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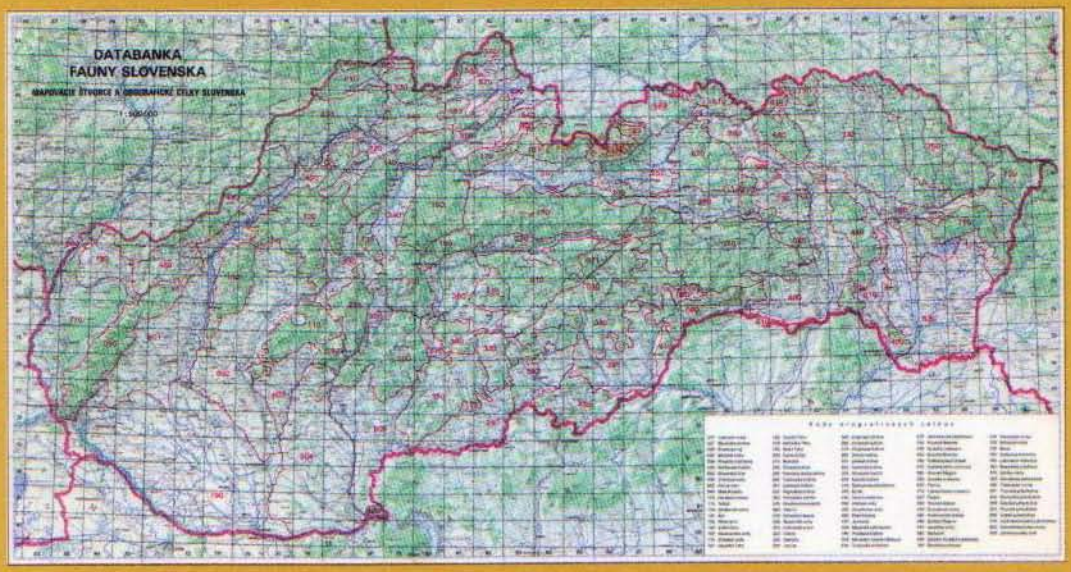
Contribution to the knowledge of the diversity of fauna in Slovakia



Editors
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SHORT COMMUNICATION

First record of the pirapitinga *Piaractus brachypomus* (Actinopterygii: Serrasalmidae) in Slovakia

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The author describes the discovery of a male pirapitinga – *Piaractus brachypomus* (Cuvier, 1818), 222 mm long and weighing 440 g, caught in the Zelená Voda reservoir at Nové Mesto nad Váhom (Slovakia).

Key words: *Piaractus brachypomus*, morphometrics, age, growth, Danube basin, Slovakia.

Piaractus brachypomus (Cuvier, 1818)

On June 20, 2002, the angler, Mr. Štefan Bielik, caught a fish in the Zelená Voda reservoir (DFS 7273 – reference grid number of the Databank of Fauna of Slovakia) near Nové Mesto nad Váhom (Slovakia) that, in appearance, resembled the piranha. He reported his unusual catch to the local organization of the Slovak Anglers' Union where he learned that one such specimen had already been caught in that site, but had not been preserved. The news of the presence of piranha in the reservoir, a favorite recreation spot with tourists from home and abroad, spread fast. The fish became an item of interest to the media, and soon also to the local police at Nové Mesto nad Váhom, as they received instructions to begin an investigation into a criminal case of public menace.

Mr. Bielik readily handed in his catch to the Slovak National Museum. As the fish appeared to be in a good physical condition, we transferred it to the Department of Zoology, Faculty of Natural Sciences Comenius University in Bratislava and kept it under observation in an aquarium for several days. However, it was extremely timid, refused all food and on the 3rd day (the 18th day after capture) began to be restless, lay on one side and finally ceased to give signs of life. We therefore preserved it in a 4% formaldehyde solution. The fish is deposited in the collections of the Slovak National Museum in Bratislava under the number SNM-RY-161228.

Diagnosis

D iii 14, A iii 22, P i 104, V i 7, C v 9 + 8 v, lateral line scales 104 $^{33}/_{37}$, gillrakers count 17 (in the lower half) + 1 + 18 (in the upper half of the first gill arch). There are 29 prepelvic and 24 postpelvic scutes (serrae) on the belly.

Description

The standard length of the specimen (Fig. 1), measured from the tip of upper lip up to the base of caudal fin, is 222 mm (fork length = 263 mm, total length = 283 mm) and body

Fig. 1. *Piaractus brachypomus* from the Zelená Voda reservoir (Slovakia), 222 mm of standard length.

weight is 540 g. Sex: male.

Measurements in % of standard length: head length 29 (up to margin of opercular bone), predorsal distance 56.3, preventral distance 51.1, preanal distance 76.1, distance D – adipose fin 15.6, caudal peduncle length 10.0, caudal peduncle depth 12.0, body depth 50.9, length of D 20.9, length of A 24.3, length of P 21.5, length of V 18.7, length of adipose fin base 3.0, depth of D 22.5, depth of A 16.5. Measurements in % of head length: preorbital distance 31.6, diameter of eye 20.8, postorbital distance 53.8, interorbital width 52.7, suborbital depth 16.2, head depth 89.5 (measured at the level of eye center), length of maxilla 22.9 (Tab. 1).

The neurocranium is high, with the parasphenoid bent at an angle of about 130° and a high orbitosphenoid (Fig. 2a). The frontal bones are separated by the fontanella, which reaches as far as the parietal bones. The premaxillary bones are provided with an outer series of teeth separated from the inner series by the hiatus in the shape of a triangle, the maxillary bones carry one tooth each. The infraorbital bones do not cover the cheeks completely (Fig. 2b). The height of the opercular bone is about 2.5 times its width. Gill rakers are fixed to the branchial bones by an extended and split base, are relatively short and carry minute thorns on the surface (Fig. 2c). The swim bladder is of an elongated form; its anterior chamber is much smaller than the posterior one (Fig. 2e).

The scales are cycloid with smooth caudal margin; there are no small accessorial scales on the body. The age according to the scales is 6+ (Fig. 2d). The annual rings (annuli) were measured on two scales of different shapes, taken off the middle of the body close to and above the lateral line. A total of 12 radii in all were measured on each scale, i.e. besides the oral (O), dorsal (D), ventral (V) and caudal radius (C), a further eight were included, viz. OOD, ODD, DD, DCC, CCV, VCC, VVO and VOO. Growth rates for the preceding years of life were back-calculated by means of the Lea's (1910) method for each of the above radii, and the following mean values were computed for each year of life: 47 mm for the first, 78 mm for the second, 114 for the third, 149 for the fourth, 180 for the fifth and 204 for the sixth year of life. Figure 3 shows the mean, and also the maximum and minimum, values.

Remarks

A comparison of the morphological and anatomical signs of the fish caught in the Zelená Voda reservoir near Nové Mesto nad Váhom in Slovakia, with those reported by Géry (1977), Machado-Alison (1982, 1986) and Géry et al. (1987) showed that this fish be-

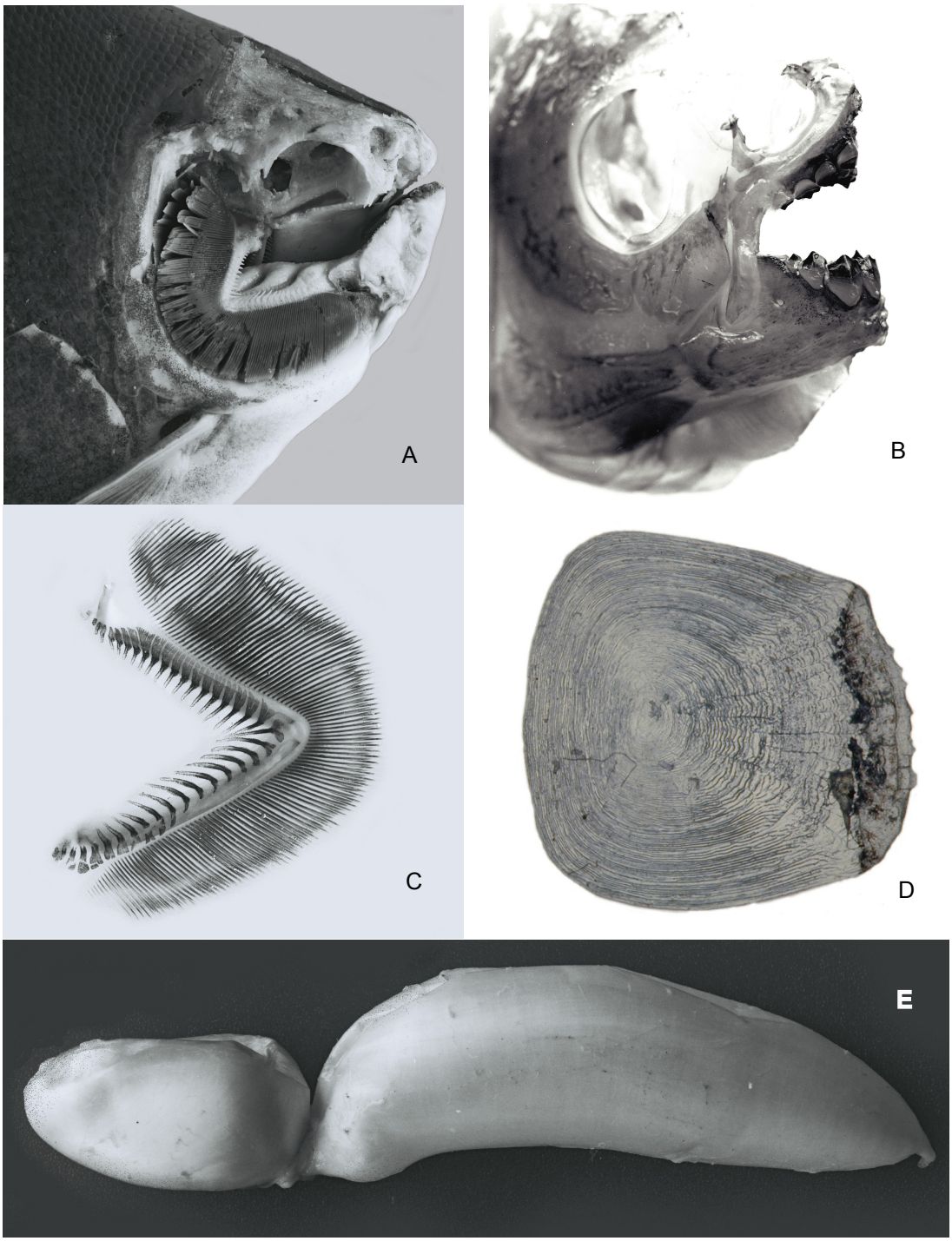

Fig. 2. *Piaractus brachypomus* from the Zelená Voda reservoir (Slovakia).
A – Lateral view of the neurocranium; B – Lateral view on the anterior part of the viscerocranium (cleared and stained preparation); C – Lateral view of first gill arch and its gill rakers; D) Scale taken off the middle of the body close to and above the lateral line; E – Lateral view of the swim bladder.

Table 1. Comparison of counts and measurements of a male pirapitinga – *Piaractus brachypomus* from Zelená Voda reservoir (Slovakia) with the literary data on the same and related species.

	Piaractus brachypomus				*P. mesopotamicus*	*Colossoma macropomum*	
	Our specimen	Machado-Alison (1982)	Géry (1977)	Géry et al. (1987)	Géry et al. (1987)	Géry (1977)	Machado-Alison (1982)
D rays	iii 14	ii–iii 13–5	12–13		12–13	13–16	ii–iv 13–14
A rays	iii 22	iii–iv 21–4	21–23		21	20–24	ii–iv 21–24
P rays	i 14	i 15–8					i 15–18
V rays	i 7	i 7					i 7
C rays	v 9 + 8 v	i 9 + 8 i					i 9 + 8 i
Lateral line scales	104	70–89	(85–98) 110–120	88–89	100–125	60–80	66–78
Scales above lateral line	33	22–30		32–42	50–60		16–23
Scales below lateral line	37	22–33		30–40	45–55		19–27
Branchial spines (1st arch)	17 inf. +1+18 sup.	33–39	17–18 inf.			35–45 inf.	95–136
Scutes (serrae)	29 + 24	46–63	(50–60) 65–70	50–58	62–69	45–55	39–58
In % of head length:							
Preorbital distance	31.6	30.2 (18.0–38.6)			29.0–29.4		27.1 (17.5–33.8)
Eye diameter (horizontal)	20.8	23.7 (16.3–29.8)					23.2 (14.4–31.1)
Postorbital distance	53.8	52.1 (47.9–57.5)					53.7 (46.8–67.5)
Interorbital width	52.7	47.2 (34.2–53.5)			47.6		45.8 (37.0–55.6)
Suborbital depth	16.2	14.0 (5.71–25.1)					10.5 (2.3–25.8)
Distance between eye and POP	21.3	24.9 (18.5–30.0)					22.6 (19.1–26.6)
Head depth (on the level of eyes)	89.5	78.3 (63.1–89.8)					68.9 (55.4–75.9)
Maxilla length	22.9	21.5 (18.1–26.3)			22.0–23.0		20.1 (14.6–22.9)
In % of standard length:							
Head length	29.0	36.2 (26.9–45.0)			37.0–37.7		39.9 (31.5–44.2)
Praedorsal distance	56.3	59.5 (55.2–65.7)					61.4 (57.6–67.8)
Praeventral distance	51.1	56.4 (47.0–61.3)					58.6 (51.9–69.6)
Praeanal distance	76.1	77.0 (69.8–81.3)					77.1 (72.8–81.0)
Distance D – adipose fin	15.6	14.4 (8.6–26.9)					9.4 (7.3–14.0)
Caudal peduncle length	10.0	10.4 (8.7–12.8)					11.0 (8.8–13.7)

Table 1. (continued)

	Piaractus brachypomus				*P. mesopotamicus*	*Colossoma macropomum*	
	Our specimen	Machado-Alison (1982)	Géry (1977)	Géry et al. (1987)	Géry et al. (1987)	Géry (1977)	Machado-Alison (1982)
Body depth (max.)	50.9	57.4 (47.5–67.4)			55.6–62.5		54.9 (45.0–67.6)
Caudal peduncle depth	12.0	11.4 (9.7–12.9)					11.0 (9.6–12.8)
Length of D	20.9	22.0 (18.9–24.9)					21.1 (17.9–24.5)
Length of A	24.3	27.6 (22.8–31.0)					27.5 (20.7–33.5)
Length of P	21.5	22.4 (17.2–26.4)					18.7 (10.6–24.8)
Length of V	18.7	19.7 (15.9–23.5)					18. (12.4–23.1)
Length of adipose fin base	3.0	3.3 (2.0–5.5)					5.6 (4.1–7.5)
Depth of D (1st ray)	22.5	25.7 (18.6–30.9)					25.7 (14.8–30.6)
Depth of A (2nd ray)	16.5	23.1 (13.7–29.3)					30.2 (21.0–36.3)

Fig. 3. Back-calculated standard lengths for the previous years of life of a specimen of *Piaractus brachypomus* from Zelená Voda reservoir (Slovakia).

longs to the species *Piaractus brachypomus* (Cuvier, 1818) from the subfamily Myelinae and the family Serrasalmidae, which is a close relative of – and in external appearance very similar to the species *Colossoma macropomum* (Cuvier, 1816) and *Piaractus mesopotamicus* (Holmberg, 1887). The home of the pirapitinga (*Piaractus brachypomus*) is in the Amazon and the Orinoco river basins in South America. In its early youth it feeds on plankton, later becomes omnivorous, but in adulthood is explicitly vegetarian. Economically, it is a significant species, attains a length of 0.9 m and a weight of 25 kg. It has been designedly introduced into several countries of the world – to Peru and Columbia, Cuba, Malaysia, Indonesia, China, Taiwan, Papua New-Guinea, the Canadian Province of Ontario (Froese & Pauly, 2002), as also to 16 states of the USA (Nico, 2001). It is one of favorite aquarium fishes and is thus kept all over the world, including Slovakia. The pirapitinga caught in the Zelená Voda reservoir near Nové Mesto nad Váhom was evidently reared in an aquarium and let out into free waters. Letting fish reared in aquaria loose out into open waters is a wanton act and in view of the possible risks, extremely irresponsible behaviour.

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