Folia Zool. – 53(4): 399–410 (2004)

Redescription of *Eudontomyzon stankokaramani* (Petromyzontes, Petromyzontidae) – a little known lamprey from the Drin River drainage, Adriatic Sea basin

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Received 28 May 2004; Accepted 24 November 2004

A b s t r a c t . Nonparasitic lamprey found in the Beli Drim River basin (Drin River drainage, Adriatic Sea watershed) represents a valid species *Eudontomyzon stankokaramani* Karaman, 1974. From other species of the genus *Eudontomyzon* it differs in its dentition, and the number and form of velar tentacles. This is the first *Eudontomyzon* species found in the Adriatic Sea watershed.

Key words: *Eudontomyzon stankokaramani*, Beli Drim River basin, Drin River drainage, Adriatic Sea watershed, West Balkan, Serbia

Introduction

Eudontomyzon is one of five genera that belong to the family Petromyzontidae occurring in the Palaearctic faunal region. Within this region the genus is composed of one parasitic and two non-parasitic species. According to recent knowledge, Europe is inhabited by *E. danfordi* Regan, 1911, *E. mariae* (Berg, 1931), *E. hellenicus* Vladykov, Renaud, Kott et Economidis, 1982, and also by a still unnamed but now probably extinct species of anadromous parasitic lamprey related to *E. mariae* known from the Prut, Dnieper and Dniester Rivers (H o l č í k & R e n a u d 1986, R e n a u d 1997). While the distribution of the parasitic *E. danfordi*, and the non-parasitic *E. hellenicus* is limited, restricted to the Tisza River basin (Danube River drainage, Black Sea watershed), in the former and to the Strymon (Aegean Sea watershed) and the Loúros (Ionian Sea watershed) river systems in the latter, *E. mariae* is the most widespread species occurring in the watersheds of the Adriatic, Aegean, Azov, Baltic and Black seas. Three subspecies of *E. mariae* were suggested by H o l č í k & R e n a u d (1986): the nominotypic *E. mariae mariae* (Berg, 1931) (Neman and Vistula River systems and some rivers draining into the Black and Azov seas, except of Danube), *E. mariae vladykovi* (Oliva et Zanandrea, 1959) (Danube River except of the Tisza, Timiş and Cerna River systems) and *E. mariae stankokaramani* Karaman, 1974 (Drin River system). K o t t e l a t (1997) considered all of them to be valid species. However, already R e n a u d (1982) and then S a l e w s k i et al. (1995) proved the conspecifity of *E. vladykovi* with *E. mariae* using their velar tentacles character. H o l č í k & D e l i ć (2000) demonstrated the extreme variation of *E. mariae* in all morphometric and meristic characters emphasising the necessity to use the velar tentacles as the only reliable character for their proper identification.

Š o r i ć (1998) used velar tentacles in his paper on the status and distribution of lampreys in the southern part of Europe. Special attention was paid to lampreys sampled

in the Istočka River, the type locality from which M. K a r a m a n (1974) described *Eudontomyzon vladykovi stankokaramani*. According to his opinion the Istočka River lamprey population should be named *E. danfordi stankokaramani*. After the visit of the first author in Kragujevac in February 2000 and mutual analysis of the lamprey samples from this and other west Balkan lampreys it was found that the Istočka River population is not conspecific with *E. danfordi* but represents the another species of the genus *Eudontomyzon*. It is a valid species differing from all known taxa of that genus and should be named *Eudontomyzon stankokaramani* Karaman, 1974. Because all our efforts to find the types, i.e. the sample used by M. K a r a m a n (1974) failed and may be it was lost or was destroyed during the war in Kosovo or even not preserved, and in Skopje (Macedonia), where M. K a r a m a n was also working, there is not any collection of lampreys (S. G e o r g i e v , pers.comm.), our redescription is based on specimens sampled by the second author and revised by the first one. If the presumed lost type specimens of *E. vladykovi stankokaramani* are found still to exist their both proper description and lectotype and syntypes designation are possible (ICZN, 1999, Art.74).

Material and Methods

Samples were collected in the Istočka River, which is the left hand tributary of the Beli Drim River (Serbia, Kosovo) (Fig. 1). Its headwaters are on the southern slopes of the Mokra Gora Mountains, at 500 metres above the sea level. After joining the Crni Drim they form the Drin (*Drin* in Albanian, *Drim* in Serbian language) River which empties into the Adriatic Sea. The length of the Istočka River is 18 km, the slope gradient 3.8 ‰. The width of stream at the collecting site (which was the same for both ammocoetes and adults) varies from 8–10 m, the depth was around 0.6 m. Stones, gravel and sand cover the bottom. Classification the stretch of the Istočka River under consideration is submountain zone or hyporhitron.

The 12 ammocoetes, four transforming specimens and four adults have been sampled (excavated from the bottom sediments and caught by net, respectively) in the Istočka River 7–10 km below the city of Istok) on 28 November 1970 and on 10 April 1998, respectively. They are now deposited in the Natural History Museum, Slovak National Museum in Bratislava. Four adults have tag SNMB-RY 6673; twelve ammocoetes (stage *A*) the tag SNMB-RY 6674; two metamorphosing specimens (stage *F*) bear the tag SNMB-RY 6675, one metamorphosing specimen (stage *G*) the tag SNMB-RY 6676, and one metamorphosing specimen (stage *I*) bears the tag SNMB-RY 6677.

Measurements and counts used in the redescription follow V l a d y k o v & F o l l e t t (1958; see also H a r d i s t y 1986). Measurements and number of myomeres were obtained on the left side of the specimens. Measurements were taken with the aid of mechanical callipers to 0.1 mm. Counts including the number and form of teeth in the oral disc are followed by their frequency in parentheses. Terminology of the disc teeth and velar tentacles follows V l a d y k o v & F o l l e t t (1967) and V l a d y k o v & K o t t (1976), respectively.

Acronyms for counts and measurements used in tables are as follows: L_T, total length; *TM,* number of trunk myomeres; *SO,* number of cusps in supraoral lamina; *IO,* number of cusps in infraoral lamina; *AC,* number of teeth rows in anterior disc field (anterials); AC_1, number of teeth in first row of anterior disc field; *PC*, number of teeth rows in posterior disc field (posterials); *Ex,* number of exolateral teeth rows (exolaterals); *En*, number of

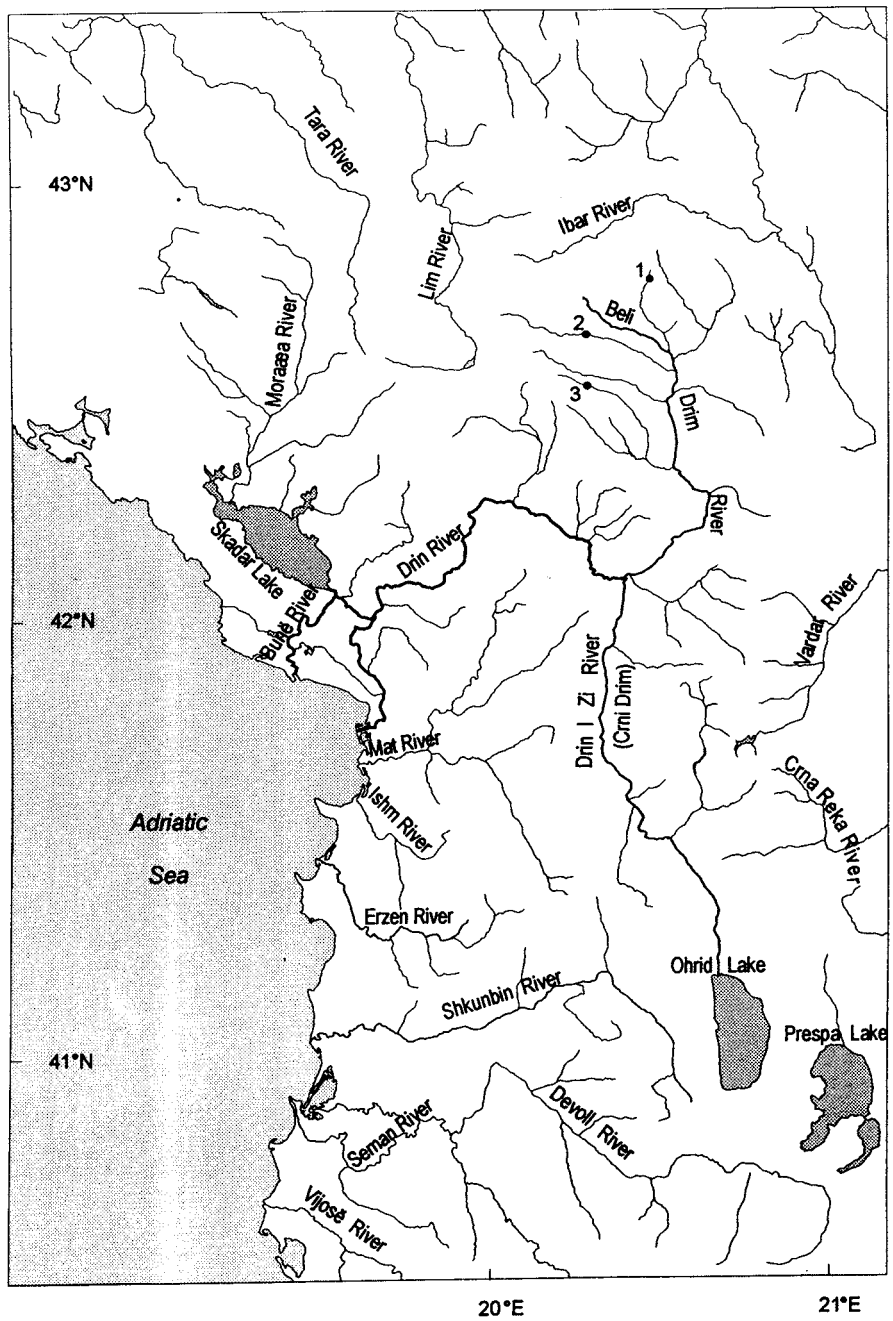

Fig. 1. Sampling sites (•) of *Eudontomyzon stankokaramani*. 1, Istočka River; 2, Pećka Bistrica River; 3, Rastavički Brook.

endolateral teeth (endolaterals); *TL*, number of cusps in transverse lingual lamina; *VT*, number of velar tentacles; d-B_1, prebranchial length; B_1–B_7, branchial length; B_7–a, trunk length; a-C, tail length; d, disc length; d-O, preocular length; O, eye length (horizontal diameter of eye); hD_2, second dorsal fin maximum height.

Estimation of the degree of pigment coverage in a given area, i.e. not the intensity was made according to scheme by R e n a u d (1982): – = absence of to trace coverage of area considered; + = 1% to under 25% coverage; ++ = 25% to under 75% coverage; +++ = over 75% coverage.

The developmental stage of ammocoetes was determined according to classification of B a l a b a i (1958).

Data by K a r a m a n (1974) if any, and data by R e n a u d (1982 and pers.comm.) for eight adults from the Lake Ohrid are incorporated too, especially in the oral disc teeth characteristic and in some measurements. Tables 1 and 2 present data of sample studied by us.

Comparative material examined

The collection acronyms follow L e v i t o n et al. (1985) with original labelling in brackets: MNHP (NMP6V) = National Museum, Museum of Natural History Prague; SNMB (SNMB-RY) = Slovak National Museum Bratislava, Natural History Museum; MB = Universidade de Lisboa, Museu Bocage, Lisbon.

Eudontomyzon danfordi: Adults: SNMB 2102 (1, Hornád River), SNMB 3065 (9, Okna Brook), SNMB 4612 (3, Zbojský Brook); metamorphosing specimens: SNMB 3084 (4, Hornád River), SNMB 4612 (4, Zbojský Brook); ammocoetes: SNMB 3066 (23, Okna Brook), SNMB 3084 (17, Hornád River), SNMB 3085 (13, Rimavica Brook), SNMB 4612 (12, Zbojský Brook); all streams belong to the Tisza River basin, Slovakia;

Eudontomyzon mariae: Adults: SNMB 472 (1); SNMB 458–465, 467–471 (13), SNMB 2472 (2) – all from Hraničný Kriváň Brook, Danube River basin (Slovakia), originally determined as *E. vladykovi*; SNMB 6567 (14, Rijeka Brook, Sava River basin, Croatia), SNMB 6678 (10, Petrinjčica Brook, Sava River basin, Croatia), SNMB 6682 (2, Toplica River, Sava River basin, Croatia); metamorphosing specimens: SNMB 6547 (3, Danube River, Slovakia); ammocoetes: SNMB 6679 (3, Bijela Brook, Sava River basin, Croatia);

Lampetra planeri: Adults: SNMB 1212 (3, Ľubický Brook, Poprad River basin, Slovakia), 2095 (10, Hornád River, Tisza-Danube River basin, Slovakia), SNMB 2405 (2, Storbäcken Brook, Stora Lule Elf River basin, Baltic Sea watershed, Sweden), SNMB 2478 (4, Bilinský Brook, Elbe River basin, Czech Republic), SNMB 6022 (1, Morava River, Danube River basin, Czech Republic); MB-1035 and 1043(2, Seiça River, Tejo River basin, Portugal);

Lampetra fluviatilis: Adults: MB-1039 and 1044 (3, Sorraia Brook, Tejo River basin, Portugal);

Lethenteron zanandreai: Adults: SNMB 6686 (2, Neretva River, Croatia), SNMB 6687 (3, Neretva River, Croatia); metamorphosing specimen: MNHP 80365 (1, Zeta River, Montenegro); ammocoetes: SNMB 6685 (30, Neretva River, Croatia), MNHP 80362-80363 (5, Moraća River, Montenegro).

Redescription

D i a g n o s i s

Eudontomyzon stankokaramani Karaman, 1974 adults differs from both non parasitic *E. mariae* and *E. hellenicus* adults in combinations of characters. It differs from *E. mariae* in having villiform and usually absent anterials, exolaterals and posterials and in lingual laminae of

which the longitudinal lingual laminae are cuspless and transverse lingual lamina bears only one median cusp. It further differs from *E. hellenicus* in having more velar tentacles (9–12 vs 2–5) and spade-like caudal fin. Concerning ammocoetes *E. stankokaramani* differs from *E. hellenicus* in having more myomeres (61–65 vs 53–61) and spade-like caudal fin. Ammocoetes of *E. stankokaramani* differs from those of *E. mariae* in having bulb and tongue precursor pigmented while these structures in ammocoetes of *E. mariae* are not pigmented.

Description

Eudontomyzon stankokaramani Karaman, 1974 is freshwater nonparasitic lamprey reaching 181 mm in L_T, as an adult and at least 203 mm L_T, as an ammocoete. The number of trunk myomeres varies from 58–65 both in adults and in ammocoetes. The supraoral lamina bears 2 teeth separated by a bridge, and the infraoral lamina bears 5–7 teeth (mostly 6). Marginal

Table 1. Counts and measurements of *Eudontomyzon stankokaramani* adults. Istočka River, 10 April 1998. No. coll. SNMB 6673. *IO* bold figures = marginal cusps enlarged. Details on velar tentacles in brackets: marginal figures = number of tentacles in wings, bold figures = number of median tentacles, superscript in one of the velar tentacle count = particular tentacle is bifurcate.

No.	1	2	3	4	Mean
Sex	♀	♀	♀	♂	
L_T (mm)	162.9	174.0	173.5	164.7	168.77
			Counts		
Trunk myomeres	64	60	65	61	62.50
Velar tentacles	9	13	11	12	11.25
	(3-**1**^{2}-**1–1**-3)	(5-**2**-6)	(5-**2**-4)	(6-**1**-5)	4.75-**2.00**-4.50
SO	2	2	2	2	2.00
IO	5 (**1**-3-**1**)	6 (**1**-4-**1**)	6 (**1**-4-**1**)	7 (**1**-6)	6.00
AC_1	8	?	10	8	8.70
PC_1	0	0	0	0	0.00
En	1 1 1 2 0 1	1 1 2 2 1 1	1 1 2 2 0 0	1 1 1 1 1 0	1.00 1.00 1.50 1.75 0.50 0.50
AC	0	0	6	4	2.5
Ex	0	0	0	3	0.75
PC	0	0	0	0	0.00
TL	0-1-0	0-1-0	1-1-1	0-1-0	0.25 1.00 0.25
LL	0-0	0-0	0-0	0-0	0.00 0.00
			Measurements (in % of L_T)		
$d - B_1$	9.4	9.1	8.7	9.2	9.10
$B_1 - B_7$	10.2	10.8	9.9	9.8	10.17
$B_7 - a$	52.0	50.5	52.2	51.4	51.52
$a - C$	30.1	31.3	29.7	31.1	30.55
d	3.9	4.0	3.8	4.0	3.92
$d - O$	5.5	5.4	5.0	5.7	5.40
O	1.7	1.2	1.5	1.3	1.42
hD_1	3.7	4.0	3.3	3.0	3.35
			Intestine diameter in mm (in % of L_T)		
	0.6 (0.4)	0.5 (0.3)	0.5 (0.3)	0.5 (0.3)	0.53 (0.32)

teeth of this lamina are enlarged, in two cases the marginal teeth were bicuspid. The endolateral row on each side of disc consists of two or three teeth. The endolateral formula 1-2-1 seems to be typical, as it was found in both sides in one specimen but formulae 1-1-0 (n=2), 1-2-0 (n=2) and 1-1-1 (n=1) occurred too. Exolateral teeth if present are villiform, very small and weakly developed. The number of teeth rows in the anterior field *(AC)* in one specimen was 6, in other 4 and in two remaining specimens could not be detected. In the Lake Ohrid lampreys the number of anterial rows were 2 in two specimens and 3 in three specimens. The K a r a m a n ' s (1974) schematized picture shows six rows of anterials. The teeth in first anterior row (AC_1) are not enlarged and their number varied from 0 (n=1) to 8 (n=2), 9 (n=3) and 10 (n=1). Posterial teeth were not present in most specimens, those from the Lake Ohrid display 12 unicuspid teeth in a discontinous row (n=1) and 15 unicuspid teeth in a continuous row (n=1). Exolateral teeth were found mostly in specimens from the Lake Ohrid, in our sample in 1 specimen only; the number of their rows was 1 (n=2), 2 (n=6) and 3 (n=1). Teeth in three specimens were blunt, in one was sharp. All exolaterals were deeply imbedded in the disc mucosa and they formed conic tubercles around the endolaterals of which only tips were visible. Transverse lingual lamina is smooth with one central cusp not flanked by any lateral cusps (n=3) or by 1 (n=1) small cusp on each side. Velar apparatus has 9 (n=1), 11 (n=1), 12 (n=1) and 13 (n=1) smooth tentacles (Table 1, Fig. 2). The lateralmost tentacles on both sides are arranged into two wings folded on the dorsal surface of the velar apparatus. The number of the wing tentacles is 3 (n=3), 4 (n=2), 5 (n=2) and 6 (n=1). Their tips are sometimes bifurcated. The mean number of tentacles in the left wing was slightly lower (4.50) than in the right one (4.75). Median tentacles usually are longer than wing tentacles. Their number was 1 (n=1), 2 (n=2) and 3 (n=1). Intestine width ranged from 0.5 (n=3) to 0.6 (n=1) mm, i.e. from 0.3 to 0.4 % of the L_T.

The caudal fin of all specimens is spade-like.

Sexual dimorphism is not well developed. In comparison with females the male displayed shorter trunk length. A pre-anal and anal fin-like adipose fold in females is not developed and the tail is not upturned. It remains to be seen if the weakly developed sexual dimorphism is characteristic for this species or if it is because of short time after metamorphosis and a distant spawning time.

Colour of specimens preserved in 4–5 % formalin is predominantly brown, darker on back, and pale on flanks and belly. The front part of the dorsal side of the mouth was black and all fins were unpigmented. Living adults are dark greyish on back and flanks and silvery whitish on lower part of flanks and belly. Renaud (pers.comm..) stated that the pigmentation of the caudal fin in adults from Lake Ohrid was pigmented either ++, i.e. 25 % to 75 % coverage (n = 1), or +++, i.e.over 75 % (n= 6) caudal fin coverage.

The number of trunk myomeres of ammocoetes and transforming specimens (Table 2) did not differ from those in adults. Their intestine diameter is larger than in adults and is decreasing from younger to the older developmental stage confirming the nonparasitic mode of life. Second dorsal fin depth is increasing with progressing age. The caudal fin in all but two specimens of ammocoetes and in all transforming specimens is spade-like; all fins are without any pigmentation.

Concerning pigmentation, we suppose that both in adults and ammocoetes at least the caudal fin is pigmented and its absence in specimens studied by us is probably caused by the long unsuitable storing (on desk and daily light) during the period between capture and deposition in museum.

Metamorphosis takes place from November to April. Four transforming specimens collected in November 1970 represent different ontogenic stage of metamorphosis. Their

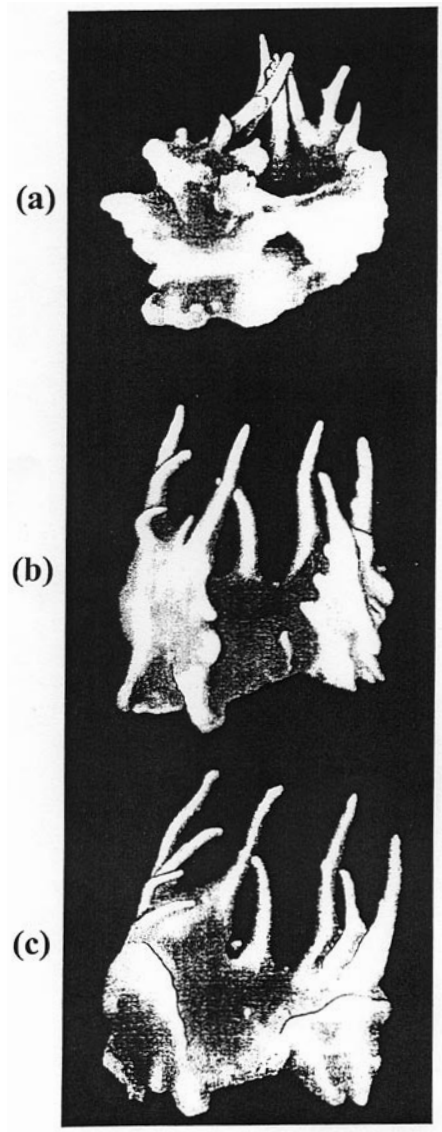

Fig. 2. Comparison of velar tentacles in three species of *Eudontomyzon*. (a) *E. stankokaramani* (female, L_T 173.5 mm, SNMB 6673, Istočka River, dorsal view of 11 tentacles (7 visible; note two long median tentacles); (b) *E. mariae* (male, L_T 160.2 mm, Rijeka Brook, SNMB 6567, ventral view of 8 tentacles; (c) *E.danfordi* (male, L_T 171,2 mm, Okna Brook, SNMB 3065, ventral view of 11 tentacles (9 visible).

measurements and countable characters are in Table 2. Two specimens classified as reaching stage *F* have the visible eye, oral disc oblong with lips fused into a continuous ring, visible fimbriae, branchiopores of the oval shape, the oral cirrhi reduced to small papillae forming bush-like structures. One of them has initials of the velar tentacles in the form of three tubercles. Specimen in stage *G* has the oral disc completely rounded without the remains of the oral hood characters; the oral cirrhi changed to white, soft, blunt and long mammiferous projections, and distinct bicuspid supraoral lamina. Specimen in stage *I* shows well visible

Table 2. Number of trunk myomeres and measurements of *Eudontomyzon stankokaramani* ammocoetes and transforming specimens. Istočka River, 28.XI.1970. Specimens arranged according to their developmental stage following the classification of B a l a b a n (1958).

Character	Developmental stage							
	A			F			G	I
	Mean	Ranges	n	Mean	Ranges	n	n = 1	n = 1
L_T (mm)	139.8	119.6–168.1	12	155.9	155.7–156.2	2	131.7	137.6
Trunk myomeres	63.5	61–65	10	64.0	64	2	62	65
				In % of L_T				
$d - B_1$	6.7	5.6–7.6	12	6.8	6.4-7.2	2	6.7	7.1
$B_1 - B_7$	10.8	9.1–12.6	12	10.2	9.8-10.7	2	8.8	10.8
$B_7 - a$	52.5	47.5–55.0	12	55.0	54.0-56.1	2	54.4	51.9
$a - C$	29.2	27.3–30.1	12	30.4	30.4	2	28.4	29.3
D	2.2	1.6-3.1	12	2.1	1.9–2.3	2	2.3	2.9
$d - O$	–	–	–	3.5	3.3–3.7	2	3.8	3.6
O	–	–	–	1.2	0.9–1.4	2	1.0	1.2
hD_2	1.4	1.0-1.8	12	1.6	1.9–2.3	2	1.9	2.8
				Intestine diameter (mm)				
	1.3	1.1-1.6	12	1.1	0.7-1.6	2	0.7	0.8

groove behind the oral disc. The number of tubercles inside the oral disc becomes longer and its number is reduced.

In all but one ammocoete the bulb and of the tongue precursor is moderately (++, i.e.25-75 % coverage of an area; n=5) or strongly (+++, i.e. above 75 %; n=1) pigmented.

C o m p a r i s o n s

In comparison with other European *Eudontomyzon* species *E. stankokaramani* differs in combination of its characters. This species has poorly developed oral disc dentition. In all species of *Eudontomyzon,* radial rows are usually two or more. In *E. stankokaramani* anterials may be present and seldom also exolaterals, while posterials are mostly absent. Endolaterals are in low numbers. The cusps on the lingual laminae are not present with exception of the central tooth on the transverse lingual lamina. Number and arrangement of velar tentacles resembles *E. danfordi*, however, the median tentacles are longer than the lateral ones and instead of one median tentacle, in *E. stankokaramani* there are mostly two or three. It seems that also some body proportions are different: the trunk length (B_7-a) and the tail length (a-C) are relatively larger (range 50.5–52.2, mean 51.5; range 29.7–31.3, mean 30.5, respectively) than in *E. danfordi* (46.1–49.7, 48.7; 26.9–32.0, 29.1), *E. mariae* (38.3–59.8, 50.4; 22.8–32.3, 26.8) and *E. hellenicus* (46.4–54.7, 49.6; 26.2–33.0, 29.5) while the disc length (d) is larger (ranges 3.8–4.0, mean 3.9) than in *E. mariae* (2.2–5.4, 3.7) but smaller than in *E. danfordi* (4.7–6.7, 6.1) and *E. hellenicus* (2.9–7.3, 5.3; mean of numeric data for *E. danfordi, E. mariae* and *E. hellenicus* is represented by unweighed mean, i.e. the mean of means; n=7, 22 and 3 samples, respectively, covering 27, 546 and 63 specimens, respectively). Ammocoetes of *E. stankokaramani* have moderately pigmented tongue precursor. This character is similar to that in *E. hellenicus,* while in *E. danfordi* and *E. mariae* the precursor of the tongue is not pigmented.

As it follows from the late metamorphosis, *E. stankokaramani* seems to differ in this respect from all known species of this genus. Usually the metamorphosis takes place between July and November (Hardisty 1986, Holčík & Renaud 1986, Holčík 2003). The metamorphosing ammocoetes in the Istočka River were found from February to April by Karaman (1974) and in November by the second author (VŠ). This suggests that the late metamorphosis is general for this stream. If it is due to its southern location remains to be determined. However, it is noteworthy that the metamorphosis of *Lethenteron zanandreai* (Vladykov, 1955) in the Italian watershed of the Adriatic Sea takes place from August to October (Bianco 1986) but in the Balkan tributaries to the Adriatic Sea transforming specimens were found in February and April (Holčík & Mrakovčić 1997).

Geographic distribution

Eudontomyzon stankokaramani is, at present, restricted to the Drin River drainage, namely the Istočka River, Rastavički Brook, Pećka Bistrica River and the Lake Ohrid (Karaman 1974, Renaud 1982, Holčík & Renaud 1986, Šorić 1998). It seems that it is an endemic lamprey to this basin. Most probably it is also found in the Albanian streams belonging to this basin, namely the Drin i Zi River (= Crni Drim). The neighbouring northern Moraća River (southwestern tributary of the Skadar Lake) in Montenegro is inhabited by *Lethenteron zanandreai* and not by *Lampetra planeri* reported earlier by Šorić (1998; samples from the Kragujevac University determined by Šorić and re-determined by Holčík). Far southwards in Greece *Eudontomyzon hellenicus* is restricted and endemic to the Strymon River system in the Aegean Sea drainage area in Macedonia and to the Loúros basin in the Ionian Sea drainage area in Epirus (Vladykov et al., 1982, Renaud 1986, Economidis 1991). It remains to be found which species of lamprey occur in the area between, i.e. in the rivers flowing to the Adriatic Sea from Albania (Mat, Ishm, Erzen, Shkunbin, Seman and Vijosë rivers), and to the Ionian Sea both from Albania (Kalasë and Pavlë rivers) and Greece (Kalamanas and Acherón rivers), respectively. Until now only *Petromyzon marinus* and *Lampetra fluviatilis* (the occurrence of the latter is very dubious) were and are reported from Albania (Poljakov et al. 1958, Rakaj 1995) and the doubtful presence of *Petromyzon marinus* along the coast of NW Greece (Economidis 1991). The presence of *Eudontomyzon stankokaramani* in the Drin River drainage, and that of *Lethenteron zanandreai*, *Eudontomyzon mariae* and *E. hellenicus* in rivers situated towards the north and south of the Drin River drainage, respectively, indicates both the former connection between the Danube and Drin river basins and the complicated geological history of the south-western Balkan (Cvijić 1911, 1924, Radoman 1955, Stanković 1959, Karaman 1974). The occurrence of three different species of lampreys in this relatively small territory is not surprising. As pointed out by Bănărescu (1992: 749) *"The freshwater fauna of the Adriatic and Ionian slopes of western Yugoslavia, Albania and northern Greece is the richest in South Europe in the respect of the total number of genera and species and of endemic ones"*. The apparently small morphological differences between *E. stankokaramani* and *E. mariae* may be explained similarly as Lindberg (1972) interpreted the similarity of other closely related fish species inhabiting the Danube and the Western European rivers. It means that the penetration of the lampreys from the neighbouring headwaters of the Danubian tributaries was relatively recent and "*therefore till now they did not manage to significantly change themselves morphologically*" (Lindberg 1972: 248; translation of JH).

Synonyms

Petromyzon planeri (non Bloch) Hankó, 1922: 1, 4, 6, Fig.4 (Pećka Bistrica River, Beli Drim River basin);

Eudontomyzon vladykovi stankokaramani Karaman, 1974: 2–4, 6–12, Fig.2 (Istočka River and Rastavički Brook near Peć, Beli Drim River basin);

Eudontomyzon mariae complex Renaud, 1982: xv-xvi, 3–4, 7, 13, 26, 55, 61–63, 66–69, 71, 75–79, 91–112, 114, 116, 120, 122, 126, 128,130–132, 134–135.

Eudontomyzon danfordi stankokaramani Šorić, 1998: 73–75, Fig.2/2 (Istočka River near Peć, Beli Drim River system).

Key to European species of the genus *Eudontomyzon*

A. Adults

1a Parasitic mode of life; oral disc teeth sharp, intestinal diameter 0.3 to 8.0 mm ..... *Eudontomyzon danfordi*

1b Non-parasitic mode of life, oral disc teeth usually blunt, intestinal diameter <0.5–1.0 mm 2

2a Anterials, exolaterals and posterials enlarged, blunt, tuberculous, never villiform; ..... 2–5 short velar tentacles; typically less than 60 myomeres, caudal fin rounded ..... *Eudontomyzon hellenicus*

2b Anterials, exolaterals and posterials villiform 3

3a All lingual laminae with cusps; 5–15 velar tentacles, median tentacle one and shorter than wing tentacles, anterials, exolaterals and posterials usually present ..... *Eudontomyzon mariae*

3b Only transverse lingual lamina bears one median cusp; median velar tentacles usually two or three and longer than wing tentacles, anterials, exolaterals and posterials usually absent ..... *Eudontomyzon stankokaramani*

B. Ammocoetes

1a Rounded caudal fin, pigment coverage of upper and lower lip moderate or strong; typically less than 60 trunk myomeres; bulb and ligament of tongue precursor strongly pigmented ..... *Eudontomyzon hellenicus*

1b Spade-like caudal fin; pigment on upper and lower lip absent to only a trace present; typically more than 60 trunk myomeres 2

2a Caudal fin usually strongly or moderately pigmented; dorsal fin pigmentation ranging from strong to slight; seldom unpigmented; living and freshly (1–3 years) preserved specimens always strongly mottled or spotted ..... *Eudontomyzon mariae*

2b Caudal fin usually slightly or moderately pigmented; dorsal fin pigmentation usually absent to moderate, seldom strongly pigmented; living and preserved specimens always uniformly coloured without mottling or spots 3

3a Bulb of tongue precursor unpigmented ..... *Eudontomyzon danfordi*

3b Bulb of tongue precursor moderately to strongly pigmented ..... *Eudontomyzon stankokaramani*

A c k n o w l e d g e m e n t s

The authors are indebted to His Excellence M. K o p e č n i, the Ambassador of the Republic of Serbia and Montenegro in Slovakia for his effort to obtain the type specimens of *Eudontomyzon vladykovi stankokaramani* from the Priština University. Mrs. M. J. A l v e s , J. K a u t m a n and R. Š a n d a are acknowledged for the loan of comparative material from the Museu Bocage in Lisbon, Natural History Museum – Slovak National Museum in Bratislava, and National Museum in Prague, respectively. We are also grateful to C. B. R e n a u d and M. K o t t e l a t for their many helpful comments on the manuscript, although not always accepted, to I. L ö b l for his advice in some taxonomic problems, and to M. V a t e r for his assistance in preparing the illustrations. M. H o l č í k is acknowledged for the linguistic correction. Three anonymous reviewers are acknowledged for critical comments and suggestions. This study was supported in part by the Slovak Scientific Grant Agency (VEGA), under Grant no. 2/1072/22 and 1/9363/23.

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