# PROCEEDINGS

OF THE

# BIOLOGICAL SOCIETY OF WASHINGTON

# ON A COLLECTION OF FISHES FROM THE OLYMPIC PENINSULA, TOGETHER WITH NOTES ON OTHER WEST COAST SPECIES.\*

BY BARTON WARREN EVERMANN AND HOMER BARKER LATIMER.

In 1897 the late Mr. Cloudsley Rutter and Mr. Elmer R. Brady, under the direction of the U. S. Commissioner of Fisheries, made considerable collections of the fishes of the Olympic Peninsula, Washington. These collections remained unstudied until recently when the present writers had occasion to go over the entire lot. It was found that the collections contain a number of species of special interest, and as the fish-fauna of that region has until now received practically no study it is thought that the publication of this list will prove of interest.

The waters and localities from which specimens of fishes were obtained by Messrs. Rutter and Brady during these investigations are as follows:

Willapa River near Holcomb, July 30; Humptulips, in small creek, August 20; Quiniault Lake, August 23, 24; Beaver Lake, August 24 and September 9; Prairie Creek and Elk Creek, August 25; Raft River, August 26; Tacoma Creek, August 27; Queets River at Evergreen, August 27; Hurst Creek and at Clearwater, August 29; Hah River and Mill Creek, September 1; Snells, in small creek, September 1; Bogachiel, September 3; Ozette Lake, September 4; Pleasant Lake, September 8; Moss Creek, Prairie Creek and Ilwah River, September 11; Crescent Lake, September 17.

All these are in the Olympic region west of Puget Sound.

<sup>\*</sup> Published by permission of the Commissioner of Fisheries. 34—Proc. Biol. Soc. Wash., Vol. XXIII, 1910.

We take this opportunity to record certain other small collections of West Coast fishes which we have recently examined. They are as follows:

1. A small but interesting collection made in the spring of 1897 in Marin County, Cal. The localities represented are:

Papermill Creek, March 11, 22 and 24; Bear Valley Creek, March 15 and April 7; Olima Creek, April 9; Tomales Bay near Point Reyes, April 28 and May 9, 14; Nicasio and Papermill creeks at junction, April 25, 26; Walker Creek, 5 miles above mouth near Tomales, Cal., May 5 and 18.

2. In 1890 and again in 1891 Dr. Charles H. Townsend, then naturalist on the steamer *Albatross*, while making a study of the shrimp fisheries of San Francisco Bay, obtained and preserved a number of fishes taken in the nets of the Chinese shrimp fishermen. The localities represented are the following:

Mare Island, April 16, 1890; San Pablo Bay, November 8, 1890, and May, 1891; Angel Island, November 7, 1890; San Bruno Point; San Mateo Camp; and South Belmont Oyster Beds.

- 3. A few specimens obtained by the U. S. Biological Survey in British Columbia, at Malaspina Inlet, July 19, 1897; and Rivers Inlet, June, 1904.
- 4. A few specimens collected in 1901 by Prof. T. D. A. Cockerell at San Pedro, Cal.
- 5. A small collection made August 14, 1908, by John Treadwell Nichols at Chinook, Wash.
- 6. A single jar of specimens obtained by the steamer *Albatross* at Barelay Sound, September 27, 1888.

The above statement regarding collectors, dates and localities will enable one to understand readily the brief locality references in connection with each species in the following list.

These collections, embracing a total of 1,391 specimens, have all been deposited in the United States National Museum.

#### ANNOTATED LIST OF SPECIES.

# 1. Entosphenus tridentatus (Gairdner). THREE-TOOTHED LAMPREY.

One specimen from Lake Pleasant, 4 from Bogachiel and 2 from Snells, these 1% to 4% inches long; seven, 5 to 7% inches long, from San Pablo Bay.

## 2. Rhinotriacis henlei Gill.

Six examples, 7 to 13 inches long, of this shark from shrimp nets at San Bruno Point, San Francisco Bay.

### 3. Triakis semifasciatum Girard.

LEOPARD SHARK.

Two specimens,  $7\frac{1}{2}$  and  $7\frac{3}{4}$  inches long, from Tomales Bay.

# 4. Raja inornata Jordan & Gilbert.

Three specimens, 5 to  $5^{1}_{-4}$  inches long, from San Pablo Bay.

# 5. Acipenser transmontanus Richardson.

WESTERN STURGEON.

One specimen from Chinook.

# 6. Ameiurus catus (Linnaus).

CATFISH.

One specimen, 7\( \frac{1}{2} \) inches long, from Mare Island. An introduced species.

#### 7. Catostomus macrocheilus Girard.

COLUMBIA RIVER SUCKER.

Nine specimens,  $1\frac{3}{4}$  to  $5\frac{3}{4}$  inches long, from Lake Pleasant; one,  $15\frac{1}{9}$  inches long, from Willapa River.

# 8. Pogonichthys macrolepidotum (Ayres);

SPLIT-TAIL.

Thirteen specimens,  $2^{1}_{4}$  to  $8^{1}_{4}$  inches long, from Mare Island.

# 9. Ptychocheilus oregonensis (Richardson).

SQUAWFISH.

Eighteen specimens, 23% to 7% inches long, from Lake Pleasant; eight, 14 to 5 inches long, from Ozette Lake.

### 10. Ptychocheilus harfordi Jordan & Gilbert.

One specimen, 914 inches long, from Mare Island.

#### 11. Leuciscus bicolor (Girard).

Nine specimens, 13% to 31% inches long, from Lake Quiniault.

### 12. Rutilus bicolor (Girard).

Twenty specimens from Walker Creek.

# 13. Rutilus symmetricus (Baird & Girard).

Twenty-three specimens,  $2\frac{1}{8}$  to  $4\frac{1}{8}$  inches long, from a deep pond one mile from mouth of Olima Creek, but connected with it; six specimens,  $3\frac{3}{4}$  to  $6\frac{3}{4}$  inches long, caught on hooks at the mouth of Papermill Creek;

ten, 1% to 5 inches long, from Bear Valley Creek, below flood gate; sixteen, 1 to 2 inches long, from Papermill Creek; three specimens, 2½ to 2½ inches, from Lake Quiniault; sixteen, 1% to 2 inches long, from mouth of Bear Valley Creek; twenty-four, 1 to 1% inches long, from Papermill Creek at tide water.

# 14. Rhinichthys cataractae dulcis (Girard).

DACE.

Seventy-eight specimens, 1 to  $2\frac{3}{8}$  inches long, from Tacoma Creek; twenty-three,  $1\frac{1}{8}$  to  $3\frac{1}{8}$  inches long, from Lake Quiniault; two,  $1\frac{5}{8}$  and  $2\frac{5}{8}$  inches long, from Queets River; ten, 2 to  $2\frac{1}{8}$  inches long, from Clearwater; eleven,  $\frac{7}{8}$  to  $1\frac{1}{4}$  inches long, from Willapa River.

# 15. Clupea pallasii Cuvier & Valenciennes. CALIFORNIA HERRING.

One specimen, 6½ inches long, from San Pablo Bay; one, 2¾ inches

long, from Angel Island; one,  $2^{7}_{8}$  inches long, from South Belmont Oyster Beds; one,  $7^{1}_{4}$  inches long, from San Mateo Camp.

# 16. Alosa sapidissima (Wilson).

COMMON SHAD.

One specimen,  $5\frac{3}{4}$  inches long, from Mare Island. An introduced species.

# 17. Engraulis mordax Girard.

CALIFORNIA ANCHOVY.

Five specimens,  $2\frac{1}{2}$  to  $2\frac{3}{4}$  inches long, from Tomales Bay, between Hamilton landing and Inverness; five,  $3\frac{1}{4}$  to  $3\frac{3}{4}$  inches long, from San Pablo Bay; one,  $3\frac{3}{3}$  inches long, from South Belmont Oyster Beds; three, 3 to  $3\frac{1}{4}$  inches long, from San Mateo Camp.

# 18. Coregonus williamsoni Girard.

WILLIAMSON'S WHITEFISH.

Five specimens from Hah River and four from Quiniault River above lake,  $2\frac{1}{2}$  to  $3\frac{7}{8}$  inches in length; and eighteen examples,  $2\frac{5}{8}$  to 6 inches long, from Queets River.

Gillrakers 9+12 to 14; scales, 9-78 to 84-8; D. 14; A. 12.

# 19. Oncorhynchus tschawytscha (Walbaum).

CHINOOK SALMON.

Eight specimens,  $1^4_4$  to 2 inches in length, from a deep pond one mile from the mouth of Olima Creek, but connected with it; one from junction of Nicasio and Papermill creeks,  $4^4_4$  inches long; nineteen examples,  $2^5_8$  to  $4^4_4$  inches long, from Quiniault River above the lake; eight from Lake Quiniault,  $2^4_4$  to  $2^7_8$  inches long; ten from Queets River,  $3^4_2$  to  $4^4_4$  inches long; one example,  $4^4_4$  inches long, from Wills Creek; six specimens, 3 to  $3^4_2$  inches long, from Clearwater; and two,  $1^3_8$  and  $1^4_2$  inches long, from Bear Valley Creek.

### 20. Oncorhynchus kisutch (Walbaum).

SILVER SALMON.

Two specimens, 3½ and 4 inches long, from Hurst Creek; thirty-three specimens, 1½ to 3¼ inches long, from Moss Creek; eight from Lake Pleasant, 2¾ to 4 inches long; five, 2¼ to 3¼ inches long, from Wills Creek; five, 2½ to 3½ inches long, from Raft River; two, 3¼ and 3½ inches long, from Bogachiel; thirteen specimens, 2 to 4 inches long, from Tacoma Creek; nine specimens, 2½ to 3¼ inches long, from Ilwah River; eleven specimens, 2 to 3¼ inches long, from Prairie Creek; nine-teen specimens, 4½ to 3 inches long, from a creek tributary to Humptulips Creek, near Humptulips; four specimens, 2 to 2½ inches long, from Willapa River; three specimens, 2½ to 4½ inches long, from Elk Creek; and three, 2½ inches long, from Ozette Lake.

### 21. Oncorhynchus nerka (Walbaum).

BLUEBACK SALMON.

Fifteen specimens, 1 to 14 inches long, from Rivers Inlet.

### 22. Salmo mykiss Walbaum.

CUTTHROAT TROUT.

One specimen, 7½ inches long, from Malaspina Inlet, at Lund.

## 23. Salmo gairdneri Richardson.

STEELHEAD.

Eight specimens,  $1\frac{1}{8}$  to  $5\frac{1}{2}$  inches long, from junction of Nicasio and Papermill creeks; sixteen specimens,  $1\frac{7}{8}$  to  $8\frac{1}{4}$  inches long, from Beaver Lake; eight specimens,  $1\frac{3}{4}$  to  $4\frac{1}{8}$  inches long, from Quiniault River above lake; four, 2 to  $2\frac{1}{2}$  inches long, from Hurst Creek; four, 4 to  $7\frac{1}{2}$  inches long, from a creek tributary to Lake Quiniault; three, 2 to  $5\frac{1}{2}$  inches long, from Queets River; three,  $1\frac{7}{8}$  to  $3\frac{3}{8}$  inches long, from Clearwater; seven,  $1\frac{7}{8}$  to  $2\frac{1}{2}$  inches long, from a creek tributary to Humptulips Creek, near Humptulips; and nineteen specimens,  $1\frac{3}{8}$  to  $2\frac{1}{4}$  inches long, from Willapa River.

#### 24. Salmo irideus Gibbons.

RAINBOW TROUT.

One specimen,  $5\frac{1}{2}$  inches long, from Bear Valley Creek, below flood gate; one specimen from Chinook; two,  $7\frac{1}{2}$  and 8 inches long, from Lake Crescent; one,  $4\frac{1}{4}$  inches long, from Hali River; twenty-seven specimens,  $1\frac{5}{8}$  to  $4\frac{1}{4}$  inches long, from Moss Creek; fourteen specimens,  $1\frac{7}{8}$  to  $6\frac{1}{4}$  inches long, from Wills Creek; four,  $1\frac{3}{4}$  to  $4\frac{1}{4}$  inches long, from Raft River; thirteen specimens,  $1\frac{1}{2}$  to  $2\frac{5}{8}$  inches long, from Tacoma Creek; four,  $1\frac{3}{4}$  to  $2\frac{1}{8}$  inches long, from Bogachiel; five,  $1\frac{3}{4}$  to 4 inches long, from Ilwah River; and two, 2 inches long, from Lake Pleasant.

#### 25. Osmerus thaleichthys Ayres.

Ten specimens, 2 to 4% inches long, from San Pablo Bay; one, 23/4

inches long, from San Mateo Camp; and two,  $2^{7}{}_{8}$  and 3 inches long, from Mare Island.

### 26. Hypomesus pretiosus (Girard).

SURF SMELT.

One specimen, 3 inches long, from Tomales Bay near the railroad long trestle, 3 miles from Point Reyes Station.

# 27. Gasterosteus williamsoni microcephalus (Girard).

CALIFORNIA STICKLEBACK.

Three specimens, 1% to 1¾ inches long, from Papermill Creek; two specimens, 178 and  $2^{1}_{4}$  inches long, from Papermill Creek one-half mile below White House; one, 1¾ inches long, from South Belmont Oyster Beds; thirty,  $7_{3}$  to  $25_{6}$  inches long, from a deep pond one mile from the mouth of Olima Creek; sixteen,  $1\frac{1}{2}$  to  $2\frac{1}{6}$  inches long, from junction of Nicasio and Papermill creeks; ten, from Walker Creek; twenty-five, 1 to  $2^{3}_{4}$  inches long, from Lake Quiniault; nine,  $1\frac{1}{2}$  to  $2^{1}_{4}$  inches long, from Lake Pleasant; one,  $1\frac{7}{8}$  inches long, from Elk Creek; four,  $1\frac{1}{2}$  to  $1^{3}_{4}$  inches long, from Ozette Lake; three,  $1\frac{5}{8}$  to  $2\frac{1}{8}$  inches long, from mouth of Bear Valley Creek, and one,  $2\frac{1}{8}$  inches long, from Papermill Creek at tide water.

### 28. Siphostoma californiensis (Storer).

CALIFORNIA PIPEFISII.

Fifteen specimens, 4 to 8½ inches long, from San Pablo Bay.

# 29. Siphostoma griseolineatum (Ayres).

Three specimens, 734 to 9 inches long, from Tomales Bay, at railroad "long fill," 3 miles from Point Reyes Station; three, 5 to 8½ inches long, from Tomales Bay, between Hamilton landing and Inverness; and eight, 4½ to 6½ inches long, from Tomales Bay near railroad long trestle 3 miles from Point Reyes Station.

# 30. Atherinopsis californiensis Girard.

CALIFORNIA SMELT.

Eleven specimens,  $2\frac{5}{8}$  to  $4\frac{1}{4}$  inches long, from Tomales Bay near rail-road long trestle, 3 miles from Point Reyes Station.

# 31. Atherinops affinis (Ayres).

24

One specimen,  $4\frac{5}{8}$  inches long, from San Pedro; seven specimens,  $2\frac{3}{4}$  to  $6\frac{1}{2}$  inches long, from Angel Island; twenty specimens,  $4\frac{3}{8}$  to  $5\frac{1}{4}$  inches long, from Sonth Belmont Oyster Beds; and one,  $4\frac{3}{4}$  inches long, from Hamilton landing tower, Papermill Creek.

# 32. Atherinops regis Jenkins and Evermann.

Eleven specimens, 1 to  $1\frac{1}{8}$  inches long, from Tomales Bay,  $\frac{1}{4}$  mile below the "long fill."

# 33. Archoplites interruptus (Girard).

SACRAMENTO PERCH.

One specimen, 5% inches long, from Mare Island.

# 34. Roccus lineatus (Bloch).

STRIPED BASS.

Three specimens,  $4\frac{3}{4}$  to  $5\frac{1}{2}$  inches long, from Tomales Bay, at railroad "long fill," 3 miles from Point Reyes Station; and one specimen,  $5\frac{1}{4}$  inches long, from Tomales Bay, near railroad long trestle, 3 miles from Point Reyes Station.

An introduced species.

# 35. Paralabrax clathratus (Girard).

One specimen, 11% inches long, from San Pedro.

# 36. Genyonemus lineatus (Ayres).

Three specimens, 314 to 6 inches long, from San Pablo Bay.

# 37. Cymatogaster aggregatus Gibbons.

VIVIPAROUS PERCII.

Four specimens,  $4\frac{1}{2}$  to  $5\frac{1}{2}$  inches long, from Tomales Bay, between Hamilton landing and Inverness; six specimens,  $2\frac{7}{8}$  to  $4\frac{5}{8}$  inches long, from San Pedro; five,  $3\frac{1}{4}$  to 4 inches long from San Pablo Bay; nine,  $2\frac{1}{8}$  to  $4\frac{5}{8}$  inches long, from South Belmont Oyster Beds; and three,  $2\frac{1}{8}$  to  $3\frac{1}{8}$  inches long, from San Mateo Camp.

# 38. Damalichthys argyrosomus (Girard).

VIVIPAROUS WHITE PERCH.

One specimen, 4½ inches long, from San Pedro.

# 39. Hypsypops rubicundus (Girard),

GARIBALDI.

One specimen, 4 inches long, from San Pedro.

# 40. Sebastodes melanops (Girard).

Six specimens, 3¼ to 8 inches long, from Barclay Sound.

# 41. Sebastodes ruberrimus Cramer.

RED ROCKFISH.

Four specimens,  $2\frac{3}{4}$  to  $6\frac{3}{4}$  inches long, from San Pablo Bay.

# 42. Scorpæna histrio Jenyns.

One specimen, 4 inches long, from San Pedro.

# 43. Ophiodon elongatus Girard.

CULTUS COD.

One specimen from Chinook.

# 44. Cottus asper Richardson.

PRICKLEY BULLHEAD OR SCULPIN.

Four specimens, 3½ to 5 inches long, from Bear Valley Creek below flood gate; seven, 3¾ to 7 inches long, from mouth of Papermill Creek; eleven specimens from Walker Creek; two, 2½ and 4 inches long, from Papermill Creek, ½ mile below White House; two specimens, 2¾ and 3¾ inches long, from South Belmont Oyster Beds; three specimens, 3¾ to 5¾ inches long, from Mare Island; ten, 1¾ to 6 inches long, from Lake Quiniault; one, 2 inches long, from Hurst Creek; twenty-six specimens, 1¾ to 6½ inches long, from Quiniault River, above lake; twenty specimens, 1¾ to 6½ inches long, from Quiniault River, above lake; twenty specimens, 1¾ to 6½ inches long, from Beaver Lake; twelve, 1½ to 2½ inches long, from Wills Creek; two, 2½ to 2¾ inches long, from Raft River; one, 2¼ inches long, from Prairie Creek; one, 2 inches long, from a creek tributary to Humptulips, near Humptulips; four, 2½ to 4½ inches long, from Ozette Lake; one, 1¼ inches long, from branch entering east fork of Humptulips River; and eight, 1¾ to 2¾ inches long, from Tacoma Creek.

## 45. Cottus gulosus (Girard).

Thirty-two specimens, 1% to 3% inches long, from junction of Nicasio and Papermill creeks; one, 4 inches long, from Hurst Creek; twelve, 1% to 2% inches long, from Quiniault River, above lake; ten, from Hah River, 3 to 4 inches long; eleven, 1% to 3% inches long, from Moss Creek; tive, 2% to 3 inches long, from Wills Creek; two, 2% to 3 inches long, from Bogachiel; three, 2% to 3% inches long, from Queets River; four, 2½ to 3½ inches long, from Hwah River; two, 3 inches long, from Prairie Creek; one, 2% inches long, from Clearwater; nineteen, 7% to 3 inches long, from Willapa River; fifteen, 2 to 3½ inches long, from Elk Creek; and one, 3¼ inches long, from Tacoma Creek.

#### 46. Leptocottus armatus (firard.

Twenty-nine specimens,  $1^{4}_{4}$  to  $2\frac{1}{2}$  inches long, from Tomales Bay;  $\sin 3\frac{1}{2}$  to  $5\frac{1}{2}$  inches long, from Point San Bruno; three,  $4\frac{5}{8}$  to  $5\frac{1}{2}$  inches long, from San Pablo Bay; two,  $5\frac{5}{8}$  and 6 inches long, from South Belmont Oyster Beds; one,  $4\frac{1}{2}$  inches long, from San Mateo Camp; fifty-seven,  $1\frac{1}{2}$  to  $2\frac{1}{8}$  inches long, from Hamilton landing tower, Papermill Creek.

### 47. Hypnus gilberti (Eigenmann and Eigenmann).

Thirty specimens, 1½ to 2¾ inches long, from Tomales Bay; three from Walker Creek, and one from Papermill Creek.

# 48. Liparis pulchellus Ayres.

Fifteen specimens, 24 to 534 inches long, from San Pablo Bay.

# 49. Typhlogobius californiensis Steindachner.

One specimen, 25% inches long, from San Pedro.

### 50. Porichthys notatus Girard.

Thirteen specimens, 25% to 3½ inches long, from San Pablo Bay; two specimens, 7½ and 8 inches long, from Point San Bruno.

#### 51. Heterostichus rostratus Girard.

Two specimens, 6% and 7½ inches long, from San Pedro.

# 52. Gibbonsia elegans (Cooper).

Three specimens, 3½ to 5 inches long, from San Pedro.

### 53. Pholis ornatus (Girard).

Eight specimens, 31/4 to 41/2 inches long, from San Pablo Bay.

### 54. Arbaciosa rhessodon (Rosa Smith).

One specimen, 13/4 inches long, from San Pedro.

# 55. Merluccius productus (Ayres).

One specimen from Chinook.

# 56. Microgadus proximus (Girard).

CALIFORNIA TOMCOD.

Four specimens, 5 to 7 inches long, from San Pablo Bay.

# 57. Psettichthys melanostictus Girard.

One specimen, 6¾ inches long, from Point San Pedro.

# 58. Hypsopsetta guttulata (Girard).

DIAMOND FLOUNDER.

One specimen, 47% inches long, from San Pedro, Cal.

# 59. Parophrys vetulus Girard.

Three specimens, 5 to 6<sup>1</sup><sub>4</sub> inches long, from Point San Pedro; one specimen, 3<sup>7</sup><sub>8</sub> inches long, from South Belmont Oyster Beds; three specimens, 4 to 5<sup>5</sup><sub>8</sub> inches long, from San Mateo Camp.

# 60. Platichthys stellatus Pallas.

CALIFORNIA FLOUNDER.

Four specimens,  $1\frac{5}{8}$  to  $1\frac{7}{8}$  inches long, from Tomales Bay; two specimens,  $5\frac{1}{8}$  and  $6\frac{1}{8}$  inches long, from Point San Pedro; and one,  $5\frac{3}{4}$  inches long, from South Belmont Oyster Beds.