

Table . -- Number of Gillrakers in S. c. henshawi and S. c. humboldtensis

	N	18	19	20	21	22	23	24	25	26	27	28	Mean
Combined <u>henshawi</u> data from Table .	161				3	18	32	47	32	14	11	4	24.2
Combined <u>humboldtensis</u> data from Tables and	137	2	15	31	32	47	7	3					21.0

Table . -- Characters of Pine Creek and Lehman Creek Specimens

Character	Pine Creek, Nevada			Lehman Creek
	N	Range	Mean	(N=2) Mean
Scales, lateral series	28	133-156	143.8	148.0
Scales above lateral line	21	37-44	40.1	42.0
Vertebrae	28	60-63	62.3	62.0
Gillrakers	31	19-23	21.5	20.5
Basibranchial teeth	31	6-46	22.5	18.5
Caudal peduncle, depth	31	98-120	112.9*	120.5*
Dorsal fin length	31	203-248	223.5*	219.5*
Head length	31	266-321	294.9*	283.0*
Upper jaw length	31	153-197	172.6*	165.5*

*In thousandths of the standard length

Table . -- Comparison of cutthroat and rainbow-cutthroat hybrids, Reservoir Canyon, Pine Valley, Utah.

Sample	Pelvic Rays				Vertebrae			Basibranchial Teeth			Scales Lateral Series			Scales Above Lateral Line		
	8	9	10	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
Headwater (cutthroat)	1	14	3	9.1	18	61-64	62.2	16 2	1-9 0	4.9	18	139-167	157.3	18	39-44	41.5
Mid-Section (cutthroat)	--	13	--	9.0	13	61-64	62.0	12 1	1-7 0	2.5	12	145-182	159.2	13	38-46	42.1
Lower Section (Hybrids)	--	23	16	9.4	39	59-65	62.5	13 26	1-11 0	5.3	15	126-163	146.4	34	29-48	38.5

Table . -- Meristic variation in "typical" Salmo clarkii lewisi.

Sample	Gillrakers			Vertebrae			Basibranchial Teeth			Scales Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
ALBERTA, CANADA,												
<u>S. Saskatchewan System</u>												
Pickle Jar Lake	36	17-21	18.9	35	59-61	60.2	32 4	2-26 0	9.6 --	15	162-182	172.1
Gorge Creek	27	14-19	16.5	28	60-62	61.0	21 5	1-16 0	6.6 --	10	153-188	170.4
Ware Creek	34	16-22	18.7	35	60-64	61.8	28 4	1-16 0	7.2 --	15	131-172	153.8
U.S.A.												
Yellowstone Lake	30	19-23	20.6	30	60-63	61.5	29	1-27	13.7	30	149-202	170.3
<u>Snake River Drainage</u>												
Fish Creek, Wyoming	4	19-22	19.8	4	61-63	62.5	4	12-26	19.2	4	169-196	182.5
Game Creek, Wyoming	26	17-21	19.0	25	61-64	62.1	26	4-38	12.5	14	146-166	157.5
Goose Creek, Nevada	39	18-21	19.6	21	60-63	61.7	26 2	1-17 0	5.3 --	28	143-177	158.7
Irving Creek, Idaho (now isolated drainage)	5	20-22	20.4	10	62-64	63.0	5	6-14	9.4	5	175-189	179.4

Table . -- Comparison of Salmo clarkii macdonaldi and Salmo clarkii stomias collected from Twin Lakes Colorado, 1889.

	Gillrakers			Basibranchial Teeth			Scales Lateral Series			Scales Above Lateral		Line
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
<u>macdonaldi</u>	2	21-22		2	15-16		1	182		2	38-46	
<u>stomias</u>	8	18-20	19.5	8	6-14	10.6	7	70-202	186.9	7	46-53	49.0

Table . -- Meristic Variation in the Golden Trout Complex

Sample	Gillrakers			Vertebrae			Pyloric Caeca			Pelvic Rays			Scales			Scales -- above Lateral Line		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean	No.	Range	Mean
<u>Salmo aquabonita</u>																		
Cottonwood Creek and Lakes - 1912	9	18-22	20.2	9	58-61	59.7	--	--	--	--	9	--	8	156-186	175.8	7	35-44	39.4
Cottonwood Creek, 1954	16	19-21	19.8	39	58-61	59.7	16	22-36	28.9	--	16	1	5	176-211	187.4	7	38-43	40.9
South Fork Kern River, 1954	16	17-21	19.2	34	58-62	59.4	10	24-36	29.8	1	14	1	15	151-182	168.0	9	38-43	39.8
Golden Trout Creek, 1891, 1904, 1912	23	18-20	19.0	24	58-61	59.3	--	--	--	1	20	1	22	148-182	164.6	22	35-45	38.8
Golden Trout Creek, 1954	15	17-21	19.4	31	58-61	59.3	15	26-40	31.7		12	3	11	163-212	174.9	13	38-45	40.5
Sally Keyes Lake, Fresno Co., Calif. 1961	32	18-20	18.7	22	58-61	59.4	17	21-33	26.9	1	16	5	18	151-175	164.8	14	34-42	39.1
Arizona "native" trout																		
White Mtns, Ariz. 1872*	3	18-19	18.7	3	58-60	59.0	--	--	--	--	--	3	2	141-158	--	2	37-40	--
E. Fork, White River, Apache Co. Ariz. 1950	20	18-21	19.5	20	58-61	59.5	2	30-31	--	--	7	13	16	144-168	155.4	10	32-36	34.2
<u>Salmo gilae</u> **	25	18-20	19.0	20	59-62	60.2	10	31-42	34.9	--	15	19	25	133-151	141.2	25	24-29	
<u>Salmo gilae</u> **	25	18-21	19.1	25	59-63	60.7	--	--	--	--	--	--	17	138-153	146.0	17	28-35	31.8
<u>Salmo chrysogaster</u> **	82	15-20	17.5	81	55-61	57.5	81	10-30	22.0	10	98	--		typically 120-150 (variable among populations)			typically 18-25	

*Collected by Yarrow

**From Miller (1950)

***From Needham and Gard (1959)

Table . -- Some Meristic Characters of Salmo regalis

Collection Date	Gillrakers			Vertebrae			Scales Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
1912	4	19-22	20.5	2	64	--	4	144-153	149.8
1949	1	21	--	1	63	--	1	136	--
1960	1	19	--	1	62	--	1	127	--

Table . -- Some Meristic Characters of Kern River Trout Populations (exclusive of aguabonita)

Sample and Collection Date	Gillrakers			Vertebrae			Pyloric Caeca			Scales-Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
<u>gilberti</u>												
Kern River (1876-1912)	17	18-23	19.9	17	60-63	61.5	--	--	--	13	137-172	153.4
Kern River (1956)	3	18-20	19.0	3	59-63	61.3	3	35-52	43.7	3	139-148	143.3
Coyote Creek (1956) (below falls)	12	18-22	19.8	12	61-63	62.2	1	40	--	12	138-154	144.8
<u>"whitei"</u>												
Little Kern River and Coyote Creek (1904)	7	20-21	20.6	8	60-63	61.5	--	--	--	8	148-167	159.0
Coyote Creek (1956)	33	19-23	21.0	33	59-63	61.2	15	29-46	39.8	20	135-182	150.5
Rifle Creek (1956)	22	18-22	20.0	22	60-62	61.2	15	29-48	37.1	15	139-172	154.7
Little Kern River (1956)	5	20-22	21.2	5	60-63	61.4	5	36-43	39.2	5	151-164	155.4
Salmon Creek (1961)	10	18-21	19.2	10	59-61	60.1	10	24-35	28.8	10	128-154	141.0
<u>"rosei"</u>												
Culver Lake (1923)	3	21-23	22.0	3	60-62	61.0	--	--	--	3	155-170	162.1

Table . -- Salmo clarkii stomias

Sample and Date of Collection	Gillrakers			Vertebrae			Basibranchial Teeth			Scales Lateral Series			Scales Above Lateral Line		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean
SOUTH PLATTE SYSTEM															
Moraine Park Colorado - 1889	1	19	--	1	59	--	1	0	--	1	195	--	1	44	--
Bear Creek, Morrison, Colorado - 1889	4	16-20	18.3	4	62-63	62.5	1 3	1 0	-- --	--	--	--	4	41-44	42.7
Pingaree Park Colorado - 1932	2	18-20	--	--	--	--	2	1-6	--	2	196-213	--	2	47-48	--
Albion Creek, Boulder Co. Colorado - 1955	9	18-22	19.4	9	59-61	60.1	7	1-23	6.9	9	178-205	191.2	9	44-51	47.2
Big Thompson River Rocky Mtn. Nat. Park Colorado - 1959	20	18-21	19.1	20	59-62	60.8	19 1	1-10 0	7.1 --	19	177-215	199.8	11	43-51	47.5
NORTH PLATTE SYSTEM															
Red Canyon, Jackson Co., Colorado - 1950	20	18-22	19.6	20	59-61	59.9	15 5	1-13 0	4.2 --	20	172-194	184.5	20	40-49	44.0
ARKANSAS SYSTEM															
Arkansas R., Leadville Colorado - 1889	2	21-22	--	4	60-62	61.0	2	2-12	--	2	198-213	--	2	46-49	--
Twin Lakes, Leadville Colorado - 1889	8	18-20	19.5	7	61-62	61.7	8	6-14	10.6	7	170-202	186.9	7	46-53	49.0

Table . -- Meristic Characters of Pre-Seward Migrant Steelhead

Area	No.	Gillrakers		Vertebrae		Scales Lateral Series	
		Range	Mean	Range	Mean	Range	Mean
Russian River	7	18-20	18.6	61-63	62.0	118-132	123.6
San Lorenzo River	9	18-21	19.1	61-63	62.1	117-127	120.6
Waddell Creek	5	19-21	20.2	60-62	61.0	118-132	123.4

Table . -- Meristic Characters of the Eagle Lake Rainbow

Sample	Gillrakers							Vertebrae						Scales, Lateral Series					
	N	16	17	18	19	20	21	22	Mean	N	61	62	63	64	65	Mean	N	Range	Mean
(from Snyder-1917)	4	1		2	1				17.8								4	136-140	138.0
Crystal Lake Hatchery (1957)	20	1	6	8	4		1		18.0	19	3	10	4	2	62.3	10	122-142	130.5	
Eagle Lake (1951)	8				1	5	2		20.1	8	3	1	1	4	2	63.9	8	135-155	143.4
Pine Creek (1939-40)	4			1	1		1	1	20.0	2		1		1	63.0	4	129-137	133.0	

Table . -- Meristic Variation in Kamloops Trout of British Columbia

Area	Gillrakers			Vertebrae			Pelvic Rays			Scales Lateral Series		
	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean
Bear Lake (" <u>whitehousei</u> ")	7	18-21	19.3	7	63-65	64.0	--	7	--	7	approx.	160*
Fish Lake	32	17-20	18.4	32	62-64	63.0	1	13	18	32	123-148	136.8
Loon Lake	25	17-20	18.7	25	60-64	62.9	--	20	5	25	121-159	136.9
Peachland Res.	5	17-20	18.4	5	62-64	63.2	--	2	3	5	136-160	147.4
Riske Creek	24	18-22	19.6	24	61-65	62.9	--	5	19	24	122-140	132.8
Trout Lake	26	18-22	20.3	26	62-65	63.0	--	3	23	26	133-151	140.5

*Dymond (1932)

Table . -- Numbers of Gillrakers, Vertebrae and Scales in Lateral Series of Ten Groups of Alaskan Rainbow Trout

Area	No.	Gillrakers		Vertebrae		Scales Lateral Series	
		Range	Mean	Range	Mean	Range	Mean
Alagnak River	29	18-21	19.5	61-64	63.3	125-145	133.4
Bedlam Lake	20	18-20	19.4	60-63	61.7	111-135	121.6
Big Kitoi Creek	5	17-19	18.3	63-64	63.2	--	--
Big Kitoi Lake	5	18-20	18.6	63-64	63.8	121-135	128.6
Brooks Lake	16	18-24	20.2	62-64	63.3	120-146	136.9
Brooks River	7	19-22	20.6	63-64	63.1	120-141	130.1
Tebay Lake	22	18-22	20.3	62-65	63.2	123-142	130.9
Tikchik River	11	19-21	19.7	62-64	62.8	119-134	125.5
Whiskey Lake	21	18-21	19.5	62-65	63.0	120-141	128.9
Wood River	30	18-22	19.5	61-64	62.7	116-144	126.8

Table . -- Meristic Data on Rio Grande Cutthroats from
Indian Creek and Rio Seco

Gillrakers			Vertebrae			Basibranchial Teeth			Scales Lateral Series			Pelvic Rays	
No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9
34	18-21	19.5	30	61-63	61.8	28 5	1-6 0	3.2	26	146-186	164.3	4	29

Table . -- Meristic Data on Cutthroat Trout From Alaska and British Columbia

Sample	Gillrakers			Vertebrae			Basibranchial Teeth			Pelvic Rays			Scales--Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean
ALASKA															
Lake Baranof and Parlof Creek	6	18-20	19.2	6	61-62	61.8	6	6-28	17.5	--	6	--	--	---	--
Makaka Pt. Stream, Hawkins Is.	30	16-21	18.0	30	60-63	62.0	30	2-46	11.0	--	22	8	16	136-178	155.4
Lake No. 1, Hawkins Island	19	16-20	17.7	19	62-64	63.1	19	5-44	17.1	--	17	2	10	144-168	155.8
Hassolberg Lake	25	15-21	18.2	25	61-64	62.0	25	3-35	13.9	--	24	1	10	137-160	147.8
Long Lake	8	17-18	17.5	8	61-62	61.4	8	4-40	19.2	--	3	5	8	148-186	167.4
Luck Lake -- Cutthroats	16	16-19	17.8	16	60-63	61.9	16	1-20	12.0	--	16	--	10	142-171	158.7
Luck Lake -- Rainbows or Hybrids	4	18-21	19.3	4	63-64	63.8	4	0	---	--	--	4	4	126-132	129.3
Herman Creek, Behm Canal	11	17-20	18.1	11	60-63	61.2	11	7-14	10.7	--	11	--	11	152-168	156.9
BRITISH COLUMBIA															
Flannigan Slough, Taku River	3	17-20	19.0	3	61	--	3	6-12	9.7	--	3	--	--	---	--
Lake near Stukine River mouth	5	17-21	18.6	5	60-61	60.8	5	12-18	15.7	--	5	--	--	---	--
Quinsam Lake -- Cutthroats	26	16-23	17.9	26	61-63	61.7	26	1-27	12.8	--	26	--	--	---	--
Quinsam L.--Rainbows or Hybrids	8	19-20	19.6	8	62-65	63.5	1 7	11 0	-- --	--	1	7	--	---	--
Middle Quinsam Lake	30	14-20	17.4	30	60-64	62.0	29 1	1-25 0	13.3 --	--	30	--	--	---	--

Table . -- Meristic Data on American Coastal Cutthroat Trout

Sample	Gillrakers			Vertebrae			Basibranchial Teeth			Pelvic Rays			Scales--Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean
CALIFORNIA															
Penn Creek	11	15-18	16.5	12	59-63	60.9	11	1-15	6.6	2	10	--	12	118-135	126.1
OREGON															
Bible Creek	15	17-19	17.9	15	59-63	61.1	15	4-33	15.2	--	15	1	15	148-184	166.5
Gate Creek	17	16-20	18.1	23	60-65	61.8	$\frac{13}{4}$	$\frac{2-17}{0}$	$\frac{5.8}{--}$	--	17	--	12	129-158	142.6
Grassy Lake Stream	30	17-20	18.7	30	59-62	60.4	$\frac{28}{2}$	$\frac{2-18}{0}$	$\frac{8.4}{--}$	--	17	13	30	117-138	126.3
Tillamook Area	13	17-22	18.4	19	61-63	61.6	13	8-22	14.9	--	13	--	13	139-180	154.5
WASHINGTON															
Clearwater Creek	4	18-19	18.3	4	60-63	61.8	$\frac{3}{1}$	$\frac{4-25}{0}$	$\frac{11.8}{--}$	--	4	--	4	139-144	141.8
Lake Crescent--" <u>crescentis</u> "	12	18-21	19.0	10	62-65	63.1	$\frac{11}{2}$	$\frac{3-12}{0}$	7.6	--	6	7	6	150-162	155.2
Lake Sutherland--" <u>jordani</u> "	10	17-19	17.7	9	60-63	61.7	9	15-52	29.2	--	8	2	8	131-158	145.5

Table . --Meristic Data On Cutthroat Trout From Alaska And British Columbia.

Sample	Gillrakers			Vertebrae			Basibranchial Teeth			Pelvic Rays			Scales--Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean
ALASKA															
Lake Baranof and Parlof Creek	6	18-20	19.2	6	61-62	61.8	6	6-28	17.5	--	6	--	--	--	--
Makaka Pt. Stream, Hawkins Is.	30	16-21	18.0	30	60-63	62.0	30	2-46	11.0	--	22	8	16	136-178	155.4
Lake No. 1, Hawkins Island	19	16-20	17.7	19	62-64	63.1	19	5-44	17.1	--	17	2	10	144-168	155.8
Hassolberg Lake	25	15-21	18.2	25	61-64	62.0	25	3-35	13.9	--	24	1	10	137-160	147.8
Long Lake	8	17-18	17.5	8	61-62	61.4	8	4-40	19.2	--	3	5	8	148-186	167.4
Luck Lake.....Cutthroats	16	16-19	17.8	16	60-63	61.9	16	1-20	12.0	--	16	--	10	142-171	158.7
..Rainbows or Hybrids	4	18-21	19.3	4	63-64	63.8	4	0	--	--	--	4	4	126-132	129.3
Herman Creek, Behm Canal	11	17-20	18.1	11	60-63	61.2	11	7-14	10.7	--	11	--	11	152-168	156.9
BRITISH COLUMBIA															
Flannigan Slough, Taku River	3	17-20	19.0	3	61	--	3	6-12	9.7	--	3	--	--	--	--
Lake near mouth of Stukine River	5	17-21	18.6	5	60-61	60.8	5	12-18	15.7	--	5	--	--	--	--
Quinsam Lake.....Cutthroats	26	16-23	17.9	26	61-63	61.7	26	1-27	12.8	--	26	--	--	--	--
Rainbows or Hybrids	8	19-20	19.6	8	62-65	63.5	8	1 with 11 teeth	--	--	1	7	--	--	--
Middle Quinsam Lake	30	14-20	17.4	30	60-64	62.0	30	0-25 1 with no teeth	13.3	--	30	--	--	--	--

Table . Meristic Data On Cutthroat Trout From Alaska And British Columbia.

Sample	Gillrakers			Vertebrae			Basibranchial Teeth			Pelvic Rays			Lateral Series		
	No.	Range	Mean	No.	Range	Mean	No.	Range	Mean	8	9	10	No.	Range	Mean
ALASKA															
Lake Baranof and Parlof Creek	6	18-20	19.2	6	61-62	61.8	6	6-28	17.5	--	6	--	--	--	--
Makaka Pt. Stream, Hawkins Is.	30	16-21	18.0	30	60-63	62.0	30	2-46	11.0	--	22	8	16	136-178	155.4
Lake No. 1, Hawkins Island	19	16-20	17.7	19	62-64	63.1	19	5-44	17.1	--	17	2	10	144-168	155.8
Hassolberg Lake	25	15-21	18.2	25	61-64	62.0	25	3-35	13.9	--	24	1	10	137-160	147.8
Long Lake	8	17-18	17.5	8	61-62	61.4	8	4-40	19.2	--	3	5	8	148-186	167.4
Luck Lake.....Cutthroats	16	16-19	17.8	16	60-63	61.9	16	1-20	12.0	--	16	--	10	142-171	158.7
..Rainbows or Hybrids	4	18-21	19.3	4	63-64	63.8	4	0	--	--	--	4	4	126-132	129.3
Herman Creek, Behm Canal	11	17-20	18.1	11	60-63	61.2	11	7-14	10.7	--	11	--	11	152-168	156.9
BRITISH COLUMBIA															
Flannigan Slough, Taku River	3	17-20	19.0	3	61	--	3	6-12	9.7	--	3	--	--	--	--
Lake near mouth of Stukine River	5	17-21	18.6	5	60-61	60.8	5	12-18	15.7	--	5	--	--	--	--
Quinsam Lake.....Cutthroats	26	16-23	17.9	26	61-63	61.7	26	1-27	12.8	--	26	--	--	--	--
Rainbows or Hybrids	8	19-20	19.6	8	62-65	63.5	8	1 with 11 teeth	--	--	1	7	--	--	--
Middle Quinsam Lake	30	14-20	17.4	30	60-64	62.0	30	0-25	13.3	--	30	--	--	--	--
								1 with no teeth							

Gold N=25 N=21 3 coll 67-68

caeca 29-42 (36)

14-18 (15.6)

153-174 (162)

N. 12¹⁶¹⁻¹⁸⁰
(171)

60-63 (61.4)

60-62 (61.1)

20+25

110+21 w/ teeth

Lower pit ← spots cott-like

Maggill (5)

— N. Kosk (5) —

Snow slide — Nelson (24)

* 1 w/ teeth

58, 66, 71 caeca
17-19 rakers

caeca
53, 56, 63

61-64 (63)

35-40 caeca

15, 16, 19 rakers

31
145

154-170 scales

$\frac{62}{2}$ $\frac{64}{1}$ vert.

18-21 (19.1)

16-18 rakers (17)

38-76 (51.8) caeca

61-63 (62.5)

No teeth

Gr. Burn
caeca
57, 64
33/146

Burney —

HET (5)
62-63 (62.4)
18-20 (19.2)

Lost N (5)
16-22 (18.5)

E. St. Parsnip (15)

62-65 (63.2)

53-79 (63.6)

8-68 caeca (62)
61-64 (62.3)

18-22 (20.1)

40-59 (49.3) caeca

Pot

isolated
Pot Hole } just E. HET ca
Lost R. distal

20 rakers 31/146

67 caeca almost
like L. horton
cut.

Rock (9)

63-65 (63.8)

16-19 (17.8)

36-42 (38)

39/133

X
Clark Crk
North side (4)
61-63 (62.3)
37-47 caeca (41)
19-21 (20)

- Snyder 6 samples
62.5
19-23 21.3
148

32/150

So. Fork Parker Crk. (10)

62-65 (63.6)

19-23 (20.7)

caeca 37-49 (43)

33/149

- Roaring Crk. lowermost Pit. (13)

61-65 (62.5)

17-20 (18.7)

38-51 (45.8)

- send USNM specimen
- Nebraska

- Cavender
epyg Shposhinkova
Taximetric

- Bond
- Malheur
- Catlow etc.
- specimen member

wick no 3
seems advising - com -
Signs - loose leaf notebook

Fri. 11 AM
- T. ro. T.

golden
gilberti
n. C. G. P.

prob. not sufficient characters

member

Holotype S. membernyi ^{USNM} # 578

vert. 65

radius $9/13 \frac{0}{0} = 22$

Branch. $13/13$

D 12

A 12

V 10

scales approx. 35

several counts of calca 58-65

146 (25) adipose

- Schneek
- Apache Trail
- Wyo.

Tom Marshall

- Evans

- Sat-sewing

- C. G. P. - mail
Res. prep.

- get case beer =

corn =

- G. C. part -

- eggs -

- gift -

Nature Propyleum phenoxela -
1955 175: 434

Nytt Magazin for Zoologi

10: 67-123 - 1961 - Nording

all 3 char in some other

Petro } Ed
Horn } H.
D. L. } C. G. P.

Fac. met.

Aug. me

- Sem.

- Bracon classif.

- dit.

7/16

- Debate

- grassh.

Stasut.

- ^{wild} curriculum met.

- m. s. reports

Schub.

Fun - Semmon

Middle.

Wernma.

Peters



Redband

Gilbert & Evermann 1895 Bull. vol. 14 (for 1894)

Little Wood R. near Shoshone - Aug. 5, 1894, Thoburn & Potter

Idaho Falls trout can ascend - S. mykiss common here

American Falls - trout pass over falls in large no. in spring

p. 178 Malade R. (Little Wood) - during dry season - dry for lower 40-50 mi² inaccessible to salmon due to falls near mouth. - During high water - trout can ascend from Snake to upper Little Wood R.

Palouse R. - high falls at mouth prevents salmon

Grande Ronde - "trout" plentiful & Meschum (upper Grande Ronde)

Little Spokane R. Darts Mill - salmon & cutthroat trout abundant

Wallzelle R. joins Col. R. at Wallula, 30 mi. west of Wallzelle

S. mykiss
- Trout examined from: Snake R. at Idaho Falls, Ross R. & Mink Crk., Little Wood R., Potaha R. (Starbuck), Little Spokane R., Darts Mill.

- gairdneri - mykiss - intergrade (Ross R., Mink Crk. - typical) 176-180 scales

Wood R. - 150-163 scales, usually no red cutt mark - some w/ faint, irregular mark

- Umetilla R. near Pendleton, Notch R. at N. Yakima, Potaha R. at Starbuck. 142-163

scales (148) ^{no cutt mark} faint cutt or lacking. Spokane R. at Darts Mill - cutt mark but 125 scales.

Evermann 1897 - Bull. vol. 16 (for 1896)

S. mykiss 1894, 95. Snake R. at upper Salmon Falls, Mann Crk. 10 mi. from Weiser

Little Weiser R. (Indian Valley) Payette R. & Payette L., Big Wood R., Galena, Fish L. near Kelfish L.

- Upper Salmon Falls & Mann Crk. - small scales cutt marks. Payette R. etc. - less spotted, little or no cutt mark.

140-145 scales, small, 1/2 inch spots above & below rosy wash - these certainly ^{are} variety gibber

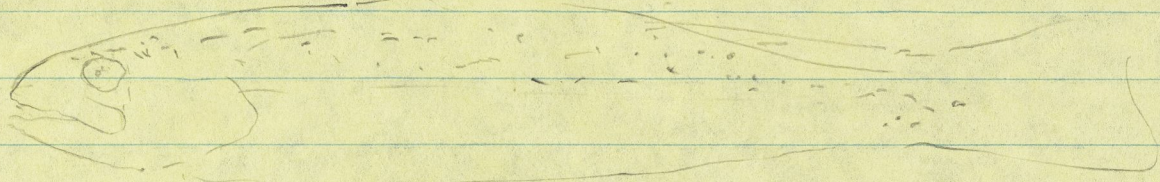
locally known as silver trout. - *Trout very abundant at upper Wood R. near

Galena (made collections) ♀ 14 in. Sept. 14 - back, dark steel color, ^{thickly} covered w/ small, round

spots, cheek, side w/ broad wash rosy-red. spots numerous back dorsal, anal fins, less numerous below lat. line, cutt mark, absent or faint

seem to be
20. gibber

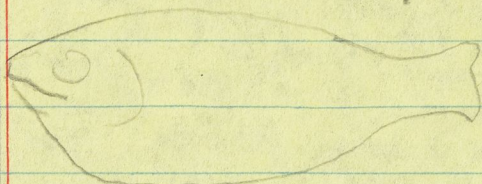
C= Dept. Ichthyology
 Au. S. i.
 Golden Gate
 S. E. - 9418
 S. U. 2023 N=1 Salmo clarki
 Little wood R., Idaho, Shoshone
 Thoburn & Rotten



Small, irregular spots (not round, pronounced)
 - spots on top of head - rainbow or red-banded
 like. - silvery-sheen. rakers $\frac{7+}{12}$ | 3 post. moderately developed.
 Scales 37, 38
 Scales 169, 169
 no teeth
 Vert. 64 pelvic, 2

Snake Crk, NE. slope Mt. Carleton, Idaho, Snyder
 # 4 small - poorly preserved without (basibr. teeth)
 - spots can't be accurately determined
 but looks like west slope or fine spotted
 S, R, -

"Salmo clarki"
 S. U. 2040 - N=2 Idaho - ~~at~~ Wood R.
 Cottonwoods, near Shoshone. H. Kinsey



- aberrant - fused vert.
 can't make out spotting
 but probably identical to
 S. U. 2023 fm. Little Wood R. - small, irregular, profuse
 above l.l. + top of head.

basibr. plate well developed but no teeth

rakers $\frac{7+2}{12}$

$\frac{36}{130-135}$

$\frac{34-35}{130-35}$

$\frac{7}{12/0}$

pelvic
 9, 10

S. gaudnerii
Mosby Ck.

Spotting as in coastal cutts & rainbows
except some have few spot on anal
fin base

- pair marks are present on all specimens
altho not prominent. - head spotting is less
distinct than brook h. rainbows.
- gillrakers attenuate - vomerine teeth numerous

S. g. kamloops
Moon Lk. B-C.

Spotting like Peachland Res., small, irregular shaped spots, mostly above lat. line. gill marks visible on fish up to 11 in. one has first pectoral ray spotted (4 do not) - fin spotting normal. spots on top of head & pre max. tail forked sharply. gillrakers, long, attenuate

S. g. kamloops

Peachland Res. B. C.

These fish (w/ 12 pectoral rays) are unusually colored & spotted. Parr marks, both bars & spots are visible on all 5.

spots are small and ~~are~~ appear ^{mostly} only above lat. line, and more sparse than in ~~the~~ coastal rainbow or cut. - spots

on dorsal, adipose, and tail - other fins immaculate. few spots on top of head, but more seen on pre max.

- gillrakers long & attenuate

a "skatey" rainbow mixed in w/ these trout is readily distinguished.

S. g. bambuops

Fish Lk. B.C. - Differ fm. Peachland Is.
& Moon Lk. w/ larger, ~~sp~~ more profuse spots -
both above and below lat. line. - down to level of
pectoral fin - pass marks on smaller specimens and
only smaller specimens exhibit spotting on head -
larger ones very dark - fins: dorsal, adipose, caudal
spotted - base of pectoral ~~and~~ or first ray sometimes spotted.
one has first pelvic ray spotted.
pelvic, ~~and~~ anal fins tipped w/ white
some ~~has~~ have 15^I anal ray spotted.
gillrakers long.

Notes

- investigate vomer in goldens - may be a good character
- tongue teeth on Yellowstone Lk. $\frac{6}{1}$ squarials
- belly spots on Yellowstone Lk.
- Brooks Lk. rainbow - spots very prominent on top
o side of head down out pre max.

Brooks Lk. - Alaska - Rainbow

spotting of irregular size and forming an ^{almost} reticular-
network on sides down to level of top of pectoral fin.

small round spots on top and sides of head, spot
on dorsal, adipose, and caudal fins, none on pectoral,
pelvis or anal. - spots extend down to or into premax.

gillrakers attenuate

vomerine teeth 2 rows, numerous-

gairdnerii

Brook Lk. 120-146
Kathleen Lk 119-149
Claireborne Cr. 115-134
Ruby Valley 104-139
Beachland Res. 136-160

clarkii

Grassey Lk. Cr.
117-138
Perrin Cr. 108-135
Wahaka Pt.
136-178
S. c. henschel
Blaine Cr. - 127-141
Pine Cr. - 133-158
Pine Val. - 133-171

Stanford

- John get me
Ken R. (2) + Hucks.

shasta, stonei, aquabronita, whitei, roosevelti

- Examine gilberti & rosiei for spots of pectoral,
pelvic & anal fins. -

- Humboldt n^o 26 giltraker not from Stan.

- Hucks, Brachymystax, O. mason

Color, spotting, morphology chart.

Spotting: (A) Size of spots. (B) Shape of spots (C) Distribution

(G) on tip of upper jaw

1. head - jaws
 - eyes
 - maxillary
 - mandibles
2. body
3. fins
4. belly

Color (A) Parr marks (B) Opercle blotch (C) Other (D) background color

Gill rakers - length - long, thin or short stubby.

Labial fold - position it comes to on vomer, general shape.

Teeth - max, pre max, palatine, vomer - any recognizable differences -

Special groups which have meristic and linear distinction.

Rainbows compare 7 whisker ht.

Tabay Lk - look at pyloric coe - low head & fin lengths

Clareborn Ck. Calif.

Peach Lk. Res. B.C. - 12 pelvic rays

Moberly Ck. - Athabasca drainage

Kathline Lk. - Yukon

Bedlam Lk. - lowest vert.

Cutthroats

Date Ck. Ore. - probably hybrids

Patrick Pt. Calif. - low counts

Willow Ck. - Alond Basin

various
lawriei } Peckle Jar Lk -
 Yellowstone
 Game Ck

Pine Ck. Nev

spots on dorsal adipose caudal
none on pectoral, pelvic, anal

med. - med. large size spots
if there is a size and concentration
dif. it is on caudal peduncle.

spots tend to be evenly
distributed on side of body but
none on belly, few specimens
have a few spots on top of head.

opercle blotch prominent

thick caudal peduncle. - long head

gillrakers attenuated

Pine Valley Utah

Fin spotting as in Pine Ck.

- med. large - larger spots (larger
than Pine Ck.) - round, evenly
distributed spots, as in henstawi, but
none on belly or head. - spots
sparser than w/ Pine Ck. specimens
some have concentration of largest
& most numerous spot on caudal
peduncle. - opercle blotch prominent.

roosevelti

3278



acqua bonita ?
2 x 3

S.c. henshawi

5013305



299, 300, 301

72

but variation
in shape of
epimerals.

62, 63, 64

2

whitei

more definitely 3

10901

= shasta



Hucho 3

O. mason

2
^

O. Kisutch

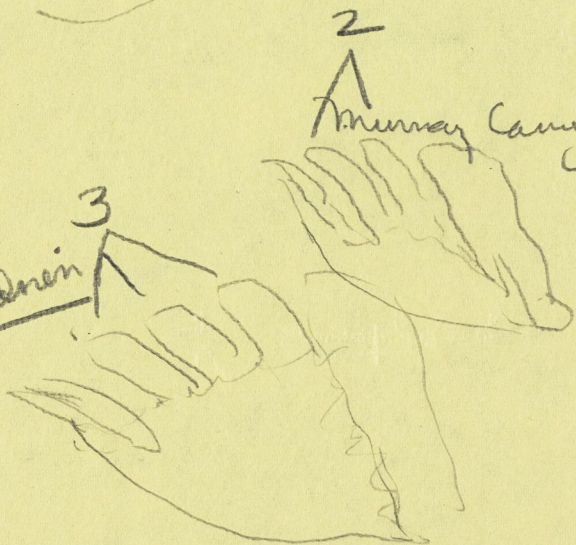
USNM

17085

henshawi

2
^

Gairdneri 3



2
^
Murray Canyon & E. Carson

gilberti



USNM
36881
S.c. utah

3
^

Panguitch Lt. $\frac{3}{M}$ on 25 specimens other too small.

Humboldt humboldtii $\frac{2}{\wedge}$ Beaver R. ^{Utah} (1) $\frac{2}{\wedge}$
some seem to have 3

gilberti = typical rainbow $\frac{3}{\wedge}$

#1556 looks like 2
 $\frac{1}{\wedge}$ - may be fused

S. c. utah - 141701 $\frac{3}{M}$

pleuriticus .2, 3, 4

S. c. crenaticus $\frac{3}{M}$

clarki Stuhler R.

looks like both 2 & 3

S. c. alpestris = 3 Taken 2 & 3
 $\frac{2}{\wedge}$

Wilbur Cr - alwood
 $\frac{2}{\wedge}$

S. alpinus $\frac{2}{\wedge}$

Yellowstone $\frac{3}{M}$

Grassey Id. S. clarkii
Ch. Over

spots of size and shape of typical coastal
cuts. - spots over whole side of body down
to level of ~~adipose~~ pectoral - dorsal, adipose, &
caudal heavily spotted. - spots on dorsal and on
to head - pre max & some anax. spotted, spots
extend down on sides of head - pect., pedu.
& anal fin no spots but spots at base of
pectoral. pedic and anal tipped w/ white

pan marks not prominent.
gillraker med. ^{long} ~~at~~ attenuate

S. C. Clarkii
Makaha Pt. Alaska

- large, deep bodied fish, resemble rainbow
in outline - but head & jaw longer.

- preserved color - orange tint on sides &
abdomen - spotting - heavy with small
irregular shaped spots (atypical for coastal cut. & rainbow)
spots cover side of fish down ^{almost} to level of
pectoral fin. - out on top of head to & including
* premax. but ~~diff~~ head spots are not as
prominent as are those in rainbow such as Brooks Is.

Some have first pectoral ray spotted.

Dorsal, adipose, & caudal ^{fin} heavily spotted
ventral, immaculate

- pectoral & pelvic fins are long and pointed.
gillrakers attenuate.

Yellowstone cutts - Yellowstone Lk.

large, round black spots, almost as in henshawi - - black is more intense than henshawi

spots tend to be larger and more concentrated on caudal region - dorsal, adipose and caudal

heavily spotted. spots are distributed both above and below lateral line, but usually do not go onto head, some have a few spots on cheek and

* some are spotted on belly. one has spots on branchiostegal rays. - no spots on pectoral,

pelvic and anal fins. - shorter, blunter head

& shorter jaws than henshawi and most other

cutthroats

gillrakers

attenuate, tongue teeth form

a square of $\frac{1}{2}$

opercle blotch not pronounced

- Wales

types shasta & stoned

vert.	5	61-64	(62.6)
nakes	12	17-22	20.25
pelv.	12	all 10	
scales	7	139-160	146
	12	28-35	32.1

N. Fk. Pit R. S.U. # 37975

nakes $\frac{N}{6}$ 19-23 (21.3)

scales 138-~~148~~155 (148.0)
31-36 (33.0)

vert. 62-63 62.5

no teeth

Mc Cloud Clairborne Crk.

nakes $\frac{N}{23}$ 16-20 17.5

low transverse rays

scales 115-134 124.6
27-30 28.5

pelvis 9-10 9.6

vert. 60.65 63.6

Sheep have nake 14-18 16.0

8 of 12^y basibranchial teeth $\frac{9/10}{5/7}$

Scales 161-191 (173.3) 33-40 36.1

calca 36-45 (40.5)

Moosehead N=8 no teeth

scales 139-172 (153.0)
31-35 (32.4)

calca 29, 34, 38

Edan $N=7$ 16-18 (17.1)

one of 7 w/ no teeth
159-168 (163.2)
30-32 (31.0)

calca 35-50 (41.9)

at least
2 invasion routes

Klamath trout

Snyder paper
Gilbert -
Evermann -
(Cope)
Jordan
-storer

newberryi

Snyder 175 Klamath steelhead

<u>60</u>	<u>61</u>	<u>62</u>	<u>63</u>	<u>64</u>	<u>65</u>	\bar{x}
7	42	57	50	15	4	62.2

14 56

92

175-1560

3 specimens coll. 1949 Jun. Spencer Crk. (steelhead
hatchery station on Klamath) (S.L. 350, 405, 415 mm)

Vert. 62, 62, (60 not clear) -

akers $\frac{6}{11}$ $\frac{8}{12}$ $\frac{8}{\text{broken}}$

$\frac{17}{20}$

Brondrostegals $\frac{11}{12}$ $\frac{11}{12}$ $\frac{12}{11}$

Scales $\frac{28}{134}$ $\frac{28}{137}$ $\frac{28}{133}$

- "golden, red-banded" Klamath basin samples -

Trout Crk. N=15 V. 62-64 (63.0)

R. 17-21 (18.9)

ceca 41-56 (48.3)

scales 29-33 (30.9)

127-141 (132.5)

Br. 9-12 (11.2)

10-13 (11.9)

Butte Crk.

62-64 (62.8)

17-21 (19.4)

40-54 (46.0)

29-33 (31.4)

135-144 (139.4)

10-12 ($\frac{11.4}{11.8}$)

11-12 ($\frac{11.4}{11.8}$)

newberryi (?)

V. $\frac{65}{65}$, 63, 63, 65

R. 20, 21, 22*, 23

Br. $\frac{12}{12}$, $\frac{12}{12}$, $\frac{13}{13}$, $\frac{13}{14}$

45, 50, 56, 58*, 65

32, 33, 34, 35*

142 146, 146*, 148

Locality	Vertebrae	Gillrakers	Pyloric caeca	Lateral Series Scales	Above 1st. line Scales	Pelvic fin rays	Branchiostegal rays	Basibranchial teeth	Comments
Owyhee River system Chino Crk. Nevada, coll. 1964 - Behnke & Nisbet	N=16 63-66 64.53	N=17 16-20 17.7	N=14 30-46 37.1	N=17 29-35 136-158 148.8	N=17 29-35 31.35	17 9-10 9.7 (65)	10-12 (11.1) 11-13 (11.6)	17 0	① - other sample in Owyhee - Sweet Crk. trib. dark horse - typical hatchery rainbow - 4 fin marks,
Malhoer Basin Silvies R. Stanford Univ. Snyder's 1904 collections near Burns	N=64 64-66 $\bar{x}=65.0$	N=4 20-22 $\bar{x}=21.0$?	N= 64 146-154 150.8	4 29-32 30.3	N=4 9-10 $\bar{x}=9.5$	4 11-12 11.25 11-12 11.50	N=64 0	① P. 13-15 138
Silver R. USNM - 1904 Snyder's coll. Harney Co. above Riley	N=6 64-66 $\bar{x}=64.8$	N=6 21-24 $\bar{x}=22.3$	20px 37, 39, 40	N=6 147-158 $\bar{x}=151.8$	N=6 29-31 (29.7)	6 9-10 9.8	$\frac{11-12}{11-12}$ $\frac{11.7}{11.8}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{4}{12}$ $\frac{1}{12}$	N=6 0	⑤ Snyder wrote scales 156-174
Smythe Crk. coll. 1968	25 63-66 64.66 63.6	20 18-22 20.0 21.2	20 33-43 37.5	10 134-157 139-145 147.9	10 30-35 31.8	20 15-16 9-10 9.95	10-12 10.5 10-12 11.1	20 0	①
CATLOW VALLEY 3 mis. Crk.	10 62-65 63.6	10 20-22 21.2	9 30-46 37.4	10 129-145 138.5	10 28-33 29.7	10 9-10 9.9	11-12 11.4 12-13 12.3	10 0	① Posterior rakers 90% absent and if present only one or two tiny ones. rimmed oclipose
WARNER L. Honey Crk. Snyder's (04) coll.	N=8 61-63 62.3	8 ^{7 or 8} ₂₃ 23-24 23.1 all $\frac{9}{14}$ apt. one 8, 16	- 42, 44, 46	8 140-162 <u>153.5</u>	27-34 30.6 8	8 9-10 9.6	8 L. 10-14 R. 12-13 $\frac{11.75}{12.1}$ R.	N=8 0	few post. rakers Snyder stated scales <u>154-178</u> .
Honey Crk. coll. 1968	19 62-64 62.9	14 ^{3 or 14} ₂₃ 20-23 21.6	15 35-54 45.5	13 126-141 132.7	13 27-31 29.0	15 9-10 9.6	15 10-12 11.1 10-13 11.8	15 0	

Locality	Vertebrae	Gillrakers	Pyloric caeca	Lateral Series Scales	Above lat. line scales	Pelvic fin rays	Branchiostegel rays	Basibranchial teeth	Comments
<u>CHEWAUCAN</u> Chewaucan Crk. - Snyder's 1904 coll. below Paisley	N=6 63-64 x̄ 63.3	N=6 20-23 x̄ 22.3	-	N=6 132-143 x̄ 138.0	6 27-30 28.3	N=6 all 9	R 11-13 12.0 L 12-13 12.2	N=6 1 specimen with teeth eye	P 14-15 A 11 P. Snyder said 147-151 scales
Elder Crk. coll. 1968	28 61-65 (63.2)	20 19-24 (20.4) (21.05)	18 33-46 (39.8)	14 136-154 142.9	14 27-33 30.4	20 9-10 (9.35)	10-12 (11.1) 10-13 (11.7)	2 of 20 w/ 12 teeth	
<u>FORT ROCK</u> Buck Crk. Snyder's, 1904	6 63-65 63.7	N=6 19-22 20.2		6 138-147 141.7	6 28-33 29.8	7 4 3 9-10 8 9.4	R 11 1/2 11.3 L 1 3 11.7	4 of 6 with teeth (2-4 teeth)	Snyder's counts 146-160
Bridge Crk. coll. 1968	24 62-66 64.0	22 19-23 20.6	12 36-53 42.7	10 137-152 143.4	10 29-33 31.3	15 9-10 9.5	15 10-12 11.1 11-13 11.6	1 of 15 2 of 7 heads 3 of 19 small specimens 6 of 41 1-2 teeth	
Buck Crk. coll. 1968	7 63-65 64.0	10 17-21 19.8	10 38-62 47.2	10 133-152 142.2	10 29-35 32.1	10 9-10 9.7	10 10-12 11.1 10-12 11.7	3 of 10 w/ 1-2 teeth	
Williamson R.		18, 22	rotted	125, 133	28, 30	9, 10	11-12 12-12	0	
<u>KLAMATH</u> Holotype <i>S. newberryi</i>	65	22	several counts ranged fr. 58 to 65	146		10		0	
Froot Crk. Ore. coll. 1968	15 62-64 63.0	15 17-21 18.9	15 41-56 48.3	14 127-141 132.5	14 29-33 30.9	15 9-10 9.4	9-12 11.2 15 10-13 11.9	0	
Butte Crk. Hart's Meadow Calif. - 1968	62-64 N=8 62.75	17-21 N=8 19.4	40-54 N=8 46.0	135-144 N=7 139.4	27-33 N=8 31.4	all 10	10-12 11.4 N=8 11-12 11.75	0	

Locality	Vertebrae						Gill rakers								Pyloric caeca		Scales, lat. ser. and above lat. line		Branchio-steral rays		Pelvic fin rays		Resibranch teeth			
	60	61	62	63	64	65	66	15	16	17	18	19	20	21	22	23	24	N	range	\bar{X}	N	range		\bar{X}	N	range
Owyhee R. China Crk. Nev. 1964 remote, isolated tributary			3	5	4	4		1	7	6	2	1					14	37.1	17	148.8	17	17	9.7	0		
	16									17							30-46		136-158	17	10-12	11.1	9-10			
						64.5									17.7				29-35	31.4		11-13	11.6			
Malheur Silvies R. Snyder, 1904 near Burns				1	2	1						2	2				not counted		146-154	4	11-12	11.3	9-10	0		
	4					65.0		4							21.0			4	29-32	30.3		11-12	11.5	9.5		
Silver R. Snyder, 1904 near Riley				2	3	1							1	3	1	1			151.8	6	11-12	11.7	6	9-10	0	
	6					64.8		6							22.3		37, 39, 40		147-158	6	11-12	11.8	9.8			
																			29-31	29.7						
Smythe Crk 1968			2	10	9	4				2	3	10	3	2			20	37.5	10	147.9	20	10-12	10.5	9-10	0	
	25					64.6		20							20.0				134-157	10	10-12	10.5	9-10			
																			30-35	31.8		10-12	11.1	9.95		
CATLOW 3 mi. Crk. 1968			1	3	5	1						2	4	4			9	37.4	10	138.5	10	11-12	11.4	9-10	0	
	10					63.6		10							21.2				129-145	10	12-13	12.3	9.9			
																			28-33	29.7						
WARNER LKS Honey Crk. Snyder, 04		1	4	3											7	1			140-162	8	10-14	11.8	9-10	0		
	8					62.3		8							23.1		42, 44, 46		153, 5	8	11-13	12.1	9.6			
																			27-34	30.6						
Honey Crk. 1968			4	12	3							2	4	5	3		15		132.7	13	10-12	11.1	9-10	0		
	19					62.9		14							21.6				126-141	13	10-13	11.8	9.6			
																			27-31	29.0						