

over the back, the wind's levitation thus bearing most of the weight. Actually, the birds now *walk on the water*, paddling with the big feet quite sufficing to lift the bodies clear, and, gulping food rapidly as they go, the whole performance is most grotesque. With all this excitement, there is no noise; in a few moments the last scrap has disappeared, a hundred wings are extended, and, with a final "push", each bird rises lightly to windward, resuming his tireless vigil in our wake.

I am inclined to believe that among ornithologists unaccustomed to ocean voyaging, a mistaken estimate is apt to prevail as to the relative number of pelagic birds: I say "relative", for of course the actual total is enormous. Such a false impression would naturally arise from several causes, the principal one, no doubt, being a failure to realize the immensity of the seas, covering, as they do, four-fifths of the earth's surface: an incredible number of birds may be scattered over this vast area and yet appear, as is actually the case, few and far between. Then, too, these birds breed in colonies, and are best known to us when assembled in apparently countless hordes. While it is true that in making a coastwise trip, say from San Francisco to San Diego, or New York to New Orleans, one would, during certain seasons of the year, have plenty of feathered followers, few of the birds observed would be "pelagic", and a voyage over the high seas in similar latitudes would probably be comparatively lonely; indeed, I can confidently assert that except in high latitudes, and especially those of the southern hemisphere, one may sail not only hundreds but *thousands* of miles and not see a bird for days at a time. The recent voyage of the "Kansas"—with the other fifteen battleships of the U. S. Atlantic Fleet—from San Francisco to Japan, via Hawaii, New Zealand, Australia and the Philippine Islands, may serve as an illustration. The total distance covered was approximately 12,000 miles, but except from Lat. 32 S., Long. 178 E. (some two hundred miles north of New Zealand) to Lat. 30 S., Long. 112 E. (off the west coast of Australia) I did not observe, all told, as many as 100 pelagic birds. Doubtless many escaped notice, but I was much of the time on deck myself, and my shipmates, knowing my hobby, were always keen to send me word whenever any "strange birds" were about. I think, therefore, such errors were reasonably few and quite insufficient to materially affect the general conclusions expressed herein.

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NESTING OF THE XANTUS MURRELET AS OBSERVED ON LOS CORONADOS ISLANDS, LOWER CALIFORNIA

By CHESTER LAMB

THIS article does not pretend to be a life history of *Brachyramphus hypoleucus*, for my stay on its breeding grounds was much too short to make full observations. It is merely an account of the manner in which the species nests in the locality where I found it.

Los Coronados Islands are four in number, situated a few miles south of the boundary line of California and Mexico, and about ten miles from the mainland. They are quite small, the largest being not over two miles and a half long, by a mile wide, the next in size about half as large, while the two remaining are mere large rocks rising out of the sea.

During the week, May 30 to June 6, 1908, it was my good fortune to camp on

these islands in company with my friend Mr. Pingree Osburn of Pasadena. In that interval we examined over twenty-five nesting sites, indicated by the broken egg-shells and half as many full sets.

Mr. Osburn and Mr. Beck visited the Los Coronados group in early April of this year, and at that time they found two sets, one fresh and the other heavily incubated.

According to some authorities these birds commence breeding as early as the fore part of February further south in the vicinity of Natividad Island; but in this latitude their nesting period evidently commences about April 1, extending to the middle of June.

An acquaintance later visited the Islands July 1 but found no Xantus Murrelets breeding. I believe that the Los Coronados group is the furthest north that they have been found nesting.

Reed, in his "Nests and Eggs of North American Birds", states them as laying but a single egg, but I found them laying two to a setting nearly as frequently as one. Of twelve sets five were of two and seven of one. When the set consists of two the eggs will be very different in markings, and even ground color. I believe, too, that when the set is of two, one egg is frequently infertile, as indicated by our finding several nesting places having the broken shells of an egg, evidently hatched, and an infertile egg with it. In one set of two, upon which I captured the sitting bird, one egg was infertile.

A very handsome egg is laid, in color varying from a dark drab to a very light shade of green, marked either with fine dark brown specks, or lines, usually heaviest at the larger end, and forming a circle around it. In two sets the eggs are heavily blotched evenly over the whole surface. The eggs are elliptical in shape, one end being but slightly smaller than the other and about the size of a coot's egg.

Both sexes assist in incubating the eggs. One male and two females were captured on the nests.

Like the petrels they vomit a yellowish oil when captured, altho of not such a disagreeable odor. This scent is peculiar to them, and with a little practice one can easily distinguish between their haunts and those of petrels and auklets.

Unlike the Cassin Auklet, and Socorro and Black Petrels, among which *Brachyramphus hypoleucus* nests, they never make burrows in the ground, or even preëempt unoccupied ones. Their favorite nesting sites are in the various dark corners of a cave.

In one cave, 12 feet by 4 feet, with numerous dark holes, we found where six pairs had been nesting, besides two sets of eggs. This is the only instance on the Islands where we found them colonizing.

Their next choice of a nesting site is under a ledge of rock, well back out of reach, and had we not had a crow-bar with us it would have been impossible to reach some nests. In one case I captured a female under a small rock within easy reach; however, she was not incubating eggs.

They are not particular as to distance or proximity to the water, some of the nesting sites being a few yards above high water, and others at the top of the Islands several hundred yards from the sea.

The eggs are laid on the bare earth with no attempt at nest building, except a very shallow hole scratched out where the earth is soft and none at all where it is the least hard.

No Murrelets are to be seen about the Islands in the day time, but as soon as it gets real dark their plaintive, half cry and half whistle can be heard.

Fresno, California.