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THE FIRST RECORD OF THE SIBERIAN STURGEON (*ACIPENSER BAERII*) IN SLOVAK-HUNGARIAN STRETCH OF THE DANUBE RIVER.

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Abstrakt: Autori opisujú výskyt jedinca jesetera sibírskeho (*Acipenser baerii*, Brandt, 1869), uloveného v slovensko-maďarskom úseku Dunaja. Druhovú príslušnosť určili na základe biometrickej analýzy meristických a plastických znakov uloveného jedinca, porovnaním so znakmi ostatných druhov jeseterov.

Kľúčové slová: jeseter sibírsky, *Acipenser baerii,* Dunaj, Slovensko, morfometria

Introduction

Siberian sturgeon inhabits basins of big Siberian rivers. Due to its favorable growth qualities this species has been also bred in captivity. The first trials with breeding of Siberian sturgeon were made at the territory of former Soviet Union and later, in the second half of 20th century also in some countries of Central and Western Europe. It is of public knowledge that out of its native area Siberian sturgeon is not introduced into the wild, occasional occurrences of this species in native environment are probably caused by escapes from breeding sites.

Presented work brings the description of Siberian sturgeon caught at the Slovak-Hungarian stretch of Danube, where this species was not recorded at past.

Material and method

Observed individual was fished at the main stream of the Danube downstream from Štúrovo (river km 1717) on September 24, 2005 (6:30 p. m.) by angler Ervín Bajnok on fly larvae combined with earthworm. The fish was measured, weighted and documented and then it was deep freezed. Defrosted specimen was investigated by the means of biometric analysis at the Branch Working Place of Fishery Research – Slovak Center of Agricultural Research in Častá village on November 18, 2005.

Results of analysis of measurements and meristic data were compared with the appearance of living fishes of the same species, bred at the mentioned institution, as well as with data published by Berg (1948), Hochleithner and Gessner (2001) and CITES I (2001).

Examined meristic characters included the number of rays in each fin, number of dorsal, lateral and ventral scutes, or postanal plates as well as the number of outer and inner gill rakers of the 2nd gill arch. Body proportion values are indicated as a percentage of the total length of the fish.

The age of the fish was determined at the cross-section of the first hard ray of the pectoral fin observed through Zeiss Dokumator - Lesegerät viewing machine.

Tissue sample from pectoral fin for possible genetic analysis was fixed in 96% ethanol.

To determine the sex of the individual it was necessary to open the body cavity (from anus to the middle of the abdominal part of the body) and a tissue sample from gonads was ablated. It was fixed in 4% formaldehyde prior to examination.

Results

Angled fish was a female of total length 1 310 mm, 12 800 g body weight and the age of 9+ years. Her gonads demonstrated the II. stage of maturity.

Number of rays in each fin: D 42, P 36, V 24, A 25, C (lower lobe) 77.

Number of bony scutes: dorsal – 13, lateral – 42, ventral – 10.

Number of fulcrum: dorsal part of the caudal peduncle – 8, ventral part of the caudal peduncle – 13.

Number of gill rakers (2. gill arch): outer – 32, inner – 37.

Comparison of meristic characters of examined individual with published data is presented in Table 1., measurements are presented in Table 2.

At the body surface of the fish small, rough, star-shaped platelets are scattered, spread over all the body. The general color is brownish-grey darkening towards the dorsal part and fading to grey, almost white, towards the ventral part of the body. At the sides, grayish spots are visible. The color of the bony scutes is similar to the underlying part of the body; dorsal scutes are the darkest and ventral ones are the lightest. The lower lip of the fish bares the distinct central interruption. The upper lip is slightly arcuate. Unciliated barbels are corrugated at the inner edge. Near the upper edge of gill rakers triple horn-like structures are visible.

Discussion

As can be inferred from the outer appearance of the treated individual and biometric analysis data compared with the data of Berg (1948) and other authors cited in this book, as well as Hochleithner and Gessner (2001) and CITES (2001), this fish belongs to the species *Acipenser baerii* Brandt, 1869. Most of the Russian authors mentioned in the publication of Berg (1948) distinguish forms of the Siberian sturgeon according to the length of rostrum. At the north Siberian area forms with short, middle and long rostrum occur. The observed individual belongs to the forms with middle rostrum according to Berg's classification.

Because of the single caught of Siberian sturgeon it is impossible to determine the present distribution of the species at the Slovak part of the Danube. Accidental escapes of the economically important species from the breeding stations to the wild are usually unreliably documented, especially if it happens during the floods, handling the fishes or emptying the breeding pools. As the fish was caught by angling, it can be presumed that there may be more of the same species at the stretch of the river. However, the assessment of their abundance or reproduction abilities is almost impossible in such a big river as Danube.

Remarkable are also the recent catches of one hybrid of Siberian sturgeon *Acipenser baerii* × *Acipenser* sp. (Krupka, Masár and Turanský 2000) in the main stream of Danube near Čenkov village (river km 1733), as well as of one individual of American paddlefish

(*Polyodon spathula*), recorded by Áč and Šubjak (2005) also in the main stream of Danube (Čuňovo dam near Šamorín). In both cases the escape of the breeding is suspected, the latter could be also released by pet fish keepers.

One of the unanswered questions related to the above mentioned occurrence of Siberian sturgeon is the length of the period that the fish survived in natural conditions. Determination of its age based on a chosen bony structure and distances between annular rings did not allow telling at what age the individual invaded to the Danube River. However its big size and young age led to presumption that it spent only a short time in the wild. Such a rapid growth is typical only for farm bred individuals of this species. In wild the individuals of the same size are usually much older. Hochleithner and Gessner (2001) published the age of comparably large individuals of Siberian sturgeon in its native environment of about 20 years. However, this comparison is only of informative value, because of totally different natural factors in Danube River basin and Siberia.

This hypothesis can be opposed by the evidence of fat tissue in body cavity of treated individual that was of conspicuously yellow color. This type of coloring has been observed in sterlets (*Acipenser ruthenus*) caught in the main stream of Danube. Bred fishes lack this color due to absence of natural food rich in carothenoids. This can led to presumption that treated individual spent in Danube suitable time to depositing the pigments from natural food in its fat.

Summary

Described individual of the sturgeon angled on September 24, 2005 in Danube near Štúrovo (1717 r. km) is Siberian sturgeon (*Acipenser baerii* Brandt, 1869).

Observed fish is a female of the total length 1 310 mm, weight 12 800 g and age of 9+. Her gonads were in II. stage of maturity.

The origin of the fish is unknown, most probably it escaped from unspecified fish farm.

Formaldehyde preserved specimen is deposited in the ichthyological collection of the Slovak National Museum – Natural History Museum under the evidence number Ry 6997.

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Table 1. Meristic data of siberian sturgeon (*Acipenser baerii*) angled on 24th September 2005 in Slovak-Hungarian stretch of Danube River (r. km 1717), and its comparison with the literary data

Parameter	Our material	after CITES guide (2001)	after Berg (1948)
dorsal fin rays	42	30 - 56	38 - 52
anal fin rays	25	17 - 33	20 - 31
dorsal scutes	13	10 - 20	12 - 19
lateral scutes	42	32 - 62	37 - 56
ventral scutes	10	7 - 16	9 - 15
gill rakers	32 / 37?	20 / 49	28 / 45

Table 2. Measurements (in % of TL) of specimen of siberian sturgeon *(Acipenser baerii)* angled on 24th September 2005 in Slovak-Hungarian stretch of Danube River (river km 1717).

Parameter	In % of TL
Predorsal distance	61,0
Preventral distance	53,6
Preanal distance	66,5
Distance P - V	33,7
Distance V - A	14,4
Length of C peduncle	9,9
Body depth (max.)	12,1
Body depth (min.)	2,3
Length of D	12,0
Height of D	10,0
Length of A	6,3
Height of A	8,8
Length of P	11,0
Length of V	8,4
Head length	19,1
Preoorbital distance	9,2
Supraorbital distance	9,1
Interorbital width	5,6
Eye diameter	1,6
Head depth	9,0
Head depth at eye	4,8
Snout – mouth distance	9,4
Snout – barbel base distance	5,8
Barbel base – mouth distance	4,0
Barbel length	3,4 /4,1
Snout width at barbels base	4,9
Head width at mouth	7,9

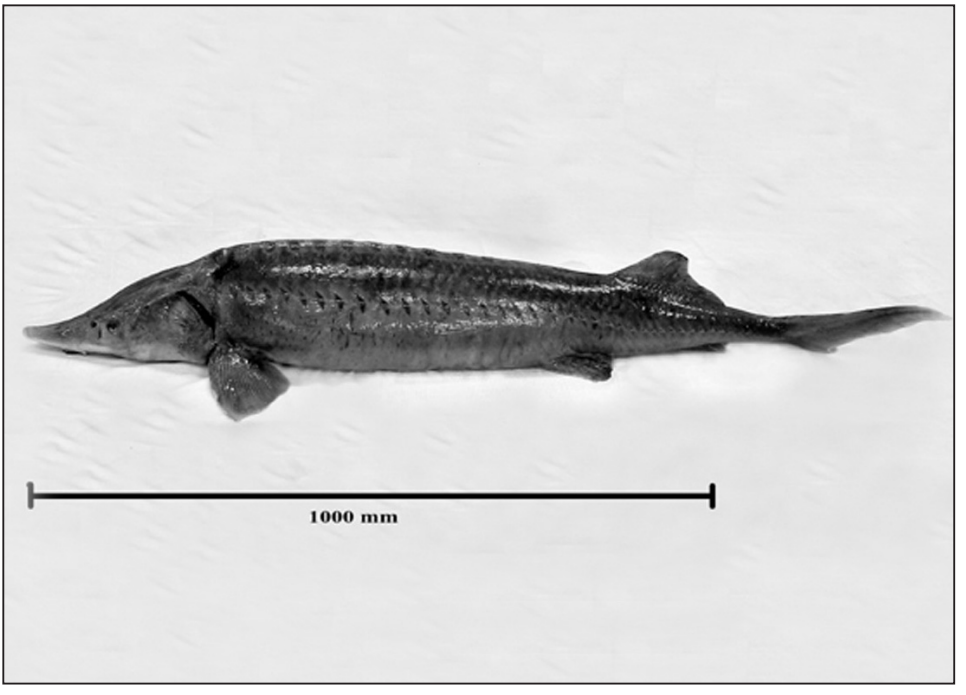

Figure 1. *Acipenser baerii* Brandt, 1869 from the Danube at Štúrovo (Slovakia), lateral view.

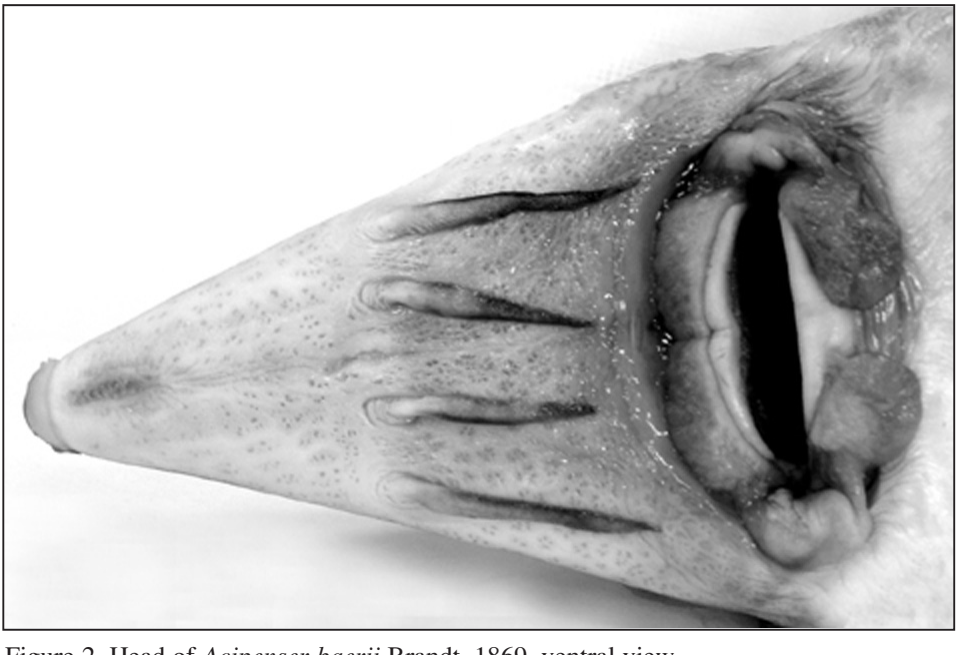

Figure 2. Head of *Acipenser baerii* Brandt, 1869, ventral view.