

## Synopsis of the distribution of Alaskan fishes—Continued.

	Atlantic.	Arctic.	Pacific south of Bering Strait.	Puget Sound.	San Francisco.
90. <i>Coregonus Merckii</i> var. ....		+	+		
91. <i>Coregonus clupeiformis</i> .....		+	+		
92. <i>Coregonus Kennicottii</i> .....		+	+		
93. <i>Coregonus quadrilateralis</i> .....		+	+		
94. <i>Thymallus signifer</i> .....		+	+		
95. <i>Salvelinus malma</i> .....		+	+	+	
96. <i>Salmo purpuratus</i> .....			+		+
97. <i>Salmo Gairdneri</i> .....			+	+	+
98. <i>Salmo irideus</i> .....			+	+	+
99. <i>Oncorhynchus chouicha</i> .....			+	+	+
100. <i>Oncorhynchus keta</i> .....			+	+	+
101. <i>Oncorhynchus nerka</i> .....			+	+	+
102. <i>Oncorhynchus kisutch</i> .....			+	+	+
103. <i>Oncorhynchus gorbuscha</i> .....		+	+	+	+
104. <i>Alpcidosaurus ferax</i> .....	+		+		
105. <i>Alpcidosaurus borealis</i> .....			+	+	
106. <i>Clupea mirabilis</i> .....			+	+	+
107. <i>Spratelloides bryoporus</i> .....			+		
108. <i>Catostomus longirostris</i> .....			+		
109. <i>Ptilichthys Goodii</i> .....			+		
110. <i>Acipenser medirostris</i> .....			+		+
111. <i>Chimæra Colliet</i> .....			+	+	+
112. <i>Raja binoculata</i> .....			+	+	+
113. <i>Raja parmifera</i> .....			+		
114. <i>Raja battis Pallas</i> .....			+		
115. <i>Squalus acanthias</i> .....	+		+	+	+
116. <i>Ammætes aureus</i> .....			+		
52 (App.). <i>Icelus hamatus</i> .....	+	+	+		
95 (App.). <i>Somniosus microcephalus</i> .....	+	+	+	+	

## METHODS OF MAKING AND PRESERVING PLASTER CASTS.

By ANTHONY PIRZ.

LONG ISLAND CITY, N. Y.,

October 28, 1881.

DEAR SIR: In using the method of preserving plaster casts with baryta water and soap as given some time ago, it happens that larger pieces remain damp a long time (years) and yellow iron spots readily appear on the plaster. V. Dechend, in Bonn, recommends brushing the casts with a hot saturated solution of borax twice, and larger pieces five to six times. Then apply twice a saturated and hot solution of chloride of baryta, and finally a hot solution of soap; the superfluous soap solution is to be washed off with hot water, and lastly with cold water. The whole treatment occupies but a few hours.

W. Reisig, in Darmstad, recommends covering the plaster casts with a solution of India rubber in benzole, or petroleum ether, or bisulphide of carbon. The casts so treated can be washed.

R. Jacobsen's plan to make plaster casts stand the washing is: to saturate the casts hot with a solution of a most neutral soap from soda lye and stearic acid in 10 parts of boiling water.

I. W. Platonoff, in Moscow, prepares a mass for casts as follows: take 50 parts glue, 35 parts wax, and 15 parts glycerine, with 30 per

cent. zinc oxide. It becomes as hard as horn. A softer mass consists of 50 parts glue, 25 parts wax, and 25 parts glycerine. To prepare the mass, dissolve the glue in warm glycerine, then add the wax, and lastly the metal oxide.

R. Martin, in Sonneberg, mixes 20 to 100 parts zinc oxide with 5 to 10 parts tartaric acid or calcined alum and 100 parts starch (finely powdered), and the required quantity of water to form the casts. If these articles are at a temperature below 15° Celsius and are poured in warm molds, the cast becomes brittle, but is at once made plastic by being placed in a water-bath of 50°. Then give the casts a surface which permits washing by collodion, which is mixed with a solution of wax in ether.

My method of preparing caustic baryta is: Take carbonate baryta, pulverize and mix with charcoal, put in a crucible well luted and expose in a white fire. Then leach with boiled water and let crystallize. As the caustic baryta so greedily absorbs the carbonic acid from the air, I give this simple cheap method, so that your department can often make the caustic baryta new, when the old has turned into carbonate baryta.

I have written these various methods and you can select what pleases you.

I shall be under great obligations to you, if you will send me the survey and publication when ready.

I remain, dear sir, yours very truly,

ANTHONY PIRZ.

Hon. SPENCER F. BAIRD,

*Secretary Smithsonian Institution, Washington, D. C.*

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**LIST OF FISHES COLLECTED BY LIEUT. HENRY E. NICHOLS, U. S. N., IN THE GULF OF CALIFORNIA AND ON THE WEST COAST OF LOWER CALIFORNIA, WITH DESCRIPTIONS OF FOUR NEW SPECIES.**

**By DAVID S. JORDAN and CHARLES H. GILBERT.**

The specimens of fishes collected by Lieut. Henry E. Nichols, commandant of the United States Coast and Geodetic Survey Steamer Hassler, in his voyage along the coast of Mexico and Central America, have been already noticed by us on page 225 of the present volume of the Proceedings of the United States National Museum. On the northward voyage of the Hassler (January-March, 1881), Lieutenant Nichols made another collection, also of much importance. A list of the species obtained, with their numbers as recorded in the register of the museum, is given below.

It will be noticed that all the species obtained from the west coast of Lower California belong to the Californian fauna, while nearly all of those obtained within the Gulf are members of the tropical fauna of the west coast of Mexico. It is a fact worthy of note that very few of the