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# PRIMERA CITA DE *Chondrostoma polylepis* STEINDACHNER, 1865 (OSTARIOPHYSI, CYPRINIDAE) EN LA CUENCA DEL RÍO SEGURA, S.E. DE ESPAÑA.

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**Key words:** *Chondrostoma polylepis*, Distribution, Inter-basin water transfer, Spain.

## ABSTRACT

FIRST RECORD OF *Chondrostoma polylepis* STEINDACHNER, 1865 (OSTARIOPHYSI, CYPRINIDAE) IN THE BASIN OF THE RIVER SEGURA, S.E. OF SPAIN.

In this paper, the geographical distribution of *Chondrostoma polylepis* Steindachner, 1865, has been enlarged to the basin of the river Segura. This represents the first report of its occurrence in the Segura river basin, it seems to have a restricted distribution and might be a recent introduction. We think that introduction of this non-autochthonous species into the Mundo river from the Tajo river basin is a consequence of inter-basin water transfer.

*Chondrostoma polylepis* (Steindachner, 1865), Iberian Nase, is an endemic cyprinid from the Iberian peninsula (ELVIRA, 1990; ELVIRA, 1995; ALMAÇA, 1995), distinguished by its straight mouth with a horny layer on the lower lip thick (DOADRIO & ELVIRA, 1986; ELVIRA, 1987; DOADRIO *et al.*, 1991). No clear sexual dimorphism has been found in this species, but there are some slight differences in fin size, head size and other biometrics characters (ELVIRA & LOBON-CERVIA, 1984).

There are two accepted subspecies, *Chondrostoma polylepis polylepis* and *Chondrostoma polylepis willkommii* (Steindachner, 1866) (LOZANO REY, 1935; ELVIRA, 1987; ELVIRA, 1991), with a central and western distribution in the Iberian peninsula. *Ch. p. polylepis* lives in the central and north-western river basins of the Iberian Peninsula: Eo, Eume, Allones, Tambre, Ulla, Umia, Masma, Miño, Limia, Cavado, Duero, Ave, Vouga, Mondego, Alcoa, Tajo, and Sado all of which drain into the Atlantic Ocean, but also in the Júcar river basin, which drains into the Mediterranean and into which it was probably introduced (DOADRIO & ELVIRA, 1986; ELVIRA, 1987; DOADRIO, 1988; DOADRIO *et al.*, 1991; GÓMEZ-CARUANA & DÍAZ, 1991; ELVIRA, 1995).

However, there has been no previous recording of *Ch. polylepis* in the Segura river basin, and MAS (1986) found it neither in his review nor in his samples. The aim of this note is to point to the presence of *Ch. p. polylepis* in the river Segura basin, in which some specimens were collected 62 Km downstream from headwaters of the river Mundo, the main tributary of the river Segura, near Liétor (Albacete, 30SWH931632). Electrofishing was used to collect fish between June 1996 and March 1997. Some specimens are preserved in the ichthyological collection of Animal Biology Department of the University of Murcia (ChpLI96-1 / ChpLI96-8).

A sample from 2 November 1996 consisted of 53 specimens of Iberian nase was fixed in formaldehyde solution (10%). The available material (n = 53) was analysed as regards 5 morfometric and meristic characters as used by ELVIRA (1987) (Table I). The results are no much different from Elvira's results.

The collection site represents the upper limit of an intensive fishing preserve on Talave reservoir, Talave dam being the first dam in the Tajo-Segura transfer system in the Segura basin. Both this interbasin canal and the river Mundo flow into



Table I. Meristic features in the sample of *Chondrostoma polylepis* (StL= 99-235 mm, n=53). R= range; M= mode; Mean; SD= standard deviation; lim.95%= 95% confidence limits; CV= coefficient of variation; n= sample size. LLS= lateral line scales; TLS= transversal line scales; DFR= branched rays of the dorsal fin; AFR= branched rays of the anal fin.

Tabla I. Características merísticas en la muestra de *Chondrostoma polylepis* (StL= 99-235 mm, n=53). R= rango; M= moda; Mean= Media; SD= Desviación estándar; lim.95%= 95% límites de confianza; CV= coeficiente de variación; n= tamaño muestral. LLS= número de escamas en la línea lateral; TLS= número de filas de escamas en la línea transversa mayor; DFR= número de radios ramificados de la aleta dorsal; AFR= número de radios ramificados de la aleta anal.

|     | R           | M       | Mean   | SD    | lim.95%       | CV   | n  |
|-----|-------------|---------|--------|-------|---------------|------|----|
| LLS | 65-76       | 70      | 70.909 | 2.409 | 69.581-70.909 | 3.43 | 53 |
| TLS | 10-12/1/6-8 | 11/1/07 | 18.094 | 0.791 | 17.876-18.312 | 4.37 | 53 |
| DFR | 8-10        | 9       | 9.096  | 0.409 | 8.982-9.210   | 4.49 | 52 |
| AFR | 8-11        | 10      | 9.868  | 0.440 | 9.747-9.989   | 4.46 | 53 |

Talave reservoir. The Tajo-Segura transfer system is the largest in Spain, and transports water from the mountaneous area of the upper reaches of the river Tajo to the Segura river, which supplies water to a traditional irrigation area. This water transfer has operated since 1978 and transports 100 to 350 million cubic metres of water per year, according to the availability (GARCÍA DE JALÓN *et al.*, 1992).

The ecological consequences of interbasin water transfer through natural stream systems remain poorly documented (MATTHEWS *et al.*, 1996). DAVIES *et al.* (1992) reviewed water diversion projects in Africa, Australia and the U.S.A. and emphasized the importance of assessing the ecological impact before construction. Fish dispersion along interbasin canals and the fish assemblage structure recorded were presented and discussed by MEADOR *et al.* (1990); in the south-western United States there are interbasin canals which have a fish fauna comparable to that of many other small streams in the same area (MATTHEWS & GELWICK, 1990; MEADOR & MATTHEWS, 1992).

We think that *Ch. p. polylepis* is another example of a fish being introduced from the Tajo river basin into the Segura river basin, as was the gudgeon (*Gobio gobio* L., 1758) and golden carp (*Carassius auratus* L., 1758) which, prior to the transfer system mentioned, did not exist in the Segura basin (MAS, 1986; GARCIA DE JALON *et al.*, 1992).

We have confirmed the absence of this species upriver of Liétor as far as Ayna (Albacete, 30SWH905666), which is 40 Km downstream from the headwaters of the river Mundo. Furthermore the Fishing Service has confirmed that this species has not been introduced into the intensive fishing preserve of Talave. We therefore, think that the occurrence of this species in the Segura river basin is a consequence of the Tajo-Segura interbasin water transfer system.

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