

tops of the hills and ridges and as invariably flying as near to the top of the next as their gradually descending flight will carry them. Before the middle of August, the migration is in full swing, and flocks are seen each evening, passing over Sparta. Frequently they alight in the streets and on the house-tops. I recall with a smile the memory of a flock of a dozen or more which lit one evening in front of the hotel. For a time pistol bullets and bird shot made an accident policy in some safe company a thing to be desired, but strange to relate none of the regular residents of the town were injured. The same may be said of most of the grouse, though one, in the confusion, ran into the livery stable and took refuge in a stall, where it was killed with a stick.

Stragglng flocks from south of Powder River prolong the fall migration until near the first of October, after which none are seen below the high elevations north of Eagle Creek.



AN ORNITHOLOGICAL VISIT TO LOS CORONADOS ISLANDS, LOWER CALIFORNIA.

BY J. GRINNELL AND F. S. DAGGETT.

ITINERARY.

TWENTY miles due south of Point Loma, near San Diego, California, and half that distance from the Lower California coast, in Mexican waters, is a group of small islands known as Los Coronados Islands. The group consists of four principal islands with smaller outlying rocks, some of which are only completely separated from the main islands at high tide. The largest, or South Island, is a huge ridge some two miles long and of varying width. The sides are precipitous and impossible to scale except at the few favorable points. The backbone presents an irregular skyline like the back of a dromedary. The southern extremity, about six hundred feet high, ends in a bold promontory. At the north the ridge ends in detached rocks. A cove on the east side, about

one third distant from the north end, affords shelter with good anchorage for small craft, and at present is the landing place of a launch which makes a trip to the island from San Diego whenever five or more persons wish to enjoy the fishing, which in these little frequented waters is said to be unexcelled.

About a mile north of South Island appears a jagged point of land, little more than a great irregular rock, and scarcely a fifth of a mile in extent. Lying between these two, though rather out of line to the westward and nearest the latter, is another somewhat larger mass of rock. Both of these together are known as Middle Islands.

Away to the north some four miles, and most inaccessible of all, lies the fourth island, which completes the group and is called North Island. It is almost a duplicate of South Island, if anything, more rugged, but not so large. Red sandstone crops out in places, with here and there small caves and overhanging shelves, a feature evidently attractive to many seabirds. An entire absence of water on any of the islands during the long dry season prevents the existence of goats, foxes and other land mammals usually present on the larger islands off our southern coast. North Island, however, is literally overrun with mice. These and the land birds must be able to do without water unless they can drink the salt sea water.

On August 6, 1902, we availed ourselves of an opportunity to visit the Coronados Islands in the launch rather than trust to the uncertain moments of sailing craft, heretofore the only means of reaching the islands. A few miles out from the pier, at Coronado Beach, opposite San Diego, whence we embarked, we began to meet with birds, singly and in small companies. Cormorants, gulls and pelicans scattered before the sharp puff of the launch, while several Forster Terns seemed to be attracted for a minute, eyeing us curiously before flying off. As we approached South Island, bird life made itself more apparent, the surface of the water being dotted with cormorants and pelicans, many of them being young-of-the-year. Heermann gulls in immature plumage, recent arrivals from their breeding grounds far to the south, kept in constant view. Great patches of white on the rocky headlands and outlying rocks indicated favorite roosting places.

Immediately upon our arrival at South Island we struck out in the skiff, towed over for this purpose, to visit the easternmost of the two Middle Islands which looked particularly favorable. We rowed out of the cove and coasted along the rocky shore, a favorite place for turnstones and oystercatchers, past the detached ledges at the north and where pelicans and cormorants roosted to the water's edge, and finally headed directly across the intervening channel, swerving now and then to avoid masses of kelp. As we neared our objective point several oystercatchers came flying out to meet us, with their loud cries, and in one of these we recognized *Hematopus frazari*, a species neither of us had ever before seen. Making a landing even in calm weather is attended by a feeling of uncertainty, for one has to select a shelf of rock where the water deepens at once, so that the boat will not be thrown down hard against submerged pinnacles by the receding swells. One has to swing the boat in just right on the top of a wave and leap to the exposed rock at the proper moment. We managed to make a dry landing, and get our boat safely hauled up on a flat rock. Six hours later the tide had fallen, and we experienced much difficulty in getting the skiff back to the water uninjured. But such little experiences, if not too serious, lend continued interest to a short vacation trip like ours. This small island proved of unexpected interest, for here we found an accessible breeding colony of petrels. The afternoon was entirely occupied in digging out and taking care of these birds, their young and eggs. One of us made the circuit of the island, meeting with oystercatchers, turnstones, and tattlers on the partly exposed reefs, their feeding grounds. We started back across the channel at dusk. Flying-fish, startled by the oars, darted past us with wonderful velocity, often passing uncomfortably near. Cormorants and pelicans left the rocks as we glided by, and our entrance to the cove was heralded by the weird cry of some disturbed gull.

The next morning, August 7, we made an early start for North Island, this time leaving both Middle Islands well to the left. Cutting through the belt of kelp, which completely girdles North Island, we made a landing at about the center of the east side. Here a short inlet leads to an amphitheatre-like slope which rises steeply to the ridge several hundred feet above. The unusually

rugged nature of this island makes it the favored one of the group for the larger seabirds, thousands of which annually nest here. We spent the forenoon in climbing about the rookeries and examining the nesting sites, most of which were by this time abandoned. Our visit was much too late, for most of the young had left. This locality would furnish many an interesting object for the bird photographer during April and May. At noon we returned to the cove at North Island, where the launch met us, and in the evening of the same day we were back at San Diego with many hours of tedious bird-skinning to look forward to.

The following is a more detailed account of all the birds we found at Los Coronados Islands.

NOTES ON SPECIES.

1. *Ptychoramphus aleuticus*. CASSIN AUKLET.—Large flats of soft ground near the top of North Island were percolated with burrows, larger than the normal ones of petrels. Many were dug into but proved empty save for fragments of white egg-shells and in one case a dead young Cassin Auklet. Large numbers of this species evidently breed here earlier in the year.

2. *Larus occidentalis*. WESTERN GULL.—This species was numerous about all the islands. At North Island clouds of fully fledged young and adults kept circling about overhead during our stay there. A few young still unable to fly were met with toward the south end of this island. These were possessed of remarkable agility in scrambling among the rocks into places of concealment.

3. *Larus heermanni*. HEERMANN GULL.—Many gulls of this species were congregated over the kelp beds among the islands. All seen were in the dark-headed, immature plumage, not a single adult being observed. These were all probably northward migrants from some winter breeding ground far to the southward.

4. *Oceanodroma melania*. BLACK PETREL.—This species was breeding sparingly on Middle and North Islands in company with the Socorro Petrel. We obtained but four specimens, each with an egg. The four eggs were white, though more or less nest-soiled, and unspotted. They measured, in inches, 1.50×1.04 , 1.44×1.03 , 1.37×1.08 , and 1.52×1.02 , or, in millimeters, 38×26.7 , 36.7×26.4 , 35×27.5 , and 38.6×26 . Three of these eggs were on the point of hatching, the other being infertile. The nesting burrows of the Black Petrel seemed to us indistinguishable from those of the Socorro Petrel described beyond. Bonaparte's *Procellaria melania* (Compte Rendu, XXXVIII, April 1854, p. 662) was described

without any more definite locality than "California" being indicated; but as many of Delattre's birds are stated to have come from San Diego, it seems probable that the type of *O. melania* was from this vicinity.

5. *Oceanodroma socorroensis*. SOCORRO PETREL. — The Socorro Petrel was found breeding commonly on both North and Middle Islands, but on the latter they were most accessible, and here on the afternoon of August 6, we secured by continuous hard work twenty-four adults, with many young and eggs. This island presents two jagged peaks about a hundred feet high, with a sag between the two. To one side of this saddle is a basin perhaps two hundred feet across unevenly edged with ragged ledges. The bottom of the basin farthest from the saddle has been undermined by a subterranean channel connecting with the surf on the outside of the wall. Here one can look down thirty feet or more and see the water surging back and forth with the swell. The rest of the basin sloping up to the saddle is covered by disintegrated rock from the surrounding walls, and supports a scanty growth of dwarfed 'buck-thorn' bushes. Where this bush is thickest a few inches of peaty soil has accumulated and this we found to be a favorite burrowing place for the petrels. Other parts of the island were also occupied, but in those places the burrows usually ended underneath or between heavy fragments of rock and so were mostly impossible to reach. We were first made aware of the presence of the colony by the strong and characteristic odor of petrel oil, for of course not a bird is to be seen above ground during daylight. Following the scent we soon found the openings, generally more or less hidden by weeds or stones. A cursory survey showed that the basin was honey-combed with burrows. In the loose talus of the slopes they extended directly down into the ground, turning aside here and there to avoid pieces of rock, and ending, where further excavation had become impossible, in a cavity about twice the diameter of the main burrow. Those in the more level ground were often entirely concealed by wide spreading bushes which had to be cut away before the entrance could be reached. Otherwise these latter were easy of access, for the peaty, fibrous nature of the soil rendered shallow burrows possible, and such were easily uncovered by sliding the hand in and lifting up the top soil. The terminal chambers were larger here than in the burrows among the rock fragments. Often two burrows crossed or united, but always the occupants were in separate terminal cavities. The shortest burrow did not exceed twelve inches in length, the first lifting up of the top disclosing a Socorro Petrel and egg. The longest observed was in stoney ground, and zigzagged about so that in all its windings it extended fully six feet. The nest cavities sometimes showed a sparse flooring of fine twigs and grass, but just as often they were altogether bare of any lining. Most of the nests contained downy young, from newly hatched ones to individuals in which the wing and tail feathers were more than half grown. The juvenals were uniformly smoke gray in color not obviously different from corresponding ages of the Leach Petrel. Perhaps some of these belonged to

the Black Petrel, for an adult was never found in a burrow with a young bird more than a day or two old. But in some sixteen of the burrows there was an egg, in which case one of the parent birds was brooding, either male or female, indifferently. The Socorro Petrels' eggs were white, and either immaculate, or showing a faint ring of lavender and cinnamon dots around the larger end. Nine examples average, in inches, 1.20×0.90 , or, in millimeters, 30.5×23 .

Among our skins of *O. socorroensis* are four which show more or less white on the rump. One of these (σ , No. 4331, Coll. F. S. D.) has the lateral upper tail-coverts from base to tip pure white; so that the rump may be described as white with a dusky median stripe. This specimen is in this respect not distinguishable from some examples of *O. leucorhoa*, and in fact the only difference apparent to us is a scarcely perceptible darker shade to the general plumage. Another specimen (No. 4333, Coll. F. S. D.) has only the outer webs of the lateral rump feathers whitish. Another (No. 5246, Coll. J. G.) has a still more restricted edging of white; while one more (No. 4322, Coll. F. S. D.) has merely a trace of pale edging. All the rest of our series of twenty-four specimens have the rump uniform sooty brown like the back. This variation toward the white-rumped condition has been noted in this species before (Anthony, Auk, XV, 1898, pp. 37, 38), and seems to be purely individual. Yet it may reasonably serve to indicate probable recent origin from a widespread, white-rumped ancestor like *O. leucorhoa*, which *O. socorroensis* otherwise approximates so closely. A comparison of specimens of *O. socorroensis* with the fine series of *O. homochroa* in the California Academy of Sciences collected by Leverett M. Loomis on the Farallones, shows the differences between these two forms to be slight but constant, consisting in somewhat paler color and smaller size of the latter.

6. *Sterna forsteri*. FORSTER TERN.—Several were seen flying about the launch while we were approaching and yet some distance from South Island.

7. *Phalacrocorax auritus albociliatus*. FARALLONE CORMORANT.—Several pairs were breeding on the south end of North Island. The-nests were built up quite substantially on rocks and bushes near the summit of the ridge. Two nests contained two and three eggs respectively, while several others had small young. This species builds separately from the Brandt Cormorant, none of which were seen in company with the former.

8. *Phalacrocorax penicillatus*. BRANDT CORMORANT.—This was the most abundant cormorant in the vicinity, and many had evidently nested around the sides of North Island, where numerous empty nests were noted.

9. *Pelecanus californicus*. CALIFORNIA BROWN PELICAN.—Large numbers were always to be seen about the islands, either roosting on out-lying rocks or going and coming in undulating lines from their feeding grounds somewhere up the mainland coast. A big colony had bred on North Island, for nests were numerous there at the south end. Most of the young were full grown and able to fly, but a few were found still in a

more or less helpless state. One nest contained two young about half grown. On being approached they tumbled out precipitately, falling all in a heap. They soon righted themselves, however, and regained their wonted composure with a ludicrous expression of gravity.

10. *Heteractitis incanus*. WANDERING TATTLER.—A lone individual was observed on August 6, at the edge of the surf on Middle Island.

11. *Actitis macularia*. SPOTTED SANDPIPER.—Two individuals were seen on South Island on August 6. They were feeding along the rocks at the water's edge.

12. *Numenius hudsonicus*. HUDSONIAN CURLEW.—Two were noted flying over South Island on August 7.

13. *Arenaria melanocephala*. BLACK TURNSTONE.—About a dozen were seen about Middle Island on the rocks at the edge of the surf.

14. *Hæmatopus frazari*. FRAZAR OYSTERCATCHER.—One was seen on North Island and another secured from Middle Island. This specimen is a male in adult plumage and bears out well the characters assigned to this form by Mr. Brewster.

15. *Hæmatopus bachmani*. BLACK OYSTERCATCHER.—Several pairs of this species were seen about Middle and North Islands, all adults, but from their anxious behavior we judged there must be young about. As we approached the former island two Black and a Frazar Oystercatcher came out circling together around our skiff with the usual loud cries.

16. *Haliæetus leucocephalus leucocephalus*. BALD EAGLE.—One was seen at South Island. We were told that a pair had a nest there.

17. *Falco anatum anatum*. DUCK HAWK.—Duck Hawks were seen flying over North and Middle Islands. On the highest ridge of the latter were many remains of gulls for which we thought Duck Hawks might be accountable. In several cases the skins of the victims were neatly turned inside out over the head leaving the attached skeleton picked clean.

18. *Corvus corax sinuatus*. AMERICAN RAVEN.—A raven was seen flying over Middle Island, and another near the cove on South Island.

19. *Salpinctes obsoletus*. ROCK WREN.—Rock Wrens were observed on each of the three islands visited. They seemed to be most numerous on North Island where they were seen skipping about among the nests in the old pelican rookery, as well as along the stony ridges. The specimens secured are all in worn juvenal plumage, or else in the midst of the annual moult. No differences are evident to distinguish these from mainland examples.

20. *Carpodacus clementis*. SAN CLEMENTE HOUSE FINCH.—House Finches were fairly common on South Island, and perhaps twenty were seen on Middle Island. But on North Island only a single individual was discovered, though the vegetation and general conditions on the three islands appeared about the same. On Middle Island, on August 6, a nest was found in a ledge of rock overhanging the petrel grounds. The formation was a sort of conglomerate, showing many holes where smooth cobble-stones had fallen out. In one of these natural cavities, ten feet

above the base of the ledge and overhung by a projecting slab, was a linnet's nest containing small young. The nest consisted of dry remains of ice-plant amassed to fit the cavity, while the cup-shaped depression was lined with gull feathers. The three young were only about one-third grown, though possessed of lusty voices which served to indicate their whereabouts. On the same island was a flock of linnets composed mostly of full-grown juvenals. The specimens secured agree in differing decidedly from the mainland form. They seem to be identical with the San Clemente Island form, for they possess the bulky bill and heavy brown streaking characteristic of *clementis*. An adult male taken on Middle Island (No. 5236, Coll. J. G.) has the bill as large as the largest in an extensive series from the Santa Barbara Islands.

21. *Melospiza coronatorum*. CORONADOS SONG SPARROW.—We found Song Sparrows on all of the three islands visited. On South Island juvenals were seen along the path which leads back from the 'hotel' at the cove. On the Middle Island, where we found the petrel colony, an old and weather-beaten nest was found under a bush. This contained a faded but still identifiable egg-shell with contents dried. On North Island Song Sparrows were fairly common, and here on August 7, we obtained twelve specimens. As we landed, an individual was fearlessly hopping close at hand among the boulders almost at the edge of the surf. Most of the Song Sparrows, however, were seen higher up toward the crest of the island, where they were haunting the sparse growth of shrubs on the shaded northeast slope. We saw no trace of fresh water anywhere, and the scanty vegetation presented anything but an inviting appearance. Yet here we heard the familiar notes and full song of these birds which on the mainland keep so close to verdant water courses and damp lowlands. The Rock Wren, always a bird of the driest localities, did not seem out of place, but the Song Sparrow seemed altogether foreign to such surroundings. Strange that the latter should accommodate itself to a desert place like this, while truly dry-land birds like *Amphispiza*, *Aimophila*, and *Pipilo* are absent altogether. Nevertheless here were the plastic Song Sparrows, and our specimens show that this colony, isolated, for we wish we knew how many decades, has not remained indifferent to its unique environment. Certain constant characters are presented which, though doubtless considered by some as 'trivial,' seem to us significant, and therefore entitle the form to a distinctive name.

Melospiza coronatorum, new species.

SPEC. CHAR.—Most nearly resembling in coloration *Melospiza clementæ*, and general size about the same, but tarsus decidedly shorter and bill smaller; differs from *Melospiza cinerea cooperi* of the adjacent mainland in much paler ground color, narrower streaking and smaller bill.

TYPE.—♂ adult, No. 5232 Coll. J. G.; Los Coronados Islands (North Island), Lower California; August 7, 1902.

DESCRIPTION OF TYPE (in complete newly acquired adult annual plumage).—Superciliary stripe conspicuously olive-gray, becoming pure white in the supraloral region; median crown stripe posteriorly drab-gray, becoming white next to the culmen; lateral crown stripes burnt umber; the whole top of head between the superciliary stripes narrowly streaked with black; postocular stripe burnt umber streaked with black; rictal streak black mixed with burnt umber; suborbital and loreal regions whitish flecked with black; auriculars drab-gray; malar stripe white faintly tinged with cream-buff posteriorly; submalar streak black mixed posteriorly with burnt umber; chin and throat pure white, with a few sooty feather-tips; sides of neck drab-gray and hind neck drab, both obscurely dusky streaked; ground color of back and rump broccoli brown; rump immaculate, but back and upper tail-coverts narrowly streaked with black; to be more explicit, an interscapular feather has a black shaft-streak margined narrowly with hazel, the rest of the exposed feather externally being drab; breast and sides streaked with black, each exposed feather bearing a cuneate shaft-streak margined on either side very narrowly with hazel; belly and anal region pure white; flanks and crissum pale clay color streaked with sooty brown; tail sooty brown externally edged with pale mars brown; wing-coverts and quills centrally sooty brown edged with pale mars brown, the coverts and secondaries tipped with pale drab.

MEASUREMENTS OF TYPE.—Wing, 2.50; tail, 2.90; tarsus, .77; hind toe and claw, .54; middle toe and claw, .80; bill from nostril, .34; culmen, .43; depth of bill at base, .24.

RELATIONSHIP.—A comparison of this with other members of the adaptive *Melospiza cinerea* group shows it to be nearest the two California insular forms, *clementæ* and *graminea*. The coloration seems to be much alike in the three cases; at present nothing can be safely stated on this point, for all the material at hand from the Santa Barbara Islands is in worn summer plumage (March to June). In general size *coronatorum* is nearer *clementæ* than *graminea* though with smaller bill and feet than either. It is quite significant that the Coronados Islands form should thus present characters much more like those of the form on San Clemente Island, seventy miles to the northwestward, than like those of the mainland race twelve miles at most to the eastward. *Coronatorum* differs from *M. c. cooperi* of the adjacent mainland in smaller bill, paler coloration and much narrower streaking. The differences from the other California races are still more conspicuous, so that further comparison may not be drawn. The following measurements indicate the difference in proportions between the three insular races. It must be kept in mind that the specimens of *clementæ* and *graminea* are in worn plumage, so that more or less wearage (say 3%) should be added to the wing and tail lengths given. Most of the *coronatorum* skins are in complete new fall plumage. The dimensions are given in inches, instead of millimeters, because most of the published measurements of California Song Sparrows have been in inches.

<i>M. coronatum</i>		Wing.	Tail.	Tarsus.	Hind toe and claw.	Bill from nostril.	Culmen.
5232	Coll. J. G. ♂ ad. an.	2.50	2.90	.77	.54	.34	.43
5231	" " " " " "	2.53	2.90	.77	.55	.34	.44
5229	" " " " " "	2.50	2.75	.75	.53	.32	.43
5228	" " " " " "	moulting		.67	.53	.30	.40
5230	" " " " " "	2.31	2.67	.80	.60	.32	.41
5233	" " " " " "	2.33	2.57	.75	.54	.32	.41
5362	Coll. F. S. D. ♂ ad. an.	2.38	2.72	.68	.52	.31	.40
5370	" " " " " "	2.50	2.90	.80	.59	.33	.42
5365	" " " " " "	2.35	2.71	.68	.54	.34	.44
5372	" " " " " "	juv. moulting		.77	.57	.32	.42
5396	" " " " " "	2.42	2.72	.77	.53	.31	.40
5416	" " " " " "	2.23	2.52	.72	.53	.31	.40
<i>M. graminea</i>							
	Av. 7 ad. ♂♂	2.39	2.53	.83	.57	.35	.47
	Av. 3 ad. ♀♀	2.30	2.50	.79	.56	.34	.44
	Av. 3 juvs.	2.41	2.50	.84	.57	.32	.42
<i>M. clemente</i>							
	Av. 10 ad. ♂♂	2.53	2.78	.88	.57	.37	.46
	Av. 3 ad. ♀♀	2.40	2.64	.84	.57	.35	.45
	Av. 3 juvs.	2.49	2.75	.84	.59	.33	.44

BIBLIOGRAPHY.

1877. STREETS, T. H. Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California. = Bull. No. 7, U. S. N. M., 1877. Ornithology, pp. 9-33.

Zonotrichia leucophrys intermedia (= *Z. l. gambeli*) recorded (p. 11) from Los Coronados Islands without comment. This species and a few others may be expected to regularly visit the islands in winter.

1883. BELDING, L. Catalogue of a collection of Birds made at Various Points along the Western Coast of Lower California, North of Cape St. Eugenio. [Edited by R. Ridgway.] < Proc. U. S. N. M., V, March 21, 1883, pp. 527-532.

On pages 528 to 529 occurs a brief description of Los Coronados Islands, where "a few birds only were taken . . . the more important of which are the following": *Phalacrocorax penicillatus*, *Hæmatopus palmaris* (= *H. frazari*) and *Hæmatopus niger* (= *H. bachmani*); only these three are mentioned.

1888. BREWSTER, W. Descriptions of supposed New Birds from Lower California, Sonora and Chihuahua, Mexico and the Bahamas. < Auk, V, January, 1888, pp. 82-95.

Hæmatopus frazari, p. 84, new species; type from Carmen Island, Gulf of California. Belding's Coronado specimen critically mentioned.

1889. BRYANT, W. E. A Catalogue of the Birds of Lower California, Mexico. < Proc. Cal. Ac. Sc., 2nd Ser. II, December 17, 1889, pp. 237-320.

Pelecanus californicus recorded as nesting on Los Coronados Islands; also mention of the three species found by Belding.

1898. ANTHONY, A. W. Petrels of Southern California. < Auk, XV, April, 1898, pp. 140-144.

Describes nesting of *Oceanodroma melania* and *O. socorroensis* on Los Coronados Islands.

1899. MCGREGOR, R. C. Notes on California Song Sparrows. < Bull. Coop. Orn. Club, I, September, 1899, pp. 87, 88.

Song Sparrow recorded from Los Coronados Islands, and referred to *Melospiza melodia clementæ* (= *Melospiza coronatorum*).

1899. ANTHONY, A. W. A Night at Sea. < Bull. Coop. Orn. Club, I, November, 1899, pp. 101, 102.

Popular account of the birds seen while rowing out to the Islands.

1901. RIDGWAY, R. The Birds of North and Middle America [etc.]. = Bull. No. 50, U. S. N. M., 1901.

Song Sparrow of Los Coronados Islands referred (p. 88) to *Melospiza cinerea clementæ* (= *Melospiza coronatorum*).

1902. BREWSTER, W. Birds of the Cape Region of Lower California. < Bull. Mus. Comp. Zoöl., XLI, September, 1902, pp. 1-242, map.

Several of the previously recorded birds are quoted as from "the Coronado Islands," though these are erroneously stated to be "in the Gulf of California."

SUMMARY.

Twenty-two species of birds are known from Los Coronados Islands. Fifteen of these are indigenous, while seven are visitants which breed elsewhere. Only six native land birds have been found, of which the Bald Eagle, Raven, and Duck Hawk are birds of long flight and general distribution. Two of the remaining three are different in certain recognizable features from their relatives on the adjacent mainland ten miles distant, being most like those on San Clemente Island, six times as far away in another direction. The non-indigenous species are all of wide distribution along the Pacific coast of North America.

INDIGENOUS SPECIES.

Ptychoramphus aleuticus.
Larus occidentalis.
Oceanodroma melania.
Oceanodroma socorroensis.
Phalacrocorax auritus albociliatus.
Phalacrocorax penicillatus.
Pelecanus californicus.
Hæmatopus frazari.
Hæmatopus bachmani.
Haliæetus leucocephalus.
Falco anatum.
Corvus corax sinuatus.
Carpodacus clementis.
Melospiza coronatorum.
Salpinctes obsoletus.

NON-INDIGENOUS SPECIES.

Larus heermanni.
Sterna forsteri.
Heteractitis incanus.
Actitis macularia.
Numenius hudsonicus.
Arenaria melanocephala.
Zonotrichia leucophrys gambeli.