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OCCASIONAL PAPERS OF THE
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PERCINA AUSTROPERCA: A NEW SPECIES OF LOGPERCH (PERCIDAE,
SUBGENUS *PERCINA*) FROM THE CHOCTAWHATCHEE AND ESCAMBIA
RIVERS IN ALABAMA AND FLORIDA

By Bruce A. Thompson¹

The species here designated *Percina austroperca*, the southern logperch, until fairly recently was poorly represented in museum collections and not well known to ichthyologists. Specimens were collected first by C. L. Hubbs and E. P. Creaser in 1929 from the upper Conecuh River in Alabama, but not reported. Bailey et al. (1954), in discussing the fishes of the Escambia River drainage of Alabama and Florida, first reported a logperch from Florida. They considered it to represent *Percina caprodes carbonaria*, the designation usually given to logperches from southern United States possessing a red band in the first dorsal fin. Thompson (1978) was the first to recognize the logperch of the Escambia and Choctawhatchee drainages as a distinct species and referred to it as *Percina* "D". Thompson (1980) reported it as an "undescribed relative" of *Percina caprodes*, and he (1985) substantiated that it was a new species. The species is now represented by 154 specimens, and is here described and compared to other logperches from the southern United States, subgenus *Percina*.

The genus *Percina* Haldeman has eight subgenera. The subgenus *Percina* is recognized by its distinctive wide-frenummed snout, wide interorbital distance, and barred body. Thompson (1985) provided a key to the species in the subgenus.

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MATERIALS AND METHODS

Specimens used in this study were from the collections of the Academy of Natural Sciences of Philadelphia (ANSP); Geological Survey of Alabama (GSA); Illinois Natural History Survey (INHS); Louisiana State University Museum of Natural Science (LSUMZ); Mississippi State University (MSU); Northeast Louisiana University (NLU); Tulane University (TU); University of Alabama (UAIC); Florida Museum of Natural History, University of Florida (UF); University of Michigan Museum of Zoology (UMMZ); University of New Mexico (UNM); University of New Orleans (UNOV); United States National Museum of Natural History (USNM); University of Tennessee (UT); and University of West Florida (UWF).

In addition to type material of the new species, the following comparative material was examined. Numbers in parentheses represent numbers of specimens examined. Complete locality and specimen data may be obtained from the author on request.

Meristics and Body Pattern Comparisons.—*Percina* "B", Mobile logperch (31, Alabama or lower Tombigbee river drainages): GSA 5301.14 (1), 6936.22 (1), 6942.24 (1), 6985.19 (1), 7405.20 (1), 7417.24 (2), 7433.20 (1), 7439.22 (1), 7757.23 (7); LSUMZ 10346 (4); TU 47773 (1), 168976 (1), 168974 (2), 168978 (1), 168975 (2), 168977 (3); UAIC 7089.17 (1). *Percina* "C", Gulf logperch (75, Alabama River drainage): TU 32583 (1), 32637 (8), 35326 (3), 35362 (2), 38726 (4), 47507 (1), 56878 (1), 62734 (1), 62784 (2), 62809 (1), 62822 (1), 64553 (1), 64569 (1), 64583 (1), 64617 (1), 64756 (1), 65387 (3), 66315 (5), 66352 (4), 66371 (2), 67429 (1), 68359 (5), 70827 (1), 78558 (1), 78585 (1), 80066 (1), 83431 (6), 83516 (1), 90011 (2), 99037 (1), 99929 (1), 99977 (1), 101788 (1), 103548 (1), 108787 (1), 130756 (1), 139680 (1); UAIC 9708.15 (4). *Percina c. caprodes*, logperch (27, Lower Mississippi River basin): LSUMZ 3311 (1), 4468 (1), 10150 (1), 10342 (18), 10343 (1), 10344 (1), 10345 (3); UNOV 5907 (1).

Comparative Fin Measurements.—*Percina* "B", Mobile logperch (20, Coosa, Cahaba, and Black Warrior river drainages): GSA 7687.12 (2); NLU 9640 (2); TU 40608 (1), 69114 (3), 121094 (1); UF 86191 (2), 86214 (2), 91408 (5), 91966 (1), 94173 (1). *Percina* "C", Gulf logperch (20, Pearl River drainage): TU 39378 (9), 42971 (2), 43020 (3), 56004 (2), 56577 (1), 111570 (3). *Percina carbonaria*, Texas logperch (20, Colorado River drainage): TU 97397 (20). *Percina macrolepida*, Bigscale logperch (20, Neches and Rio Grande river drainages): TU 111670 (1), 111805 (4), 111875 (7), 116113 (4), 120560 (1); UNM 7120 (1), 7148 (2).

Counts and measurements were made according to Hubbs and Lagler (1964) except as discussed by Thompson (1985). Measurements were made with needle-point dial calipers and recorded to the nearest 0.1 mm. Lengths for all specimens are expressed as standard length (SL) in millimeters. Logperch bar and body-pattern terminology follow Thompson (1985). Proportional measurements were taken on male and female specimens from both Escambia and Choctawhatchee drainages, but data from the two

drainages were combined when no significant differences were found. All count and measurement differences discussed are significant at the $\alpha = 0.05$ level using student/Newman/Keuls multiple range tests. Names of fish species follow Robins et al. (1991).

Type material is listed as follows: drainage, state, county, catalog number (number of specimens, size range in mm SL), date, and locality. Abbreviations used are: standard compass directions (with "of" deleted), hwy. = highway, km = kilometer(s), standard two letters for states, Co. = county, U.S. = United States, T = Township, R = Range, sec. = section, and trib. = tributary.

Percina austroperca new species

Southern Logperch

Figure 1

Percina caprodes carbonaria--Bailey, Winn, and Smith (1954).

Percina "D"--Thompson (1978, 1985).

Percina sp. cf. *caprodes*--Boschung (1992).

Percina n. sp. cf. *caprodes*--Gilbert (1992).

HOLOTYPE.--UF 47334, adult male, 128.3 mm SL, Holmes Creek, trib. to Choctawhatchee River, near New Hope (T2N, R16W, sec. 16-22), Washington Co., Florida, collected 16 January 1980 by Grey Bass et al.

PARATYPES.--a total of 144 specimens from the Choctawhatchee and Escambia River drainages of Alabama and Florida:

Choctawhatchee River drainage (57 specimens total): Alabama: Geneva Co.: GSA 5475.21 (1: 115.7 mm SL), 27 Aug 1991, Pea River, upstream from boat launch (T1N, R19E, sec. 12). Florida: Holmes Co.: TU 20412 (4: 90.6-126.1), 12 Jul 1959, Wright's Creek, 10.24 km N Bonifay, Hwy. 177; TU 92376 (1: 51.6), 5 Jul 1973, FL Hwy. 2, 2.4 km W Pittman (T5N, R16W, Sec. 9); TU 101995 (8: 19.9-67.0), 30 Apr 1977, FL Hwy. 2, 2.2 km W Pittman; UAIC 3126 (1: 96.2), 28 Sep 1968, FL Hwy. 2, 2.4 km W Pittman; UAIC 4449.09 (1: 93.6), 21 Oct 1972; 3.6 km N Caryville; UF 55461 (4: 57.3-92.5), 11 Sep 1959, 9.6 km S Geneva, Alabama, FL Hwy. 2 crossing; UF 68961 (1: 78.7), 4 May 1968, Wright's Creek, 9.4 km N Bonifay, FL Hwy. 79 crossing; UF 70996 (3: 68.8-77.2), 4 Nov 1972, Choctawhatchee River, FL Hwy. 2, 9.6 km S Geneva, Alabama; UF 72471 (6: 55.6-63.6), 8 Nov 1969; Choctawhatchee River, FL Hwy. 2, 9.6 km S Geneva, Alabama; UF 73739 (5: 52.2-63.2), 11 Jul 1975, Choctawhatchee River, 4.3 km NW U.S. Hwy. 90 at Caryville. Walton Co.: TU 20558 (6: 42.5-51.8), 16 Jun 1959, Mitchell River, 0.4 km upstream from Choctawhatchee Bay; TU 22728 (8: 62.7-74.8), 27 Oct 1959, Live Oak cut-off, 0.8 km from Choctawhatchee Bay; UF 53098 (2: 58.6-61.6), 8 Oct 1957, Choctawhatchee River, 3.2 km below Morrison Spring Run; UF 55578 (1: 57.9), same data as UF 53098. Washington Co.: TU 20840 (1: 100.7), 24 Jul 1959, Choctawhatchee slough, 0.8 km upstream from Ebro; UF 59044 (1: 120.0), Jul 1960; Holmes Creek, near Vernon; UF 79495 (2:

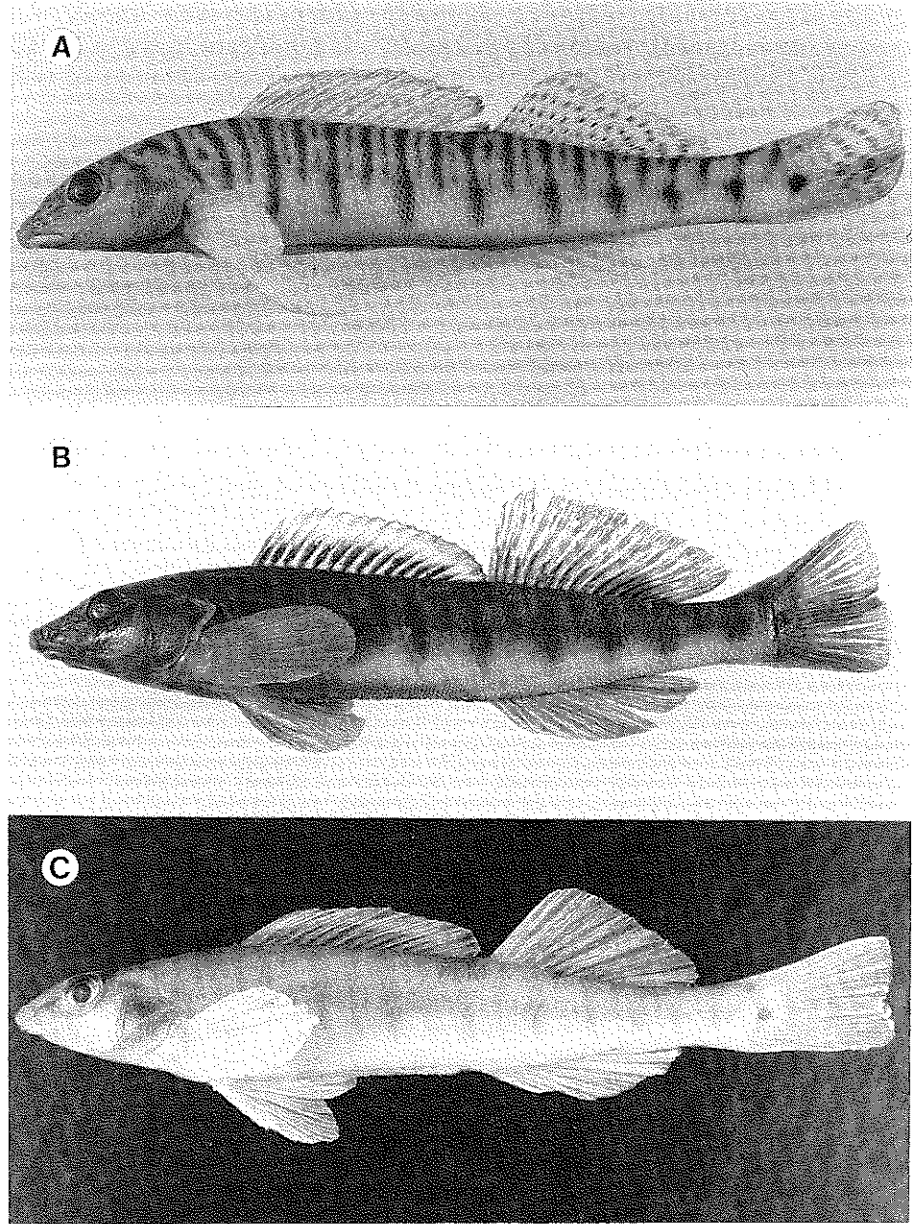


Figure 1. A. *Percina austroperca* n. sp., GSA 4045.34, 125.5 mm SL, paratype male, Conecuh River, Alabama. B. *Percina* "B", Mobile logperch, UF 91966, 135.4 mm SL, tuberculate male, Shoal Creek, Alabama. C. *Percina* "C", Gulf logperch, TU 111570, 97.9 mm SL, male, Pearl River, Louisiana.

95.2-127.0), 3 Nov 1988, Holmes Creek at New Hope, state Hwy. 284; UF 84455 (1: 127.4), 2 Nov 1989, Holmes Creek near New Hope (end of canoe trail).

Escambia River drainage (87 specimens total): Alabama: Covington Co.: GSA 5486.23 (1: 88.3), 29 Aug 1991, Conecuh River at head Gantt Lake (T6N, R17E, sec. 30). Escambia Co.: GSA 4043.32 (2: 71.8-79.4), 19 Sep 1991, Conecuh River at Pollard (T1N, R9E, sec. 33); GSA 4044.24 (4: 63.3-85.3), 19 Sep 1991, Conecuh River at Riverview (T1N, R10E, sec. 9); GSA 4045.34 (6: 71.9-126.4), 20 Sep 1991, Conecuh River at Riverview 2 (T1N, R10E, sec. 9); GSA 4067.33 (6: 67.7-117.2), 2 Oct 1991, Conecuh River, upstream from Hwy. 4 (T2N, R11E, sec. 35); GSA 4068.34 (1: 79.2), 3 Oct 1991, Conecuh River downstream from Hwy. 4 (T2N, R11E, sec. 34); GSA 4291 (6: 100.0-116.7), 17 Aug 1992, Conecuh River below Recreational Landing (T2N, R12E, sec. 21); GSA 5222.14 (1: 98.8), 7 Sep 1990, Cedar Creek (T2N, R10E, sec. 13); GSA 5237.22 (1: 113.8), 22 Oct 1990, Murder Creek (T3N, R10E, sec. 26); GSA 5238.10 (1: 104.9), 23 Oct 1990, Sizemore Creek (T2N, R6E, sec. 35); GSA 5483.15 (1: 126.1), 30 Aug 1991, Conecuh River, Hwy. 29 (T2N, R13E, sec. 6); GSA 5914.22 (1: 67.6), 22 Apr 1981, Little Escambia Creek, Hwy. 31 (T1N, R9E, sec. 30); INHS 86973 (1: 101.4), 24 Jun 1980, Escambia Creek, 6.4 km E Flomaton, Hwy. 29 (T1N, R9E, sec. 30); NLU 23431 (2: 77.2-83.2), 5 Apr 1972, Big Escambia Creek, ca. 3.2 km N Little Rock, Escambia Hwy. 27 (T2N, R7E, sec. 16); TU 15954 (2: 123.5-130.1), 18 Jul 1957, Conecuh River, 4.8 km SE Flomaton; UF 53777 (3: 88.8-116.3), 27 Aug 1958, Conecuh River, 11.2 km N bridge on Hwy. 4, E of Century, at Pollard landing; UAIC 3512.19 (2: 107.6-108.6), 9-10 Apr 1969, Big Escambia Creek, I-65, 19.2 km NE Atmore (T2N, R7E, sec. 4); UMMZ 163556 (4: 65.9-69.8), 11 Apr 1941, Big Escambia Creek, below U.S. 31 bridge at Flomaton (T1N, R8E, sec. 33); USNM 331974 (4: 99.3-117.6), same data as GSA 4291; UT 91.1467 (1: 106.2), 6 Oct 1970, same data as UAIC 3512.19; UT 91.634 (3: 86.5-101.3), 8 Apr 1972, same data as NLU 23431. Pike Co.: UMMZ 88704 (1: 73.2), 16 Sep 1929, High water pond of Conecuh River, 12.8 km W Troy, Hwy. 10. Florida: Escambia Co.: UF 9342 (18), 14 Oct 1954, Escambia River, due E of Pine Barren; UF 53527 (3: 48.6-92.6), 26 Aug 1958, Escambia River, 8.0 km N bridge, FL Hwy. 4, E of Century; UF 55007 (4: 48.8-64.8), 14 Aug 1959, Backwater slough on W bank of Escambia River, 4.3 km E Quintette, FL Hwy 184; UF 84164 (6: 57.1-93.9), 1 Nov 1988, Escambia River, FL Hwy 4 bridge, 1.6 km E Century. Santa Rosa Co.: UF 57730 (1: 61.4), 14 Jan 1960, Mineral Springs Run, 14.4 km SW Jay; UF 73144 (1: 47.8), 13 Jul 1974, Escambia River, 1.6 km downstream from Century-Jay bridge (FL Hwy. 4); UF 73435 (2: 77.0-106), 8 Mar 1975, Escambia River, at bar above Look and Tremble Oxbow Lake.

ADDITIONAL MATERIAL EXAMINED, NOT DESIGNATED AS TYPES.--Choctawhatchee River drainage: Florida: Holmes Co.: uncatalogued number DHC 291 (1: 67.4), 26 Sep 1974, FL Hwy. 2. Escambia River drainage: Alabama: Escambia Co.: MSU 6751 (1: 74.9), 19/20 Oct 1976, Big Escambia Cr., Hwy. 31, Flomaton. Florida: Escambia Co.: ANSP 73000 (1: 21.6 mm), Escambia R. at backwater, 5.6 km E Cantonment; UMMZ 165154 (2: 22.0-25.5), 3 Apr 1953, same data as ANSP 73000; UWF 506 (1: 92.1), 16 Apr 1973, Pine

Barrens Cr., Florida: Santa Rosa Co.: UWF 273 (3: 77.6-83.8), 25 Apr 1972, Escambia R. 8.8 km W and 0.8 km S Jay.

DIAGNOSIS.--*Percina austroperca* (Fig. 1a) is distinguished from all other members of the subgenus *Percina* Haldeman by the following combination of characteristics: 1) thin red submarginal band in first dorsal fin; 2) nape always entirely scaled; 3) scales absent on top of head and anterior part of breast; 4) prepectoral blotch absent in adults; 5) lateral pattern dominated by thin vertical bars, with nine whole bars developed and anterior whole bars only slightly widened into blotches; and 6) only slight dark gray breeding shading on anterior portion of body.

Percina austroperca is separable from *P. jenkinsi*, *P. macrolepida*, *P. caprodes semifasciata*, and *P. c. caprodes* by having a red band in the spinous dorsal fin. *Percina austroperca* and six other logperches (*P. burtoni*, *P. caprodes fulvitaenia*, *P. carbonaria*, *P. rex*, and the undescribed Mobile logperch *Percina* "B" and Gulf logperch *Percina* "C") possess distinct red bands in that fin (Table 1). *Percina austroperca* is distinguished from *P. carbonaria*, *P. caprodes fulvitaenia*, *P. rex*, and *Percina* "B" (Fig. 1b) in that the red band is thin. *Percina austroperca* also differs from *Percina* "B" in possessing higher second dorsal and pectoral fin ray counts (Table 2), and lower diagonal scale counts (Tables 3 and 4). It differs from *P. burtoni* in having a completely submarginal red band in the spinous dorsal fin, having thin whole and half bars well developed on the body, and always possessing a fully-scaled nape. This last character also separates *P. austroperca*

Table 1. Comparison of size and position of the red band in the spinous dorsal fin of male logperches.

Species	Band Size	Band Position
<i>P. austroperca</i>	narrow, 20-25% of fin width	submarginal; below black marginal band only slightly narrower than red band along entire length of fin
<i>P. burtoni</i>	narrow; 20-25% of fin width	marginal; except at posterior fin where thin black band is present
<i>P. caprodes fulvitaenia</i>	wide; 25-35% of fin width	submarginal; thin black band at margin only anteriorly
<i>P. rex</i>	moderately narrow; 25-30% of fin width	submarginal; thin marginal black band wider at posterior of fin
<i>P. "B"</i>	very wide; 40-50% of fin width	submarginal; moderately wide black band only entire margin of fin
<i>P. "C"</i>	narrow; 15-25% of fin width	submarginal; marginal black band can be wider than red band

from *P. caprodes semifasciata*. *Percina macrolepida* has larger scales, is scaled both on the top of the head and most of the breast and often possesses half bars nearly as long as its whole bars. *Percina austroperca* most closely resembles the Gulf logperch, *Percina* "C", with which it is allopatric. *Percina* "C" (Fig. 1c) shares a thin red band in the spinous dorsal and thin body bars with *P. austroperca* but differs in having lower counts of total dorsal elements, anal rays, total pectoral rays (Table 2), pored lateral line scales (Table 3), diagonal scales (Tables 4 and 5), and caudal peduncle scales (Table 6). *Percina austroperca* also has a higher average vertebral number than *Percina* "C"; the mode being 44 in *P. austroperca* and 43 in *Percina* "C".

DESCRIPTION.—*Percina austroperca* is a large logperch (maximum size 130 mm SL). It is not as robust as other large logperch such as *P. burtoni*, *P.*

Table 2. Frequency distributions of fin counts in *Percina austroperca*, *P.* "B", and *P.* "C".

DORSAL SPINES												
Species/Drainage	13	14	15	16	17		N	MEAN	SD	CV		
<i>P. austroperca</i>												
Choctawhatchee	--	--	32	20	--		52	15.4	0.50	3.2		
Escambia	1	13	74	9	--		97	14.9	0.52	3.5		
<i>P.</i> "B"	--	2	12	16	2		32	15.6	0.72	4.6		
<i>P.</i> "C"	2	18	44	11	--		75	14.9	0.69	4.7		
DORSAL RAYS												
Species/Drainage	13	14	15	16	17	18	N	MEAN	SD	CV		
<i>P. austroperca</i>												
Choctawhatchee	--	--	--	16	30	6	52	16.8	0.63	3.7		
Escambia	--	--	--	41	56	1	98	16.6	0.51	3.1		
<i>P.</i> "B"	--	1	10	14	7	--	32	15.8	0.81	5.1		
<i>P.</i> "C"	2	37	34	2	--	--	75	14.5	0.60	4.2		
TOTAL DORSAL ELEMENTS												
Species/Drainage	27	28	29	30	31	32	33	34	N	MEAN	SD	CV
<i>P. austroperca</i>												
Choctawhatchee	--	--	--	--	10	24	16	2	52	32.2	0.79	2.4
Escambia	--	--	--	6	39	46	6	--	97	31.5	0.71	2.2
<i>P.</i> "B"	--	--	1	6	10	9	6	--	32	31.4	1.10	3.5
<i>P.</i> "C"	1	11	31	26	6	--	--	--	75	29.3	0.88	3.0

Table 2, continued. Frequency distributions of fin counts in *Percina austroperca*, *P.* "B", and *P.* "C".

ANAL RAYS											
Species/Drainage	8	9	10	11	12		N	MEAN	SD	CV	
<i>P. austroperca</i>											
Choctawhatchee	--	--	32	5	11		52	11.2	0.57	5.1	
Escambia	--	1	74	20	5		98	10.8	0.52	4.8	
<i>P. "B"</i>	--	--	12	6	8		31	11.1	0.68	6.2	
<i>P. "C"</i>	1	39	44	32	--		75	9.5	0.60	6.3	
TOTAL PECTORAL RAYS											
Species/Drainage	26	27	28	29	30	31	32	N	MEAN	SD	CV
<i>P. austroperca</i>											
Choctawhatchee	--	--	--	4	32	10	5	51	30.3	0.76	2.5
Escambia	--	--	2	4	83	4	4	97	30.0	0.58	1.9
<i>P. "B"</i>	--	1	16	6	9	--	--	32	28.7	0.92	3.2
<i>P. "C"</i>	9	13	48	4	1	--	--	75	27.7	0.81	2.9

carbonaria, *P. rex*, and *Percina* "B". Frequency distributions of fin-ray and scale counts are given in Tables 2 through 6. *Percina austroperca* has intermediate to high meristic counts overall; usually higher than *Percina* "C", but often lower than *P. jenkinsi* (Thompson, 1985) or *Percina* "B".

Proportional measurements for adult male and female *P. austroperca* are presented in Table 7. There is no significant sexual dimorphism in most body proportions. Branchiostegal membranes are separate or rarely slightly conjoined in larger adults. The broad frenum and conical overhanging snout characteristic of logperch is present. The cephalic sensory canal system is typical for the subgenus *Percina* (Page, 1977, 1983; Thompson, 1985): one coronal pore, three supratemporal canal pores, four supraorbital canal pores, eight infraorbital canal pores, and ten preoperculomandibular canal pores. All canals are normally uninterrupted and complete.

Dorsal spines usually number 15 or 16, and dorsal rays range from 16 to 18 (modally 17). There are usually the same number of spines as rays, as in *Percina* "C", or more rays than spines in the dorsal fin, as in *P. caprodes* and *Percina* "B". This differs from *P. jenkinsi* which has more spines than rays in the two dorsal fins (Thompson, 1985). There are 31-34 total dorsal elements. The anal fin has two (rarely one) spines and 10-12 rays. Total pectoral rays number 30-32, being modally higher than both *Percina* "B" and *Percina* "C". There is slight geographical variation in pored lateral line scales; specimens from the Choctawhatchee drainage have a higher count than from the Escambia. The

Table 3. Frequency distributions of pored lateral line scales in *Percina austroperca*, *P. "B"*, and *P. "C"*.

NUMBER OF SCALES																							
Species/Drainage	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	N	MEAN	SD	CV	
<i>P. austroperca</i>																							
Choctawhatchee	-	-	-	-	-	-	-	-	-	-	4	10	9	5	10	5	6	2	51	92.1	2.00	2.2	
Escambia	-	-	-	-	-	-	-	4	7	19	25	22	11	6	1	-	-	-	95	89.3	1.54	1.7	
<i>P. "B"</i>	-	-	-	-	-	-	-	-	-	3	5	7	5	3	4	1	1	2	32 ¹	91.4	2.92	3.2	
<i>P. "C"</i>	1	1	1	8	8	15	17	11	8	1	3	1	-	-	-	-	-	-	75	84.7	2.01	2.4	

¹ Totals include one count of 102 not shown.

Table 4. Frequency distributions of diagonal (transverse) scale counts in *Percina austroperca*. P. "B", and P. "C".

ANAL FIN TO SPINOUS DORSAL																						
Species/Drainage	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	N	MEAN	SD	CV
<i>P. austroperca</i>																						
Choctawhatchee	-	-	-	-	-	1	-	-	4	15	15	11	5	-	-	-	-	-	52	29.9	1.38	4.6
Escambia	-	-	-	-	-	-	4	12	19	31	20	5	4	-	-	-	-	-	95	29.9	1.37	4.8
<i>P.</i> "B"	-	-	-	-	-	-	-	1	1	2	5	2	6	6	4	2	2	1	32	32.2	2.39	7.4
<i>P.</i> "C"	3	4	8	16	24	13	5	2	-	-	-	-	-	-	-	-	-	-	75	23.6	1.53	6.5
SECOND DORSAL TO ANAL FIN																						
Species/Drainage	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	N	MEAN	SD	CV		
<i>P. austroperca</i>																						
Choctawhatchee	-	-	-	-	-	1	1	3	19	19	9	-	-	-	-	-	52	24.6	1.04	4.2		
Escambia	-	-	-	-	-	1	13	27	38	13	3	-	-	-	-	-	95	23.6	1.02	4.3		
<i>P.</i> "B"	-	-	-	-	-	1	-	1	3	12	4	2	1	4	-	3	1	32	26.3	2.59	9.8	
<i>P.</i> "C"	2	8	24	19	17	2	3	-	-	-	-	-	-	-	-	-	75	19.8	1.29	6.5		
ABOVE LATERAL LINE																						
Species/Drainage	7	8	9	10	11	12	13	14	N	MEAN	SD	CV										
<i>P. austroperca</i>																						
Choctawhatchee	-	-	-	3	27	13	8	1	52	11.6	0.90	7.7										
Escambia	-	-	6	23	63	3	-	-	95	10.7	0.65	6.1										
<i>P.</i> "B"	-	1	-	1	13	11	5	1	32	11.6	1.10	9.5										
<i>P.</i> "C"	5	35	31	4	-	-	-	-	75	8.5	0.70	8.3										

Table 6. Frequency distributions of caudal peduncle circumference scale counts of *Percina austroperca*, *P. "B"*, and *P. "C"*.

ABOVE LATERAL LINE																		
Species /Drainage	10	11	12	13	14	15	16	17		N	MEAN	SD	CV					
<i>P. austroperca</i>																		
Choctawhatchee	-	-	-	1	17	34	-	-		52	14.6	0.53	3.6					
Escambia	-	-	-	1	34	58	2	-		95	14.6	0.54	3.7					
<i>P. "B"</i>	-	-	-	-	6	12	8	6		32	15.4	1.01	6.6					
<i>P. "C"</i>	1	8	16	37	12	-	-	-		74	12.7	0.92	7.3					
BELOW LATERAL LINE																		
Species/Drainage	12	13	14	15	16	17	18		N	MEAN	SD	CV						
<i>P. austroperca</i>																		
Choctawhatchee	-	-	-	2	12	38	-		52	16.7	0.54	3.3						
Escambia	-	-	-	14	38	43	-		95	16.3	0.72	4.4						
<i>P. "B"</i>	-	-	-	3	14	11	4		32	16.5	0.84	5.1						
<i>P. "C"</i>	3	12	29	29	-	1	-		74	14.2	0.90	6.4						
TOTAL SCALES																		
Species/Drainage	24	25	26	27	28	29	30	31	32	33	34	35	36	37	N	MEAN	SD	CV
<i>P. austroperca</i>																		
Choctawhatchee	-	-	-	-	-	-	1	1	8	12	30	-	-	-	52	33.3	0.94	2.8
Escambia	-	-	-	-	-	-	-	15	4	49	25	2	-	-	95	33.0	1.02	3.1
<i>P. "B"</i>	-	-	-	-	-	-	-	3	3	11	1	9	1	4	32	33.9	1.78	5.3
<i>P. "C"</i>	1	2	6	6	9	19	21	9	-	1	-	-	-	-	74	28.9	1.72	6.0

Table 7. Proportional measurements of *Percina austroperca*, expressed as thousandths of standard length.

Measurement	Holotype	Males (14)		Females (10)	
		Mean	Range	Mean	Range
Standard length (mm)	128.3	118.2	107.9-130.1	108.5	95.2-127.4
Thousandths of SL					
Head length	253	254.1	244-266	254.6	246-259
Snout length	97	95.8	91-101	95.7	89-98
Eye diameter	47	47.1	45-50	49.9	46-54
Upper jaw length	79	79.1	74-83	81.1	79-85
Post-orbit HL	121	122.0	116-125	118.5	106-124
Snout - D ₁ origin	309	313.0	304-323	315.2	301-325
Snout - D ₂ origin	629	628.4	608-645	637.5	623-659
Snout - A origin	608	626.3	612-637	631.8	615-649
Snout - P ₁ origin	245	241.1	233-257	242.6	231-252
Snout - P ₂ origin	287	283.1	269-302	286.7	276-305
Body depth	193	166.2	155-175	162.8	141-188
Body width	138	144.1	137-150	145.4	135-172
Head depth	147	133.6	125-139	136.2	130-150
Head width	143	137.3	132-140	134.7	130-149
Interorbit width	62	59.1	55-63	61.3	56-68
P ₂ - P ₂ width	84	76.7	73-82	77.0	70-82
P ₁ length	189	181.4	174-190	187.6	174-208
P ₂ length	173	173.0	167-184	177.7	166-193
Snout depth	78	73.0	68-79	65.3	59-72
Snout width	53	61.9	58-65	58.9	52-63
Gape	57	52.4	48-56	52.8	48-59
Caudal peduncle depth	90	84.5	80-90	82.3	80-86
Caudal peduncle length	225	227.5	217-244	223.2	206-243

lateral line count overlaps that of *Percina* "B", but is significantly higher than *Percina* "C". Diagonal scales counts are lower than *Percina* "B" but higher than *Percina* "C". The diagonal sum separates *P. austroperca* from *Percina* "C", but has about 50% overlap with *Percina* "B". Caudal peduncle scale counts show a similar pattern, overlapping with *Percina* "B" but showing little overlap with *Percina* "C".

The total vertebral number is 43-45, with a mode of 44 and a mean a 44.0 (N = 70); no evidence of geographical variation has been observed in this character.

The nape, cheek, and opercle are completely scaled with exposed ctenoid scales. The breast is naked, lacking the large central modified scute(s) found in the subgenera *Swainia*, *Cottogaster*, *Alvordius*, and *Ericosma*. Modified scutes on the pelvic arch usually number 3-7 in males but often are absent in females. The modified midventral row of scutes becomes 2-3 scales wide immediately anterior to the vent, and is well developed in adult males. Scutes number 22-37, with mean = 28.7 in males. Although usually absent in females, up to eight modified scutes towards the posterior section of the belly have been found.

No reproductively active *P. austroperca* have been collected, so little is known about its breeding habits. The holotype, taken 16 January, lacks breeding tubercles but possesses tubercular ridges on the spines and rays of the anal fin. Slight development of these ridges occurs on the ventral surface of the pelvic rays. The specimen is probably a prespawning adult. Collections of small (20-25 mm SL) young-of-the-year taken in early (UMMZ 165154, ANSP 73000) to late (TU 101995) April indicate a spawning season in February and March.

Table 8 compares median fin proportions of *P. austroperca* with other logperches from the southern United States. The only sexual dimorphism in this species is found in the length of the second dorsal fin. This contrasts with several other logperches that are sexually dimorphic in several median fin proportions, particularly in both the second dorsal and anal fin being longer in males. Occasionally, females have larger fins such as the anal fin base in *P. macrolepida*. The strongest dimorphism is found in the two sister species *P. carbonaria* and *Percina "B"*.

COLOR PATTERN.--The body pattern of *P. austroperca* consists of numerous narrow vertical bars. These are dark brown in contrast to the yellow-tan tone of the upper half of the body. The lower body is a pale yellow to light cream, devoid of melanophores. There are 9 whole body bars that are slightly expanded into lateral blotches immediately below the lateral line. The posterior blotches are less elongate than the anterior ones. Between the whole bars are half and quarter bars that are always shorter than the whole bars and are never widened into lateral blotches. The quarter bars are very narrow and are sometimes irregularly missing. Anterior to the spinous dorsal fin there are usually four narrow bars crossing the midline, but sometimes these become broken into "dashes and dots". A prepectoral blotch is absent. Head pigment is very diffuse. The subocular bar, if present, is usually faint. There are no distinctive markings on either the cheeks or opercles. The upper part of the head and snout has a distinctive pattern of reticulations. *Percina austroperca* does not show the secondary intense blackening on the head and anterior body similar to that found in *P. carbonaria* and other logperches, but nuptial males have yet to be collected.

The spinous dorsal fin of *P. austroperca* has a narrow red band that is always submarginal to a dusky black distal band. Proximal to the red band the fin is usually clear in both sexes. The basal half of the fin has a dark wash on the interspinous membranes that is darker in males than females. The second dorsal fin possesses a series of dashes on the rays that form 3-4 irregular lines across the fin. The edge of the second dorsal fin is dusky, similar to the spinous dorsal fin. The caudal fin pattern is similar to that of the second dorsal, with a series of dashes on the caudal rays forming 3-4 irregular lines across the fin. The anal fin is usually white or translucent, lacking melanophores. The pelvic fins are usually clear, although there is slight secondary darkening on the holotype. The pectoral fins are clear/white with no development of dashes that are present in some logperch species. The

Table 8. Proportional measurements of medial fins for six species of logperch, subgenus *Percina*, measured in thousandths of SL (Mean, Range).

Species	First Dorsal Base	Second Dorsal Base	Anal Fin Base	Second Dorsal Fin Length	Anal Fin Length
<i>P. australopercus</i> male (18)	326, 305-342	229, 212-249	156, 148-174	282, 268-327	231, 213-250
<i>P. "B"</i> female (10)	323, 311-349	227, 210-239	158, 142-170	269, 246-283	220, 206-237
<i>P. "C"</i> male (10)	325, 315-337	221, 216-238	171, 161-180	304, 295-332	269, 252-285
<i>P. "C"</i> female (10)	321, 291-340	211, 190-232	157, 129-171	259, 238-289	233, 206-247
<i>P. "C"</i> male (10)	329, 315-341	209, 197-221	130, 117-143	286, 266-301	239, 213-262
<i>P. "C"</i> female (10)	329, 292-362	198, 181-219	121, 110-136	248, 230-264	204, 190-213
<i>P. macrolepidota</i> male (10)	318, 306-341	224, 196-214	109, 96-119	263, 248-268	206, 194-225
<i>P. "C"</i> female (10)	325, 314-348	199, 173-220	115, 103-135	240, 214-262	182, 156-206
<i>P. carbonaria</i> male (10)	307, 287-325	231, 216-249	172, 158-188	326, 310-344	277, 261-293
<i>P. "C"</i> female (10)	306, 296-320	215, 200-229	154, 143-168	269, 257-300	237, 217-251
<i>P. jenkinsi</i> ¹ male (5)	310, 289-322	206, 198-216	---	---	---
<i>P. "C"</i> female (5)	307, 293-320	205, 197-220	---	---	---

¹data from Thompson (1985)

typical large basicaudal spot present in most logperches is very well developed in *P. austroperca*.

SIZE.--*Percina austroperca* is one of the larger logperches, with a known maximum size of 130.1 mm SL. Only three logperches are known to exceed this size: *P. burtoni*, *P. c. caprodes*, and *Percina "B"* all reach 145 to 160 mm SL.

HABITAT.--*Percina austroperca* appears to prefer rivers and larger creeks. The largest number of specimens have been taken from the main channel of the Conecuh River in southern Alabama. These were collected during the summer from gravel and rubble shoals with permanent current. Three collections (UMMZ 165154, ANSP 73000, TU 101995) include small young-of-the-year *P. austroperca* from quiet, backwater areas.

Species collected with *Percina austroperca* from three localities in the Choctawhatchee drainage were: *Anguilla rostrata*, *Alosa alabamae*, *Cyprinella venusta*, *Notropis buccatus*, *N. harperi*, *N. longirostris*, *N. texanus*, *N. winchelli*, *Opsopoeodus emiliae*, *Erismyzon succetta*, *Minytrema melanops*, *Moxostoma poecilurum*, *Esox americanus*, *E. niger*, *Fundulus lineolatus*, *F. olivaceus*, *Labidesthes sicculus*, *Lepomis macrochirus*, *L. megalotis*, *L. microlophus*, *Micropterus salmoides*, *Pomoxis nigromaculatus*, *Ammocrypta bifascia*, *Etheostoma davisoni*, *Percina nigrofasciata*, and *Trinectes maculatus*. Additional species collected with *P. austroperca* from the main Escambia River include: *Macrhybopsis cf. aestivalis*, *Capriodes velifer*, *Ictalurus punctatus*, *Ambloplites ariommus*, and *Micropterus punctulatus*.

DISTRIBUTION.--*Percina austroperca* is known from the Choctawhatchee and Escambia River drainages in Alabama and Florida (Figure 2). It is uncommon in the Florida (lower) reaches of the Choctawhatchee River and its larger tributaries, but only one specimen (GSA 5475.21) is known from the Alabama portion of the river. It is found throughout the Escambia/Conecuh River and several of its main tributaries, being most common in the middle reaches of the main channel of the Conecuh River in Alabama. This species is allopatric to all other logperch species and is the easternmost logperch on the Gulf coast. *Percina austroperca* has a unique range, being the only fish species restricted to the Escambia and Choctawhatchee drainages. Gilbert (1992) showed *Etheostoma proeliare* to have this same range in Florida, but it has a more widespread distribution overall. Several fish species such as *Macrhybopsis cf. aestivalis*, *Lepisosteus spatula*, *Ammocrypta bifascia*, and *Etheostoma davisoni* are present in the Choctawhatchee and Escambia drainages, but are also found in the coastal rivers and streams between them.

STATUS.--Gilbert (1992) categorized *P. austroperca* as one of the 13 rare fishes in Florida although few data were available for the species. Alabama has not listed this species in any conservation category. Based on the number of specimens available, particularly from recent collections, a conservation listing for *P. austroperca* in Alabama seems unwarranted at present.

RELATIONSHIPS.---Relationships within the subgenus *Percina* are incompletely resolved. As noted by Thompson (1985) and Etnier and Starnes (1993) the systematics of the subgenus is complex. *Percina austroperca* appears

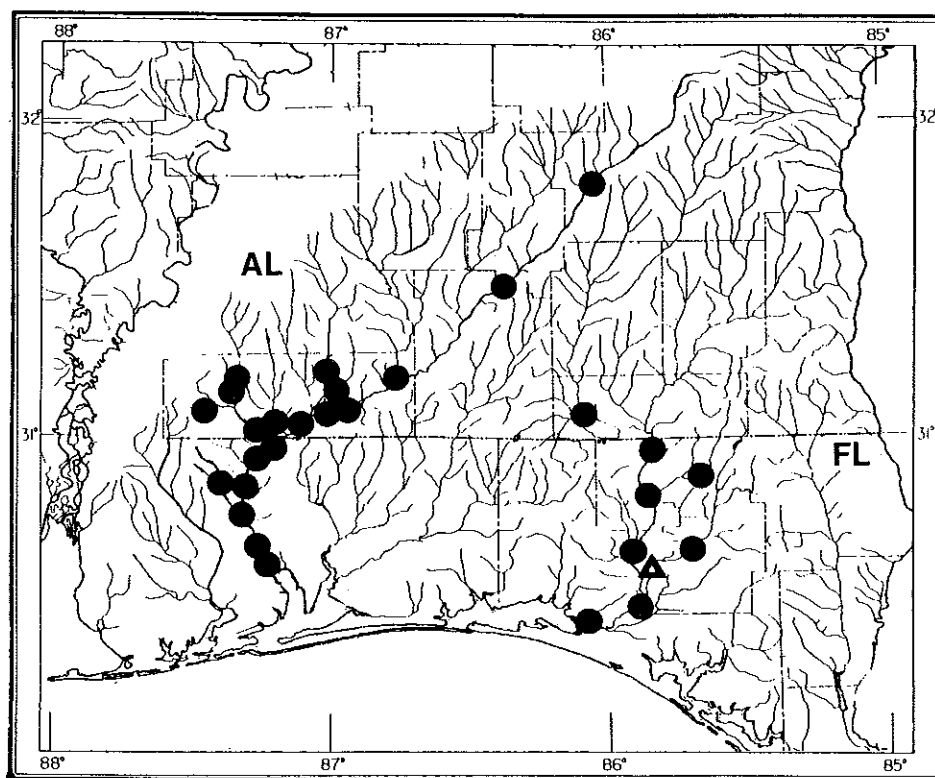


Figure 2. Distribution of *Percina austroperca* in the Choctawhatchee (east) and Escambia (west) drainages in Alabama and Florida. The type locality is marked with an open triangle.

to be the sister species to the undescribed Gulf logperch *Percina* "C", found in Gulf of Mexico drainages from the Mobile drainage to northern tributaries of Lake Pontchartrain. These two species share thin red bands in the spinous dorsal fin and thin whole and half bars on the body. Both species also often possess well-developed quarter bars. Neither is known to possess tubercles on their body scales nor develop dark breeding pigment on the head, body, or fins. The ancestral form probably occupied Gulf drainages east of the Mississippi River. Populations east of Mobile Bay became *P. austroperca* and more western populations evolved into the smaller, more specialized *Percina* "C", possessing greatly reduced meristic characters.

ETYMOLOGY.--This species is one of the most southern species of logperch, with the name being derived from the prefix "austro", meaning southern, and "perca", a perch (Jaeger, 1966). The common name, southern logperch, is in reference to this geographic range. Thompson (1985) used Florida logperch as a common name when most records were from that state.

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