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## REDESCRIPTION OF THE FRESHWATER ANCHOVY *ANCHOVIELLA VAILLANTI* (STEINDACHNER, 1908) (CLUPEIFORMES: ENGRAULIDAE) WITH NOTES ON THE DISTRIBUTION OF ESTUARINE CONGENERS IN THE RIO SÃO FRANCISCO BASIN, BRAZIL

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### ABSTRACT

*Anchoviella vaillanti* (Steindachner, 1908) was described based on few specimens from the middle Rio São Francisco; however, several specimens of the species have been collected in recent decades. The range of morphological variation of *A. vaillanti* could thus be reassessed based on a larger number of specimens currently available in fish collections, and the species redescribed. *Anchoviella vaillanti* can be recognized among freshwater congeners by the relative position of the pelvic, dorsal and anal fins. Records of the species in ichthyological collections are restricted to the upper and middle portions of the Rio São Francisco basin, but the species might also occur in the lower Rio São Francisco. Comments on the distribution of the marine species of *Anchoviella* from the lower Rio São Francisco basin and an identification key including those species and *A. vaillanti* are provided.

KEY-WORDS: Ichthyology; Taxonomy; Neotropical; Rio São Francisco basin; Anchovy.

### INTRODUCTION

*Anchoviella* is one of the most species-rich genera of the Engraulidae, with about 17 valid marine, estuarine and freshwater species distributed in South American rivers and along the Atlantic and Pacific coasts of North, Central and South America. The genus is distinguished in the Engraulidae by the slightly compressed body, the presence of usually more than 15 elongate gill rakers on the lower branch of the first gill arch, and a short upper jaw not extending posteriorly to the vertical through the anterior margin of the opercle (Whitehead *et al.*, 1988).

Nine species of *Anchoviella* occur in Brazil, of which three are distributed along portions of the

coast and can extend distances up the lower portions of rivers. In a recent study of the Brazilian freshwater species of *Anchoviella*, Loeb (2009) recognized seven different Amazonian species (two of them still undescribed) and one single species from the Rio São Francisco basin, *Anchoviella vaillanti* (Steindachner, 1908).

Until recently, *A. vaillanti* was known from a limited series of specimens originating from few localities. As a consequence, the information as to the degree of variation of the morphological characters in the species and as to the extent of its geographic distribution within the Rio São Francisco basin is largely incomplete.

Herein we present a redescription of *Anchoviella vaillanti*, and an identification key for the species and

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three other estuarine species of the genus that occur in the Rio São Francisco basin.

## MATERIAL AND METHODS

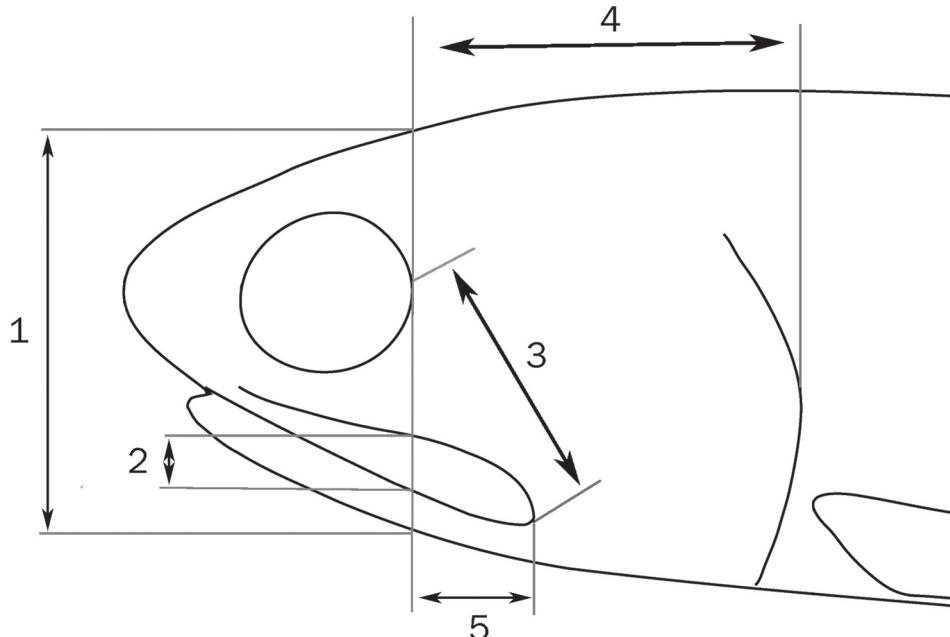
Measurements and counts were made on the left side of 50 specimens according to Loeb (2012), with the addition of the following measurements: distance from tip of pectoral-fin to pelvic-fin origin; distance from tip of pelvic-fin to anal-fin origin; head depth, measured at the vertical through the posterior margin of the orbit; maxillary depth, measured at the vertical through the posterior margin of the orbit; cheek length, measured from the posterior margin of the orbit to posteroventral tip of the upper jaw; postorbital distance, shortest distance from the posterior margin of the orbit to the posterior margin of the opercle and maxillary length beyond posterior margin of orbit (Fig. 1). Number of vertebrae and caudal-fin rays were counted on 10 cleared and stained specimens as stated by Whitehead & Teugels (1985) prepared according to the method of Taylor & Van Dyke (1985). Standard length (SL) is expressed in mm, measurements of subunits of the body are expressed as percentage of SL, and subunits of the head, as percentage of head length (HL).

Counts of scales were taken according to Fink & Weitzman (1974) with the addition of number of

horizontal rows of scales from the dorsal-fin origin to the anal-fin origin. In the description, the unbranched dorsal, anal, pectoral and pelvic-fin rays are expressed in roman numerals, and branched rays, in arabic numbers with the frequency of each count indicated in parenthesis after the range. Dorsal and anal adnate rays were counted as one ray. In Table 1, counts of fin rays are the sum of unbranched plus branched rays. Data of the lectotype was taken from Whitehead (1973) and are followed by an asterisk in the description.

All examined lots are listed by state according to the institution catalog number, followed by the number of specimens and range of SL in parenthesis and collection site with its geographic coordinates.

*Institutional abbreviations:* **MCP**, Museu de Ciências e Tecnologia da Pontifícia Universidade Católica, Porto Alegre; **MNRJ**, Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro; **MZUSP**, Museu de Zoologia da Universidade de São Paulo, São Paulo; **NMW**, Naturhistorisches Museum Wien, Wien; **UEFS**, Universidade Estadual de Feira de Santana, Feira de Santana; **UEL**, Universidade Estadual de Londrina, Londrina; **UFAL**, Universidade Federal de Alagoas, Maceió; **UFBA**, Universidade Federal da Bahia, Salvador; **UFRPE**, Universidade Federal Rural de Pernambuco, Recife; **UFS**, Universidade Federal de Sergipe, Aracaju; **UNT**, Universidade Nacional do Tocantins, Porto Nacional.



**FIGURE 1:** Measurements of subunits of the head of *Anchoviella vaillanti*. **1.** Head depth, **2.** Maxillary depth, **3.** Cheek length, **4.** Postorbital distance and **5.** Upper jaw length beyond posterior margin of orbit.

**TABLE 1:** Morphometrics and meristics of *Anchoviella vaillanti*. *n* = number of examined specimens, SD = Standard Deviation (frequency in parenthesis). Data of lectotype was taken from Whitehead (1973).

Morphometrics	Lectotype	n	Range	Mean	SD
Standard length, SL (mm)	62.7	50	18.3	97.9	42.0
Head length, HL (mm)	75.3	50	4.9	23.3	10.3
<b>Measurements in % of SL</b>					
Body depth	21.2	50	14.1	25.6	19.8
Caudal-peduncle depth		50	6.6	12.2	9.5
Dorsal-fin base length		50	5.9	11.6	9.3
Anal-fin base length		49	15.2	21.9	19.0
Pelvic-fin length		50	8.2	13.3	11.4
Pectoral-fin length	16.7	44	13.6	20.6	17.3
Predorsal length	54.5	50	49.3	58.6	55.3
Preanal length	65.8	50	60.1	68.5	65.0
Prepelvic length	45.5	50	41.4	47.5	43.9
Prepectoral length		50	21.4	28.1	24.7
Pectoral-fin axillary scale length	8.7	33	5.2	12.2	7.4
Pelvic-fin axillary scale length		23	2.3	5.6	4.1
Head length	26.3	50	21.8	27.2	24.8
<b>Measurements in % of HL</b>					
Head depth		48	54.1	66.8	59.9
Snout length		50	9.6	16.6	13.2
Orbital diameter		50	26.0	37.0	32.3
Cheek length		48	28.2	40.3	33.3
Maxillary depth		48	3.3	11.9	6.7
Upper jaw length		48	57.9	69.2	63.8
Post-orbital distance		47	45.0	56.5	50.1
Interorbital width		48	23.0	30.9	27.7
Meristics		n	Range		
Total dorsal-fin rays	13	47		10 – 14	
Total anal-fin rays	23	44		21 – 26	
Total pectoral-fin rays	13	43		9 – 14	
Total pelvic-fin rays	7	42		7	
Vertebrae		4		37 – 38	
Longitudinal line scales		10		33 – 37	
Scales in body depth		5		6 – 7	
Circumpeduncular scales		5		10	
Gill rakers on 1 <sup>st</sup> gill arch		31		31 – 39	
Upper branch		31		12 – 16	
Lower branch		31		19 – 24	

Measurements and counts of *Anchoviella brevirostris*, *A. lepidentostole* and another species provisionally referred to as *Anchoviella cf. cayenensis* (Puyo, 1946), which is currently under review by the first author, were performed on specimens collected at the lower portions of the Rio São Francisco basin or close to the mouth of that river.

Morphological data for *Anchoviella manamensis* Cervigón, 1982, *A. alleni* (Myers, 1940), *A. carrikeri* Fowler, 1940 and *A. guianensis* (Eigenmann, 1912) were taken from the original descriptions, with additional data from Hildebrand (1943). Morphological data for *Anchoviella brevirostris*, *Anchoviella cf. cayenensis*, *A. jamesi*, *A. juruasanga* and *A. lepidentostole* were taken from specimens listed below.

*Comparative material:* *Anchoviella brevirostris*: UFBA 6688 (2, 72.38–82.52 mm SL), Alagoas, Piaçabuçu, Rio São Francisco, in the surroundings of Piaçabuçu. *Anchoviella cf. cayenensis*: MZUSP 113730 (2, 120.65–121.34 mm SL), Alagoas, Penedo, Rio São Francisco; UFBA 6688 (2, 114.12–114.61 mm SL), Alagoas, Piaçabuçu, Rio São Francisco, at Piaçabuçu neighborhood. *Anchoviella jamesi*: MZUSP 29093 (4, 47.68–50.2 mm SL), Amazonas, Rio Tefé, Jurupari, 03°22'S, 64°43'W. *Anchoviella juruasanga*: MZUSP 109249 (1, 42.4 mm SL), Pará, Rio Trombetas, upstream from mouth of Lago do Jacaré, at Reserva Biológica de Trombetas, 01°20'S 56°51'W. *Anchoviella lepidentostole*: MZUSP 108160 (5, 87.32–103.67 mm SL), Rio São Francisco, close to its mouth; MZUSP

51744 (1, 90.28 mm SL), Alagoas, Penedo, Rio São Francisco, at ferry port,  $10^{\circ}17'29"S$ ,  $36^{\circ}35'12"W$ ; UFBA 6579 (12, 85.18-113.99 mm CP), Penedo, Rio São Francisco, close to Penedo; UFBA 6681 (3, 87.18-98.78 mm CP), Piaçabuçu, Rio São Francisco, in the surroundings of Piaçabuçu.

***Anchoviella vaillanti* (Steindachner, 1908)**

**Figs. 2-4, Table 1**

*Engraulis vaillanti* Steindachner, 1908: 193 [description; Sehr häufig im Rio San Francisco nächst Joazeiro und Barra an seichten Uferstellen, im Rio grande do Norte und Rio Preto, see remarks]. Whitehead, 1970: 30 [lectotype (NMW 1931) and paralectotypes (NMW 1928-1932, NMW 1936 and NMW 1938) designation and description of lectotype, type locality restricted to Fazenda Ingaziera, but see remarks].

*Stolephorus vaillanti*. Eigenmann, 1910: 451 [new combination, listed].

*Anchovia vaillanti*. Starks, 1913: 10 [new combination, diagnosis repeated from Steindachner, 1908]. Ihering, 1930: 233 [comments on economic value and systematics of Clupeiformes from Brazil].

*Amplova vaillanti* Myers, 1940: 439 [new combination, condensed description repeated from Steindachner, 1908, one single specimen analyzed from Barra, Bahia, Brazil].

*Anchoviella vaillanti* Hildebrand, 1943: 125 [new combination, condensed description repeated from Steindachner, 1908]. Fowler, 1948: 22 [in list of freshwater species from Brazil]. Carvalho, 1951: 54 [description translated from Hildebrand, 1943]. Fowler, 1973: 330 [in list of fish of the world]. Whitehead, 1973: 149 [in identification key of species of *Anchoviella* from Atlantic coasts and drainages]. Britski *et al.*, 1984: 43, fig. 109 [in identification key to fishes of Rio São Francisco basin, short description of five specimens]. Whitehead *et al.*, 1988: 338, fig. 338 [diagnosis, data on biology and distribution]. Bazzoli *et al.*, 1997: 17 [reproductive biology of fishes from Três Marias dam, Brazil]. Kullander & Ferraris, 2003: 40 [in list of freshwater fish of South and Central America]. Menezes & Figueiredo, 2003: 39 [in list of marine fish from Brazil]. Silva *et al.*, 2010: 805 [morphological development of larvae and early juveniles].

*Material examined* (265 specimens, 50 measured and counted). **Pernambuco:** MZUSP 112885

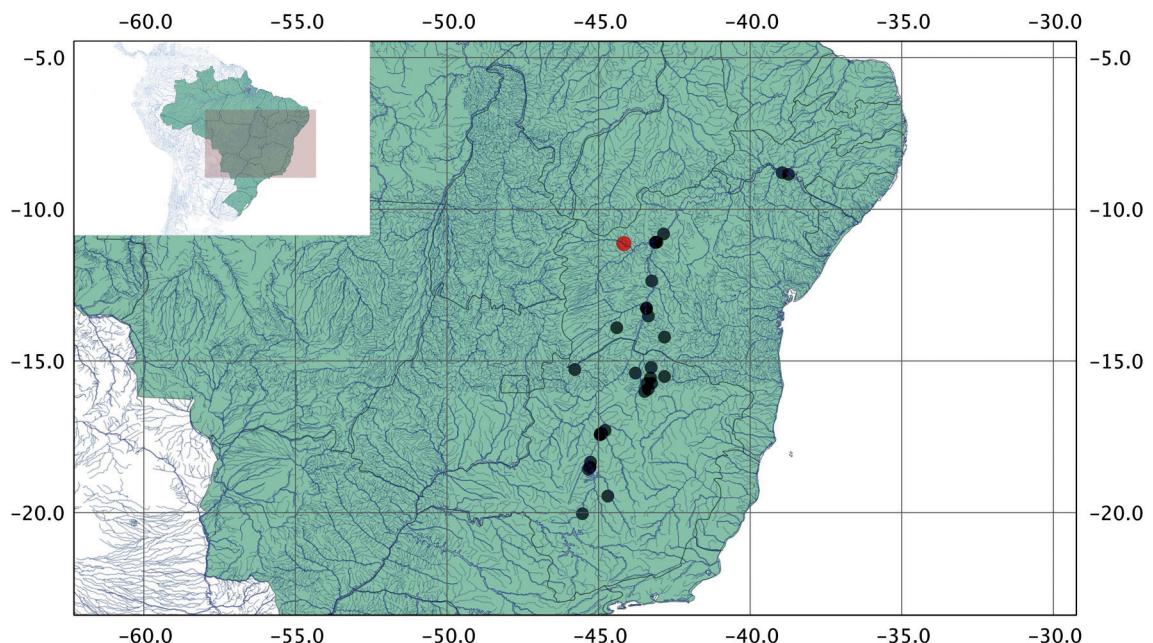
(2, 92.38-116.85 mm SL) Rio São Francisco at left margin, downstream of Belém do São Francisco,  $08^{\circ}47'46"S$ ,  $38^{\circ}56'42"W$ . **Bahia:** MCP 16623 (4, 26.89-47.71 mm SL), Rio São Francisco,  $13^{\circ}15'12"S$ ,  $43^{\circ}25'20"W$ ; MNRJ 22359 (4, 29.55-41.10 mm SL), Rio São Francisco, Barra,  $11^{\circ}05'04"S$ ,  $43^{\circ}07'00"W$ ; MNRJ 22360 (5, 27.10-38.55 mm SL), Rio São Francisco, Barra; MZUSP 98754 (8, 41.15-71.91 mm SL), Rio Grande, Barra,  $11^{\circ}05'08"S$ ,  $43^{\circ}04'26"W$ ; MZUSP 3800 (3, 38.73-47.32 mm SL), Rio São Francisco; MZUSP 54605 (1, 36.41 mm SL), Rio Pau de Colher, Guanambi,  $14^{\circ}12'48"S$ ,  $42^{\circ}49'30"W$ ; MZUSP 94701 (1, 59.38 mm SL), Riacho da Lagoa Grande, tributary of Rio Coribe, Coribe; MCP 16611 (24, 27.48-58.80 mm SL), Riacho Santana,  $13^{\circ}31'13"S$ ,  $43^{\circ}21'28"W$ ; MZUSP 112886 (1, 103.63 mm SL), Rio São Francisco at margin, downstream of Rodelas,  $08^{\circ}51'04"S$ ,  $38^{\circ}44'06"W$ ; MZUSP 112884 (40, 24.56-49.29 mm SL), Rio São Francisco in temporary lake at sandy beach,  $10^{\circ}48'48"S$ ,  $42^{\circ}51'20"W$ . **Minas Gerais:** MNRJ 16347 (1, 84.85 mm SL), Rio São Francisco, Mocambinho; MNRJ 16125 (1, 19.81 mm SL), MNRJ 16126 (10, 43.60-50.42 mm SL), Rio São Francisco, Mocambinho; MNRJ 15752 (2, 22.13-26.35 mm SL), Lagoa do Sossego, Mocambinho; MNRJ 15772 (1, 31.97 mm SL), Lagoa do Caju, Mocambinho; MNRJ 27308 (1, 48.16 mm SL), MNRJ 28069 (1, 43.81 mm SL), Rio São Francisco, Pirapora; MZUSP 85974 (2, 49.44-59.15 mm SL), Rio São Francisco, Pirapora and Buritizeiro; MZUSP 105890 (4, 38.66-51.68 mm SL), Rio São Francisco, Três Marias dam; MZUSP 38038 (2, 46.2-55.96 mm SL), Rio São Francisco, Três Marias dam,  $18^{\circ}34'S$ ,  $45^{\circ}20"W$ ; MZUSP 18953 (5, 42.34-97.85 mm SL), MZUSP 37982 (54, 14.53-42.60 mm SL), Rio São Francisco, Três Marias dam,  $18^{\circ}30'S$ ,  $45^{\circ}17"W$ ; MZUSP 39210 (5, 22.48-42.42 mm SL), Rio São Francisco, downstream of Cachoeira Grande; MZUSP 39485 (24, 29.06-40.41 mm SL), Rio São Francisco, Barra do Rio Formoso,  $17^{\circ}26'S$ ,  $44^{\circ}57"W$ ; MNRJ 15748 (2, 48.41-49.91 mm SL), Rio Verde Grande; MZUSP 74738 (14, 18.25-42.96 mm SL), Lagoa at Lagoa da Prata,  $20^{\circ}02'S$ ,  $45^{\circ}32"W$ ; MZUSP 54602 (3, 20.21-27.86 mm SL), Riacho Salinas, Monte Azul,  $15^{\circ}12'53"S$ ,  $43^{\circ}15'49"W$ ; MZUSP 39193 (5, 14.09-19.34 mm SL), Córrego Gameleira; MZUSP 90827 (4, 32.34-45.49 mm SL), Lagoa do Saco, Rio das Velhas,  $17^{\circ}17'22"S$ ,  $44^{\circ}47'08"W$ ; MZUSP 101706 (10, 36.88-57.10 mm SL), Córrego Macaúnas,  $15^{\circ}30'48"S$ ,  $42^{\circ}49'30"W$ ; MZUSP 54604 (1, 28.66 mm SL), Rio São Francisco, Bom Jesus da Lapa; UFBA 00064 (20, 25.64-72.79 mm SL),



**FIGURE 2:** *Anchoviella vaillanti*, lectotype (NMW 1931; 62.7 mm SL), Brazil, Bahia, Rio Preto, at Fazenda Ingazeira. Photo by H. Wellendorf (NMW).



**FIGURE 3:** *Anchoviella vaillanti*, freshly preserved specimen (UNT 12412; 63.4 mm SL). Brazil, Minas Gerais, Rio São Francisco. Photo by J.L. Birindelli (UEL).



**FIGURE 4:** Distribution map of *Anchoviella vaillanti* based on the studied material (black symbols); locality of lectotype (red symbol).

Ponte de Suacica, right margin of Rio São Francisco, Xique-Xique.

**Diagnosis:** *Anchoviella vaillanti* is distinguished from all other freshwater congeners except for *A. manamensis* and *A. jamesi* by having the pelvic-fin tip not exceeding the vertical through the base of the first dorsal-fin ray (*vs.* pelvic-fin tip extending beyond the vertical through the base of the first dorsal-fin ray in *A. allenii*, *A. carrikeri*, *A. guianensis* and *A. juruasangae*). The species is also distinguished by having the anal-fin origin situated at the vertical through the base of the last or penultimate dorsal-fin ray (*vs.* anal-fin origin posterior of the vertical through the base of last anal-fin ray by a distance at least 14% of HL in *A. allenii*, and anal-fin origin anterior to the vertical through the base of the last anal-fin ray in *A. jamesi* and *A. manamensis*).

**Description:** Morphometric and meristic data are presented in Table 1. Body elongate, laterally compressed, greatest body height at vertical through dorsal-fin origin. Dorsal profile of body gently convex from tip of snout to vertical through posterior margin of posterior nostril, convex from that point to base of first dorsal-fin ray, posteroventrally inclined along dorsal-fin base and approximately straight from latter point to caudal peduncle. Ventral profile of body gently convex from tip of lower jaw to vertical through posterior margin of orbit, convex from that point to base of first anal-fin ray, posterodorsally inclined along anal-fin base and nearly straight from latter point to origin of lower lobe of caudal fin. Caudal peduncle longer than deep.

Head short, longer than deep, gently pointed in lateral view and moderately pointed from dorsal view. Mouth inclined relative to body axis; sub-terminal with posterior margin of upper jaw rounded. Snout long, rounded in lateral view. Eye on lateral surface of head, located dorsal to horizontal through base of dorsalmost pectoral-fin ray; visible in dorsal and ventral views. Two confluent nostrils on each side of head, anterior nare elliptical, larger posterior nare crescent-shaped. Posterior margin of upper jaw rounded, extending beyond vertical through posterior margin of orbit by approximately 14.5 to 23.0% of HL. Teeth pointed, small, slender and recurved posteriorly. Teeth arranged in single row on premaxilla, maxilla and dentary.

Pseudobranchia present, shorter than orbit diameter, approximately 10.1 to 20.9% of HL. Gill rakers long and thin on first branchial arch, 12 (2), 13 (1), 14\* (12), 15 (9) or 16 (7) on upper portion, 19\* (11), 20 (6), 21 (8), 22 (3), 23 (2) or 24 (1) on

lower portion, 31 (3), 33\* (7), 34 (3), 35 (7), 36 (2), 37 (4), 38 (3) or 39 (2) in total. Length of raker inserted at angle of first gill arch 10.4 to 23.9% of HL.

Lateral line absent. Cicloid scales usually lost in most preserved specimens, 33 (2), 34 (1), 35 (2), 36 (4) or 37 (1) transverse rows along body to caudal-fin base; 6 (1) or 7 (4) horizontal rows of scales from dorsal-fin origin to anal-fin origin; 10 (5) horizontal scales rows around caudal peduncle. Dorsal and anal-fin bases with sheath of scales.

Vertebrae 37 (3) or 38 (1).

Dorsal-fin rays ii (4) or iii (29), and 8 (1), 9 (13), 10 (18) or 11 (1). Fin truncate and slightly pointed distally; distal margin approximately straight. Dorsal-fin origin closer to caudal-fin base than to tip of snout. Anal-fin rays ii (2) or iii (33), and 18 (2), 19 (11), 20 (13), 21 (7), 22 (1) or 23 (1). Anterior anal-fin rays longer; distal margin of anal fin concave. Anal-fin origin at vertical through base of last or penultimate dorsal-fin ray. Pectoral-fin rays i,8 (1), i,9 (1), i,10 (9), i,11 (18), i,12 (10) or i,13 (1); anterior rays longer. Tip of adpressed fin falling short of base of first pelvic-fin ray. Pectoral-fin axillary scale absent in most preserved specimens, probably lost during capture or preservation. Pelvic-fin rays i,6 (42); located along vertical through anterior one-third of dorsal-fin base. Tip of adpressed fin falling short of anal-fin origin. Anterior pelvic-fin rays longer. Pelvic-fin axillary scale absent in most preserved specimens, probably lost during capture or preservation. Base of first pelvic-fin ray closer to base of first pectoral-fin ray than to anal-fin origin. Caudal fin forked, upper and lower lobes equally developed. Caudal-fin rays 7,11-12,7-8,7 (n = 3, principal rays 12,7 or 11,8).

**Coloration in alcohol:** Body coloration pale, light yellowish to light brownish. Longitudinal stripe pale to silver, absent in most preserved specimen, when present extending from posterior margin of head to caudal peduncle. Width of stripe 21.3% of body depth at vertical through pectoral-fin base, increasing posteriorly to almost 25.5% of body depth at vertical through anal-fin origin. Irregularly shaped black dots dispersed on distal two-thirds of body. Dots present above and below lateral stripe in some specimens, one group of dots on top of head and along dorsal portion of body from dorsal-fin origin to caudal-fin base. Second series along ventral region of body from anal-fin origin to caudal fin. Dots also present along bases of dorsal, anal and caudal fins, along membranes of caudal-fin and arranged in short horizontal stripe, along center of each caudal-fin lobe. Eye and middle portion of the postorbital region of head translucent to silvery.

**Distribution:** *Anchoviella vaillanti* is widely distributed in the main channel and tributaries of the Rio São Francisco, from Lagoa da Prata (upper Rio São Francisco basin), southern Minas Gerais, to Belém de São Francisco at Itaparica dam (middle Rio São Francisco basin, just upstream now inundated Paulo Afonso Waterfalls), northern Bahia (Fig. 4).

**Remarks:** Steindachner (1908) described *Engraulis vaillanti* based on syntypes from Rio San Francisco nächst Joazeiro und Barra an seichten Uferstellen, im Rio grande do Norte und Rio Preto (= Rio São Francisco close to Joazeiro and Barra in shallow banks, at Rio Grande do Norte and Rio Preto), a description that precluded a definitive type locality (Hildebrand, 1943; Carvalho, 1951; Loeb, 2009). Subsequently, Whitehead (1970), in his study of the Clupeoidei described by Steindachner, selected a lectotype (NMW 1931), thus restricting the type locality of *A. vaillanti* to Fazenda Ingaziera. Vanzolini (1992), traced the route of the Austrian expedition to Brazil and the type locality of *Anchoviella vaillanti* (Steindachner, 1908), thus, could be more exactly delimited as Rio Preto at Fazenda Ingazeira, Barra, Bahia, Brazil, 44°10'W, 11°08'S.

## DISCUSSION

Morphometric and meristic characters of the analyzed specimens of *Anchoviella vaillanti* are relatively uniform through the geographic range of the studied samples, showing no evidence of the existence of more than one freshwater species in the upper to middle portions of the Rio São Francisco basin. *Anchoviella vaillanti* was included in a list of species of fishes from Penedo (Alagoas) and Néópolis (Sergipe), both within the lower portion of the Rio São Francisco basin (Barbosa & Soares, 2009). However, vouchers are not available for the confirmation of this record. Intensive searches in ichthyological collections by the first author did not yield specimens of *A. vaillanti* from the lower Rio São Francisco basin, however, the occurrence of the species in the area cannot be disproved.

Other similar, primarily marine or estuarine species of *Anchoviella*, are also reported from the lower portion of the São Francisco basin. *Anchoviella lepidostole* has been recorded from the mouth of the Rio São Francisco to Penedo (Alagoas) ( $n = 21$ ), *Anchoviella cf. cayenensis* (Puyo, 1946) was registered from Piaçabuçu and Penedo (Alagoas) ( $n = 4$ ) and *A. brevirostris* was reported from Piaçabuçu (Alagoas)

( $n = 2$ ) (lots listed in Comparative material). The following identification key includes *A. vaillanti* and the aforementioned species.

## Identification key to species of *Anchoviella* from Rio São Francisco basin

- 1a. Anal-fin origin located at or posterior of vertical through base of last dorsal-fin ray..... 2
- 1b. Anal-fin origin located anterior to vertical through base of last dorsal-fin ray..... 3
- 2a. Number of rakers on lower portion of first bran-chial arch 16-22; anal-fin rays 20-26..... *Anchoviella vaillanti*
- 2b. Number of rakers on lower portion of first bran-chial arch 28-36; anal-fin rays 15-19..... *Anchoviella cf. cayenensis*
- 3a. Upper jaw longer than lower jaw; upper jaw 63-78% of HL..... *Anchoviella lepidostole*
- 3b. Lower jaw longer than upper jaw; upper jaw 51-62% of HL..... *Anchoviella brevirostris*

## RESUMO

*Anchoviella vaillanti* (Steindachner, 1908) foi descrita com base em poucos exemplares do médio Rio São Francisco. Entretanto, amostras adicionais da espécie têm sido coletadas nas últimas décadas. A extensão da variação das características morfológicas de *A. vaillanti* pode então ser reavaliada com base em um grande número de exemplares atualmente disponíveis nas coleções ictiológicas, e a espécie, redescrita. *Anchoviella* pode ser reconhecida dentre as demais congêneres dulcicolas pela posição relativa das nadadeiras pélvica, dorsal e anal. Registros da espécie em coleções ictiológicas estão restritos ao alto e médio Rio São Francisco podendo a espécie, entretanto, ocorrer também no baixo Rio São Francisco. A distribuição das espécies marinhas de *Anchoviella* do baixo Rio São Francisco é comentada e uma chave de identificação destas espécies e *A. vaillanti* é apresentada.

**PALAVRAS-CHAVE:** Ictiologia; Taxonomia; Neotropical; Bacia do Rio São Francisco; Manjuba.

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