRS	A	T	P
Lugo	Ribadeo	Rinlo	Coastal	29TPJ53002456	9	14.2	863
Lugo	Sober	Ermida da Barca	Pinewood	29TPG10119776	151	13.2	952
Lugo	Viveiro	-	Pastureland	29TPJ13943523	84	13.7	968
Pontevedra	Caldas de Reis	Fervenza de Segade	Riparian wood	29TNH30961717	71	14.7	1253
Pontevedra	Silleda	Fervenza do Toxa	Oak	29TNH59503412	255	12.6	1375

### *Cryptops (Cryptops) anomalans* Newport, 1844

**Material examined:** Lugo: Ribadeo/Rinlo, 17/08/2019, 3 specimens; Sober/Ermida da Barca, 27/07/2019, 1 specimen (A.J. Narro Martín *leg.*); Viveiro, 12/08/2018, 2 specimens.

**Distribution remarks:** These results make possible to first record *C. anomalans* in the province of Lugo, being also the first record of the species in Galicia (See Fig. 3 for other reported locations in the Iberian Peninsula).

**Ecological remarks:** The specimens were collected under stones in pinewoods and pasturelands. Three specimens were found near the coast under a stone in the presence of an ant nest.

### *Cryptops (Cryptops) hortensis* (Donovan, 1810)

**Material examined:** Lugo: Viveiro, 12/08/2018, 2 specimens. Pontevedra: Caldas de Reis/Fervenza de Segade, 07/03/2016, 2 specimens; Silleda/Fervenza do Toxa, 06/03/2016, 3 specimens.

**Distribution remarks:** These data make possible to first record *C. hortensis* in the provinces of Lugo and Pontevedra, being also the first record of the species in Galicia (See Fig. 4 for other reported locations in the Iberian Peninsula).

**Ecological remarks:** The specimens were found in decaying wood and under stones in riverside woodlands of *Fraxinus angustifolia* Vahl. and *Alnus glutinosa* (L.) Gaertn. Also in native forests of *Quercus robur* L. with *Castanea sativa* Mill. and *Quercus suber* L.

Records of *C. anomalans* and *C. hortensis* in the Iberian Peninsula are scarce and often concentrated in localities where the Spanish and Portuguese chilopodologists had easy access to develop research activities (Machado, 1952; Barace & Herrera, 1980; Salinas, 1990; García-Ruiz, 1997). As a result, the distribution of these species in the Iberian Peninsula is poorly known and incomplete (Figs. 3-4), although both species are expected to occur throughout the Iberian Peninsula (D. Cabanillas, unpub. data). In addition, *C. anomalans* and *C. hortensis* were found in sympatry in the province of Lugo as it was observed in other northern localities (Cabanillas, 2019), thus confirming these species coexist at least in some areas of the north-west of the Iberian Peninsula. It is important to point out the need of researching the Iberian distribution of centipedes since there is an important lack of knowledge for most species due to the small number of studies and collectors. Nevertheless, the present results provide new data for Galicia and expand the known distribution of two cryptopids in the Iberian Peninsula.

Figs. 1-2.- *Habitus in vivo*.

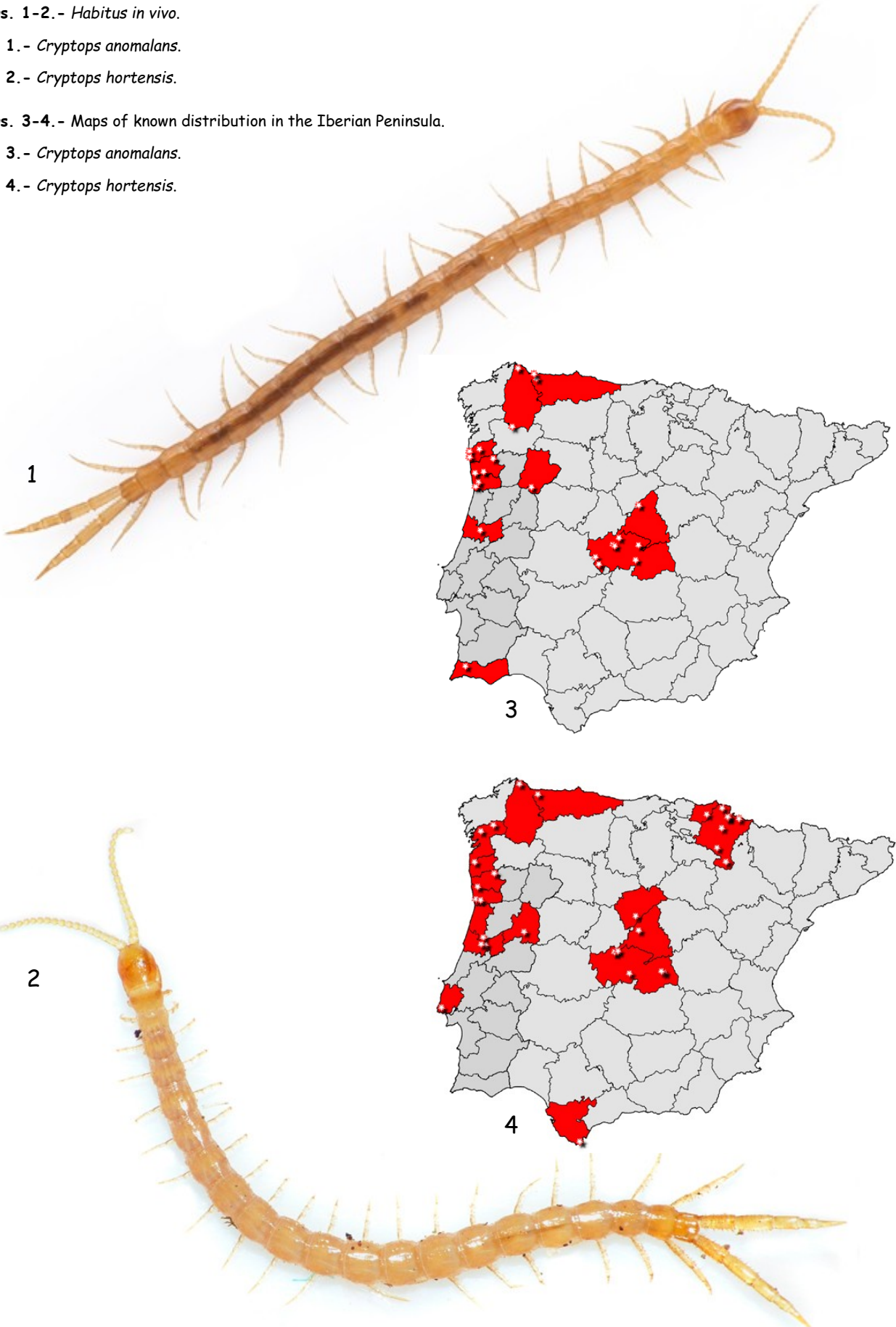
1.- *Cryptops anomalans*.

2.- *Cryptops hortensis*.

Figs. 3-4.- Maps of known distribution in the Iberian Peninsula.

3.- *Cryptops anomalans*.

4.- *Cryptops hortensis*.



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