
New records of *Piscicola geometra* (Linnaeus 1758) (Hirudinea, Piscicolidae) in Ebro River Basin (N Spain).

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ABSTRACT

This note represents a contribution to the knowledge of the presence of the fish leech *Piscicola geometra* (Linnaeus 1758) (Hirudinea, Piscicolidae) in the Ebro River Basin. This species was collected in two rivers in the Ebro River Basin. Although this species has been reported from the Iberian Peninsula, these records are scarce and, to the author's best knowledge, this study presents the first record of *Piscicola geometra* in the Ebro River Basin.

• KEY WORDS: Fish leech, *Piscicola geometra*, Ebro River Basin.

RESUMEN

Esta nota es una contribución al conocimiento de la presencia de la sanguijuela *Piscicola geometra* (Linnaeus 1758) (Hirudinea, Piscicolidae) en la cuenca del río Ebro. Esta especie fue hallada en dos ríos de la cuenca del Ebro. Aunque esta especie ya ha sido citada en la Península Ibérica, sus registros son escasos y, por lo sabido por los autores del trabajo, estas serían las primeras citas de *Piscicola geometra* en la cuenca del río Ebro.

• PALABRAS CLAVE: Sanguijuela, *Piscicola geometra*, Cuenca del río Ebro.

LABURPENA

Idatzi honen bidez *Piscicola geometra* (Linnaeus 1758) (Hirudinea, Piscicolidae) izainaren ezagutza maila areagotzen da Ebro ibaiaren arroan. Espezie hau

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Ebro ibaiaren arroko bi errekatan aurkitu da. Nahiz eta jada espeziea Iberiar Penintsulan deskribatua izan, erregistroak oso eskasak dira eta, lan honen egileek dakitenaren arabera, honako hauek Ebro ibaiko arroan *Piscicola geometra* espeziearen lehenengo zitak izango lirатеke.

• **GAKO-HITZAK:** Izaina, *Piscicola geometra*, Ebro ibaiko arroa.



Leeches (Hirudinea) historically have been considered as a separate class of the phylum Annelida or as a subclass of the class Clitellata, with Oligochaeta being the other subclass. However, some studies suggest that they are specialized oligochaetes of equivalent rank to the order Lumbriculida (Siddall *et al.*, 2001; Erséus & Källersjö, 2004). They have segmented bodies and have suckers at both ends. The body has 34 segments, but the true segmentation is internal and usually each segment is superficially divided into 3-5 annuli, although sometimes more than ten annuli can be observed. The majority of leeches are freshwater species inhabiting stagnant and running waters, although some species can be found in terrestrial and marine environments. They are all carnivores and feed on the flesh or fluids of other animals. Many leeches are predators of invertebrates, whereas some species are hematophagous that feed on blood from vertebrate and invertebrate animals. Leeches were traditionally divided into 2 suborders: Rhynchobdellida, in which leeches have a protrusible proboscis, and Arhynchobdellida, in which leeches lack a proboscis. The Rhynchobdellida included 3 families, whereas the Arhynchobdellida included 15 families (Minelli, 1979).

According to Aguado *et al.* (2011) a total of 28 species of leeches have been cited in Spain. Leech species presence and distribution studies have been carried out in different areas of Spain, as Andalucía (García Mas *et al.*, 2008), Asturias (Fernández Bernaldo de Quiros & Benito, 1981; Fernández Bernaldo de Quiros, 1982; García Más & Jiménez, 1984), Castilla La Mancha (García Mas *et al.*, 1990) or Valencia (García Mas *et al.*, 1998). However, the available data are limited and scattered, being particularly scarce for fish leeches (F. Piscicolidae). Members of the Piscicolidae are generally parasitic on marine and freshwater fish, with the exception of some species that may feed on mysid shrimp and amphipods (Williams & Burreson, 2006). They are found virtually anywhere on the external body surfaces of fish, such as the skin, mouth, branchial chamber, or cloaca (Burreson, 1995), and they can induce tissue damage, osmoregulatory problems, and act as vectors of pathogens e.g., blood-borne protozoa (Burreson, 1995). Three species of this family have been found



Fig. 1.- *Piscicola geometra*. A: Specimen captured in the River Segre in Lleida (Ebro River Basin). B: Detail of head and anterior sucker.

Fig. 1.- *Piscicola geometra*. A: Ejemplar capturado en el río Segre en Lleida (Cuenca del río Ebro). B: Detalle de la cabeza y la ventosa anterior.

in Spain (Jiménez & García Mas, 1980-81), but only *Piscicola geometra* (Linnaeus 1758) live in freshwater. In Spain this species has been only cited in the Albufera of Valencia and in the Louro river in Galicia (Jiménez & García Mas, 1980-81; González & Cobo, 2006). Due to this scarcity of data about presence of *P. geometra*, their finding and identification could be considered interesting in order to increase the knowledge on their distribution in Spain.

During the 2013 water quality survey carried out in the Ebro River Basin, two specimens of the fish leech *P. geometra* (Fig. 1) were found in two sample stations belonging to two rivers. Both specimens were captured on 27th August in the Segre River in Lleida (Lleida) (UTM: 31T CG 017073; Altitude: 140 m) and in the Cinca River in Fraga (Huesca) (UTM: 31T BG 786000; Altitude: 90 m). Both sampling stations were located in the lower section of each river. Physico-chemical parameters of the water in both rivers are shown in Table 1. According to diatom and macroinvertebrate communities (IPS and IBMWP indices) ecological status in the Segre River was Moderate or Poor, whereas in the Cinca River was Moderate. *Piscicola geometra* is a non-specific ectoparasite of many fish, e.g., salmon (*Salmo salar*), brown trout (*Salmo trutta*), charr (*Salvelinus*

Physico-chemical parameter	Cinca River in Fraga	Segre River in Lleida
Water Temperature (°C)	21,9	19,0
pH	8,02	7,57
Conductivity (µS/cm)	1105	411
Dissolved Oxygen (mg/l)	11,30	8,89
Dissolved Oxygen (%)	128,8	96,0

Table 1.- Measured physico-chemical parameters of the water in the Segre River in Lleida and in the Cinca River in Fraga.

Tabla 1.- Parámetros físico-químicos del agua medidos en los ríos Segre en Lleida y Cinca en Fraga.

alpinus), bream (*Abramis brama*), gudgeon (*Gobio gobio*), European eel (*Anguilla anguilla*), perch (*Perca fluviatilis*), gibel carp (*Carassius gibelio*), and common carp (*Cyprinus carpio*) (Bielecki, 1997; Arslan and Emiro lu, 2011). In the Segre and Cinca Rivers *P. geometra* parasitize probably some cyprinid species inhabiting these lower reaches of both rivers. This species is most often found on fish during the early spring and late fall and it leaves for open water during the summer, just the season in which both specimens were captured. To the author's best knowledge, this study presents the first record of *P. geometra* in the Ebro River Basin.

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