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Notes on the Wading Birds of the Barr Lake Region, Colorado

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NOTES ON THE WADING BIRDS OF THE BARR LAKE REGION, COLORADO

By ROBERT B. ROCKWELL

WITH THIRTEEN PHOTOS BY THE AUTHOR

THE previous papers relating to the bird-life of the Barr Lake region, which have appeared in THE CONDOR, have dealt with species which, either through their relative abundance or through the ease with which their nests were located, have made possible a more or less connected account of their breeding habits. The species mentioned in this paper are on the other hand species which breed in such limited numbers, or whose nesting habits vary so little as to

Fig. 44. TYPICAL NEST AND EGGS OF BITTERN

make an extended study of these habits either impossible or so little removed from the ordinary as to be unworthy of publication.* It will therefore be the purpose of this paper as far as is practicable to lay before the reader (even at the risk of a disconnected recital) only those facts which throw new light upon the habits of this very interesting class of birds. As an aid to easy reference it is probably best to treat each species separately in the order of the A. O. U. nomenclature.

Botaurus lentiginosus. AMERICAN BITTERN.

Bitterns were among the commonest birds around all the rush-bound ponds, but owing to their retiring habits they were seldom seen except when flushed, and as they were close sitters fewer nests were found than the relative abundance

*All the notes upon which this paper is based were taken in company with L. J. Hersey.

of the birds would lead one to expect. All the nests found by us conformed closely to the published descriptions, and there was practically no variation in material, construction or location. The young are very queer looking little balls of yellowish down, from which protrudes a long sharp bill, and the most malignant pair of eyes to be found in the bird world. In fact I know of no bird disposition that could equal that of these helpless little creatures in genuine "cussedness". The slightest noise or motion transforms the cuddling little chicklets into evil-looking little fiends, that attack an outstretched finger or strike with the ferocity of a tiger. Their note of anger is a loud, forbidding hiss, very snake-like in quality (possibly a natural protection from the bullsnakes which infest their nesting grounds) and more than one nest was found that would have otherwise been passed by but for the demonstration occasioned by our approach. As soon

Fig. 45. YOUNG BITTERNS IN NEST

as they are able to leave the nest, this aggressive nature deserts them and they are the same skulking secretive birds as the mature adults, although they show some fight if handled.

One peculiar example of "bittern nature" came to our notice. While working through a very dense cover of cattails and rushes we came upon an adult bittern which permitted us to pick it up. A thorough examination failed to reveal any injury, so we decided to photograph our captive. However, when we endeavored to pose him he would either flop down in a most dejected heap or would dart for the rushes with most surprising speed, which would be the occasion for some highly edifying (for the other fellow) speed tests upon our part. Finally after a dozen fruitless attempts we decided to see if his wings were injured so tossed him as high as possible into the air. He very promptly and

gracefully took wing and our last glimpse of him showed him flying true and strong over half a mile away. Whatever induced that bird to permit us to pick him up and handle him in the way we did will of course remain a mystery.

The birds arrived in the latter part of April (the 25th) and eggs were laid the latter part of May. An unusually early nest contained three young and two eggs May 26, 1906. A nest containing two fresh eggs on May 24, 1907, contained freshly hatched young on June 22. The young develop much faster than young of the Night Herons, and upon the strength of rather scanty data I think they leave the nests within two weeks after hatching.

Rallus virginianus. VIRGINIA RAIL.

Porzana carolina. SORA.

Both species of rails nested in large numbers, the Virginias apparently being somewhat commoner than the Soras. Both species frequented the lush, wet,

Fig. 46. NEST AND EGGS OF SORA SHOWING GRASSES BROKEN DOWN OVER NEST TO FORM A SORT OF CANOPY

seepage land and the nests were almost without exception found in clumps of dense, long, round-stemmed marsh grass. The concealment of these nests was wonderful, fully equalling if not surpassing the best concealed nests of the Teal ducks. It was practically impossible to flush the birds directly from their nests. They would skulk through the grass for a dozen feet or more and then take flight. Even where we knew the location of the nest and dashed up at full speed we were seldom able to make the bird take directly to the air.

The habit of the Soras of bending over the tops of the grasses and rushes surrounding the nest to form a sort of canopy over it is I believe peculiar to this species, and well built nests of this type are among the most beautiful of the ground nests.

Eight eggs appeared to be the average set of the Virginia Rail although one set of eleven eggs was found. On the other hand we encountered several birds incubating very small sets. Two or three sets of three and four incubated eggs were examined; and one persistent bird, found with a nest containing one egg on May 18, 1907, was visited weekly and was still brooding the single egg three weeks later, on June 8. The young rails leave the nest very soon after hatching and are quite noisy. Several young Virginias examined were covered with coarse *jet black* down.

The Sora sets averaged somewhat larger, sets of ten and eleven being common, and two sets numbering thirteen and fourteen eggs respectively were found. In many instances one or more eggs from a nest would be found on the ground near the nest, whether displaced intentionally or accidentally by the parent we could not discover. The average date for fresh eggs of the Soras was about

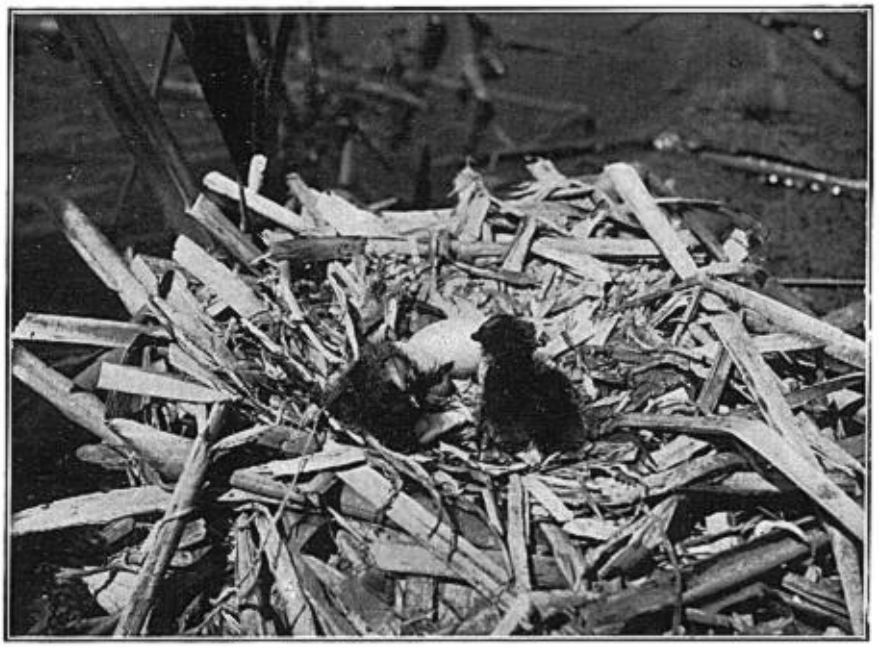

Fig. 47. TYPICAL NEST, EGG AND YOUNG OF COOT

June 15 and we found that many of the sets hatched about July first; but the Virginias were fully a month earlier. One half-grown young Virginia was found June 15, 1907, and a week later the rushes abounded with them. One belated set of seven fresh eggs was found July 6. Data is accumulating steadily, that will eventually place the Virginia Rail definitely among regular Colorado winter residents.

Fulica americana. Coot.

Second only to the Yellow-headed Blackbirds in numbers come the Coots Every lake and pond was alive with them, and literally thousands of these birds are hatched every year along the Barr chain. The nesting season extends through May, June and July. Our earliest complete set was found April 27, the first egg of which must have been laid April 18. This set hatched May 11. Nests with eggs were seen as late as July 21, and immature birds were much in evi-

dence until early August. In the large number of nests examined were found wide variation in construction and location. Most of the nests were built well out toward the edge of the cattails over water three or four feet deep, others were built in close to shore in very dense cattail thickets. One nest was found built on dry ground, another fully two feet above the ground on a platform of dead cattails, with a neat run-way leading up to it; and still another nest fully four feet above ground in the lower branches of an apple tree, the water of the lake having receded that much after having inundated the orchard. Two nests were seen far out on open water that were readily visible at a distance of one hundred yards. One nest was found that looked exactly like a grebe's nest; another was built entirely of weed-straws: still another entirely of freshly cut *green* cat-tails and one over deep water was made entirely from green moss brought up from the bottom of the lake.

Complete sets ranged in number from six to thirteen and one set at present in the writer's collection contains seventeen eggs. Minute examination of this set has failed to reveal two types of eggs as would likely be the case if this set was the product of two birds. When found the eggs in this set were arranged in two layers in the nest, and even then it must have been practically impossible for the brooding female to cover the entire clutch. In several instances we proved that an egg was deposited each day. Incubation is apparently not begun until the set is complete, as all the eggs in a nest usually hatched on the same day.

Fig. 48. NEST OF COOT BUILT ON PLATFORM OF DEAD RUSHES TWO FEET ABOVE GROUND WITH RUNWAY LEADING UP TO EGGS

The parent birds when disturbed during incubation have a very peculiar fashion of swimming out a few yards from the nest, uttering a low moaning or croaking note of protest. Then with head low over the water, feathers puffed out and wings held away from the body, the bird will suddenly rise just off the water, and by kicking rapidly backward with both feet, will send a shower of spray in the general direction of the intruder. This performance will often be repeated time after time and is a very grotesque and expressive method of exhibiting the bird's displeasure.

The parents are quite devoted to their nests but will seldom allow one to approach closer than a dozen yards before seeking safety out on the water, but seldom if ever do they take flight upon leaving the nest and then only in cases where they are greatly surprised.

The young are covered with coarse black down, with a bald spot on the top of their heads of a livid red color. They swim with wonderful strength and speed, a baby only a couple of days old swimming almost as fast as a man can walk. They take advantage of natural cover much as the young grebes do, but seem less wild than any of the other young wild birds.

Steganopus tricolor. WILSON PHALAROPE.

The most baffling bird as regards nesting habits with which our field work brought us in contact was this pretty phalarope. In point of numbers they were second only to the Killdeer among the shore birds, and throughout the nesting season there was hardly a trip in which we did not encounter parent birds whose actions made it plain that we were very close to their nests; yet in all these trips

Fig. 49. FREAK NEST OF COOT COMPOSED ENTIRELY OF YELLOW WEED STALKS

scattered over several years, the writer has been favored with the sight of but two nests.

The birds arrived late in April and by May 10 were seen in goodly numbers, usually in flocks of fifty or more. A week or two later the birds were still in flocks but were apparently mated. During 1906 evidences of nesting were not noted until June 10; in 1907 no anxious parents were noted until June 15; but in 1908 the birds were unusually numerous and showed every indication of the proximity of nests as early as May 29. In fact one of the two nests mentioned above was found June 16, and on that date contained three young just hatched and one egg which was afterward found to contain a fully developed dead embryo. This nest was a scanty affair of dry grass built in sparse marsh grass fully 100 feet

from the shore line on a small island and was upon thoroughly dry ground. The nest was discovered through the tell-tale actions of the parent.

That the nests are wonderfully well concealed both through the protective coloration of the eggs and through the cunning of the parent birds is beyond question; yet this alone would hardly explain our lack of success in finding these nests, for had the birds been actually nesting in the numbers their relative abundance would seem to indicate, it would hardly have been possible for us to fail in our search so consistently. The suggestion was offered that while the birds were quite abundant each year, possibly only a small proportion of them were breeding birds, and that the non-breeders joined the breeding birds in a demonstration when the intruder approached the nesting site. The fact that throughout the nesting season Phalaropes were seen in flocks of various sizes would seem to support this theory.

Recurvirostra americana. AVOCET.

Among the most interesting experiences during the Barr lake work was our study of the nesting Avocets. The birds first made their appearance the last week in April (1907) and on account of their size and conspicuous coloring they were easy to keep track of. We kept a sharp lookout for their nesting site throughout May and June, and finally decided that they must be breeding on a small island far out in the big lake. A trip to the island on June 30, failed to reveal any nests although the birds showed every evidence of having nests nearby. On July 4, 1907, we visited the island again and as we landed, a female Avocet flew up about twenty-five yards back from shore and upon walking directly to this spot we found a nest containing four eggs. About twenty yards from this point we found a second and thirty yards farther on a third, each containing four incubated eggs.

Fig. 50. NESTING SITE OF AVOCET ON ISLAND

The nests were all located in very similar locations, among a young growth of cockle-burrs not over six inches in height and which had probably grown at least half of that since the eggs were laid. The cockle-burrs formed a belt about ten yards wide clear around the island just below the dense blue-stem and other rank grass with which the island was covered and on ground that was under water during the high water of the spring although inundated for a short time only. Two of the nests were very crude affairs, being a mere shallow hollow in the sand with a very few dead weed stalks of short lengths arranged around the eggs. The

other was constructed in the same manner, but was quite well lined with weed stems, so that the eggs did not touch the ground. There was no evident attempt at concealment, the nests all being placed in small open spaces from six inches to a foot in diameter, and with nothing to protect them; but the color of the eggs was sufficient protection to make them quite inconspicuous.

The birds continually showed signs of uneasiness, staying usually at the edge of the water and occasionally flying over us with their loud, ringing cry. Sometimes they would affect a broken wing, but the effort was rather awkward and the deception was very apparent. They acted much as a Killdeer does and while quite demonstrative, did not betray the whereabouts of the nests by their actions, only that they flushed from them directly, instead of running along the

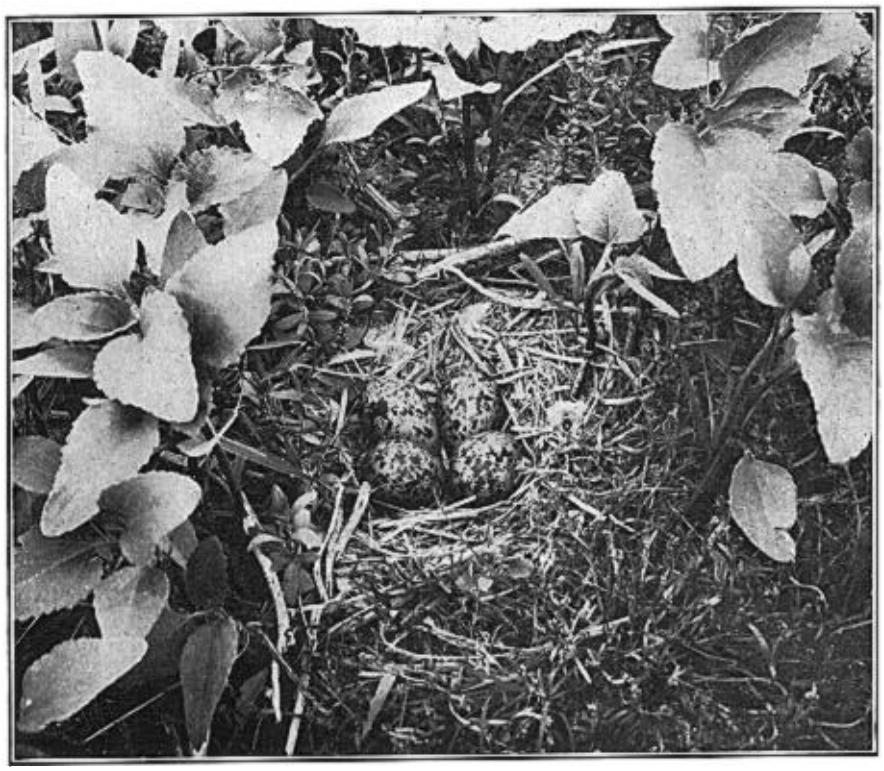

Fig. 51. NEST AND EGGS OF AVOCET

ground before taking wing. When not flying about overhead the birds often lit on the water where they swam easily and lightly, and they seemed at all times very anxious to get back to the nests, returning as soon as we were a short distance from the nests.

Upon our return to the island on June 21, we found that the nests had been disturbed; two of them were deserted and about half of the eggs were missing. On July 28 we found to our sorrow that all the nests had been destroyed; at least so we surmised as we did not find any young birds.

On May 31, 1908, we visited the island again and found to our surprise that the colony was nesting fully five weeks earlier than in the preceding spring. On this date we found eight nests: seven on the island proper and one on the sand-

bar leading to it from the shore (as the water was now very low). The seven were typical nests, built in the zone of pig-weed and young cockle-burrs exactly like those of the preceding year; while the one on the sand-bar was a neat depression in the sand well lined with grass. There was not a particle of vegetation or cover on the sand-bar, but on account of their coloration the eggs were very inconspicuous, even in their exposed position. On this occasion the birds were very noisy and demonstrative and we located the nests readily by their actions.

On June 14 we found that two of the nests had been destroyed, some bird having pecked small holes in the eggs. All the other nests had either hatched or been destroyed as we did not find either nest or young. On June 19 we found another nest of four eggs on the island but still no sign of young birds, and on June 27 this nest was found to have been destroyed as the others had been. We finally concluded that the mischief must have been done by a good-sized flock of non-breeding Ring-billed Gulls which made the island their headquarters.

The birds remained until the latter part of October, well into the hunting season, and their large size, conspicuous coloration and absolute lack of fear of firearms made them easy prey for the thoughtless hunters who frequented the lakes.

Gallinago delicata. WILSON SNIPE.

Up to very recent years the published records of Wilson Snipe as a breeding bird of Colorado, were confined to four records: that of Drew who found it breeding in San Juan County (B. N. O. C. IV, 1881, 85); that of W. E. D. Scott who found it breeding at Twin Lakes, Lake County, at 9,000 feet (B. N. O. C. IV, 1879, 92; and that of Aiken at the San Luis Lakes at 7500 feet elevation and that of Sprague (Cooke) at 9000 feet in the Middle Park. All of these records are Transition and Canadian zone records, and the first two at least are of such an indefinite nature that it is a question whether nests were actually found or whether the breeding record was based only upon the presence of the birds during the nesting season.

From 1905 to 1909 Fred M. Dille found several nests near Altoona, Boulder County, close to the foothills and at an elevation of about 5500 feet. As these sets were taken just inside the Transition zone, the single nest which we found at Barr June 20, 1908, is, so far as I know, the first breeding record for the species within the Upper Sonoran zone of Colorado.

This peculiar bird occurs regularly though not commonly at Barr throughout the nesting season, and the fact that more nests have not been found may no doubt be attributed alone to lack of field work. In fact we encountered several pairs of birds which we were reasonably sure were nesting, but we were successful in one instance only.

This nest was located on (and above) the surface of slightly damp ground at the edge of a good sized area of very soft, boggy land formed by the seepage under the dike of the Big Barr Lake. It was built in the center of a tussock of grass about eight inches in length and was a very neat, well shaped and cupped nest composed entirely of fine dry grass. In construction it was far superior to any shore bird's nest I have ever seen, being so compactly and strongly put together that it was possible to remove it from the nesting site without injury. In general appearance the nest itself is not unlike certain sparrows' nests.

It was not particularly well concealed; in fact from above it was quite conspicuous. The bird flushed when we were about fifteen feet away and made quite

a demonstration. Of the four eggs, one was quite fresh, and the other three were in various stages of incubation.

On several occasions we noted the peculiar "nuptial gyrations" in the air, which have been graphically described by some writers.

REMARKS UPON THE OCCURRENCE OF SEVERAL SPECIES OF LIMICOLAE

W. W. Cooke in the 'Third Supplement to the Birds of Colorado' (Auk, XXVI, 1909, 411), in speaking of the Western Solitary Sandpiper says: "The early publications on Colorado Ornithology included this species among the breeding birds of the state, and the same reference has been continued by subsequent writers. As neither eggs nor young birds have ever been reported from the state the assumption of breeding rests on the presence of the birds in pairs during the summer season. Late investigations have shown that many non-breeding Solitary

Fig 52. NEST AND EGGS OF WILSON SNIPE

Sandpipers remain through the summer far south of the breeding grounds, and also that the southward migration of breeding birds begins soon after the first of July. In the light of these facts it must be considered that, though the species probably does breed in Colorado, yet the actual breeding is not yet proven."

While this statement was written over a year after the last of our work at Barr it confirmed our observations so thoroughly and applied so well to several species beside the one it referred to, that it has been copied verbatim. The most puzzling problem which confronted us was the status of the several species of Sandpipers and other waders, whose breeding ground was generally supposed to be in the far north, which yet were quite common at Barr during at least a portion of the breeding season. The closest attention was given these species, and much time was spent in an effort to definitely establish some of them as breeders, yet

in only one instance did we encounter any birds whose actions gave us any reason to believe that they were actually nesting.

This was a Least Sandpiper which was seen on a small stretch of sandy beach on May 24, 1907; and a week later (May 30) the same bird (presumably) was seen at the same place and exhibited some excitement at our intrusion. The bird was very tame and even when frightened, refused to leave the vicinity of the supposed nesting site. However the most minute search failed to reveal a nest.

As we were unsuccessful in making any definite discoveries the actual dates will be given, leaving the reader to form his own opinions.

Macrorhamphus griseus scolopaceus. LONG-BILLED DOWITCHER. Observed

Fig. 53. NEST AND EGGS OF UPLAND PLOVER

April 26, 27, May 1, 11, 24, and July 5, 1907; and April 26, May 10 and May 17, 1908.

Micropalama himantopus. STILT SANDPIPER. Observed April 27, July 5, and October 5, 1907, and May 9, 1908.

Pisobia maculata. PECTORAL SANDPIPER. Observed April 21, 26, July 28 and October 5, 1907.

Pisobia bairdi. BAIRD SANDPIPER. Observed May 11, July 21, 28, September 2 and October 5, 1907; and May 2, 10, 17, 30, August 15 and 22, 1908.

Pisobia minutilla. LEAST SANDPIPER. Observed April 26, May 1, May 24, May 30, July 5, July 21, 28, September 2 and October 5, 1907; and April 26, May 3, 10, 17, June 14 and June 19, 1908.

Limosa fedoa. MARBLED GODWIT. Observed June 24, 1906; May 11, 17, July 5, 28, 1907; and May 10 and 30, 1908.

Totanus melanoleucus. GREATER YELLOW-LEGS. Observed April 26, May 11, July 4, 6, 14, 21 and 28, September 2, and October 5 and 25, 1907; and April 19, May 3, June 27, July 12, and August 15, 1908.

Totanus flavipes. YELLOW-LEGS. Observed April 21, 27, July 5, 21, 28, September 2 and October 5, 1907; and April 19, 26, May 17, June 28, July 12, August 15 and 22, 1908.

Catoptrophorus semipalmatus inornatus. WESTERN WILLET. Observed May 11, 18, July 21 and 28, 1907; and April 20, May 3, 10 and June 19, 1908.

Throughout this list of dates a remarkable similarity of movement appears to exist; the last three weeks of June being the only ones during the entire breeding season that most of the above species were not seen. It is also significant

Fig. 54. TYPICAL "NEST" OF KILLDEER

that the five species which were seen during this period (namely, Least Sandpiper, Marbled Godwit, both Yellow-legs, and Western Willet) are the species most likely to be found breeding in this locality. Generally speaking the month of June appears to be the month during which all these species are least in evidence, and a decided influx of the birds is seen soon after the first of July. In short the dates here given bear out Prof. Cooke's theory almost to the letter.

Bartramia longicauda. UPLAND PLOVER.

Cooke in his "Birds of Colorado" states that the Bartramian Sandpiper breeds *abundantly* upon the plains. The word "abundant" is at best a relative word; yet during ten years field work the one nest we found near Barr was the only one I have ever seen, nor have I heard of any other Colorado field workers who have actually taken the eggs, and so far as I am aware there are no definite

published breeding records for the state except that of Cooke. Although there is small doubt that the bird breeds sparingly on the plains east of Denver, it can hardly be called common anywhere in Colorado. For these reasons description of this nest may be of value.

The nest which was found June 28, 1907, was located in the midst of a rather thick tuft of sand grass, blue stem, and other dry-land grasses, on open rolling prairie well covered with grass, weeds, etc., and fully two miles from any body of water. It was on the west side of a small knoll on rather high ground and was built in an inconspicuous spot. No evidence of it could be seen fifteen paces away.

The nest was a rather deep depression in the ground sparingly lined with fine weed stems, grasses and a few bits of manure and one or two small feathers.

Fig. 55. YOUNG KILLDEERS JUST OUT OF EGG

The tops of the eggs were about flush with the surface of the ground. The eggs were *not all* arranged with the points turned in toward the center. When the nest was first found the bird flushed at a distance of about fifteen yards, and its cries as it rose in the air brought three other birds within a few minutes. At no time did the birds come anywhere near us, and as soon as we left the nest they flew back to it from a point about a quarter mile distant. On the second visit the parent left the nest when we were fully thirty yards away, and flew off close to the ground with short rapid wing-beats (similar to the flight of a Spotted Sandpiper) and lit about a hundred yards away. While flying it continually uttered a querulous musical whistle. Not long afterward, either this bird or the other parent flew up to a height of fully one hundred yards and circled about us two or

three hundred yards distant, occasionally giving this same whistle. Only once or twice did we hear the full Upland Plover "song".

On June 14, 1908, we located a pair of plover that undoubtedly had a nest not far from the shore of the lake, but several careful searches were unsuccessful. This pair of birds was most demonstrative on July 4 and 5. On July 11 their actions plainly indicated that young ones were near at hand.

Oxyechus vociferus. KILLDEER.

The first sound that greeted us in the morning and the last thing we heard at night was the dreary monotonous cry of the Killdeer, and even in the dead of night their notes were occasionally heard. The birds were encountered everywhere: on the lake shores, in the marshes and often back on the dry prairie.

They arrived about the middle of March (March 10, 1907, is my earliest

Fig. 56. KILLDEER AND FOUR EGGS BURIED BY BURYING BEETLES AFTER PARENT HAD DIED ON EGGS

date), and by the middle of April were abundant.

Quoting from my notes of April 26, 1907: "The Killdeer have evidently begun nesting as we did not see one-tenth as many around the lakes as we did last week (April 21); but they are common in isolated pairs farther back on dry land. We found two broken eggs on the lake shore and one on the dry prairie."

The earliest nest was found May 10, and the eggs hatched May 16. The bulk of the nests were found during the latter half of May, but nests with eggs were found throughout the month of June. One young of the year was seen July 28, which was unable to fly at that late date. Mr. Hersey was fortunate enough to see one set of eggs hatch. He says the parent birds carried every bit of shell away from the nest within two hours after the hatching. The birds' actions when about the nest were always confusing and we did not flush the parent from

the nest in a single instance. For the most part they remained at a distance calling loudly, and only in one instance did I see a parent simulate a broken wing to lure the intruder away from the nest.

We found one brood of four young which had just hatched and had not left the nest. They are beautiful little striped creatures, and become very quick and active almost as soon as they are dry. They run with surprising speed, and the note even of the tiniest chicks is the exact counterpart of the parent's note, on a smaller scale. The nests, if they could be called such, showed little variation except as to location, but we found them equally common in damp marshy locations (although in all such cases the nesting sites were perfectly dry) and out amid the cactus and rabbit brush of the dry prairie.

The parent of one nest which we had under observation died upon her nest and during the week between our visits, a colony of Burying Beetles buried eggs and parent until only the tip of the tail and one wing showed above the surface of the ground.

The birds began to gather in flocks the last week in July but did not depart for the south until late in October.

THE PRESENT AND FUTURE STATUS OF THE CALIFORNIA VALLEY QUAIL

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WITH MAP AND DIAGRAM

DURING the past year several circulars have been issued by the Bureau of Biological Survey of the United States Department of Agriculture calling attention to the fact that certain of our native birds, and especially the game birds, appear to be diminishing in numbers. In the annual report of the Chief of the Biological Survey for 1911 this statement is made: "The quail and prairie chicken are favorite and legitimate objects of pursuit by sportsmen, but they have been so ruthlessly pursued that they are now generally scarce and in many localities practically extinct."

With the present agitation in regard to the conservation of our national resources, it naturally follows that sportsmen as well as others are becoming deeply interested in the conservation of game. California has been so well supplied with game that she has been rather slow to wake up to the fact that she must needs look to the future in this regard. The past two decades have seen the practical extinction of such big game as the grizzly bear, elk, and prong-horn antelope. Sharp-tailed grouse have not been seen in the state for many years, and the grouse and sage-hen have been greatly reduced in numbers in many parts of the state.

In line with this rise of interest in game conservation has followed much discussion as to the present status of the California valley quail. The general opinion is that these birds have greatly decreased in numbers. It is the purpose of this paper to present what knowledge we have as to the present status of this quail in California, to discuss the factors governing the increase or