

OBSERVATIONS ON SOME BREEDING BIRDS OF
EL SALVADOR, CENTRAL AMERICA

WITH THREE ILLUSTRATIONS

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The observations to be presented are those made during a summer visit to the country of Salvador, Central America, in the year 1925. On this trip I was accompanied by my father, Dr. Loye Miller; later we were joined by Mr. A. J. van Rossem and Mr. R. A. Stirton who have collected extensively in Salvador in the interests of Mr. Donald R. Dickey. The skins collected by myself which are the basis for the identifications of the species here listed are now in the Dickey collection. The identifications have been furnished by Mr. A. J. van Rossem who has intimate knowledge of the nomenclature of the birds of this region. My notes on many of the species are regrettably incomplete but it is hoped that they may furnish usable information about some of these little-known birds.

Two collecting stations were made during the summer, the one between the towns of Sonsonate and Izalco in the west end of the country from July 9 to 25, and the second at Lake Olomega, near the seaport of La Union at the east end of the country from July 28 to August 24. The country about the Sonsonate station consists of rolling hills with cultivated fields and pastures cut through by wooded ravines and interrupted by tracts of woodland and by coffee plantations. At Olomega there is a fairly dense subtropical forest around the borders of the lake. On the



Fig. 1. NEST AND SET OF FOUR EGGS OF MEXICAN GREBE, *Colymbus dominicus brachypterus*; LAKE OMEGA, SALVADOR, CENTRAL AMERICA; PHOTOGRAPHED AUGUST 8, 1925.

north side near the inlet there are considerable areas of marsh; to the south, hills a thousand feet or more in height rise fairly abruptly from the shore of the lake.

Colymbus dominicus brachypterus. Mexican Grebe. This grebe was found breeding on Lake Olomega on August 1 when a nest containing slightly incubated eggs was collected (figure 1). Nests were placed among the floating water plants

which grew to a height of not more than three inches above the water in a zone extending about one hundred yards off-shore. This floating vegetation also was the center of the breeding Jacanas of the lake (see A. H. Miller, Condor, xxxiii, 1931, pp. 32-33). On August 8 as our party entered the fringe of vegetation a number of Mexican Grebes flew ahead of the boat. On this visit seven nests were located in the immediate vicinity, all of which contained fresh eggs, some of the sets being incomplete. Either three or four eggs constituted a complete set, usually the latter.

The nests consisted of fresh, neat piles of the surrounding water plants. They were about one and a half feet in diameter, although only six to eight inches across at the surface of the water and consequently not readily visible. Not uncommonly the nests were surrounded by converging passageways through the surface vegetation, these passageways being formed by the birds as they swam to and from their nests. The eggs in the nest occasionally were left uncovered, but in most cases, probably when the incubating bird was not suddenly alarmed, they were covered in the customary grebe fashion by drawing part of the vegetation from the edge of the nest over them.

Adult birds were wary and, rather than dive upon the approach of danger, readily took to wing. It was thought that this method of escape might be made necessary by the thick growth of water plants beneath the surface. Nevertheless, the vegetation seemed to be no thicker than that through which I have frequently seen *Podilymbus* penetrate while escaping under water. This proneness to take wing was more pronounced than in any of the species of North American grebes with which I am acquainted. I can scarcely concur with Bent in his statement (U. S. Nat. Mus. Bull., 107, 1919, p. 38) that this form is hardly able to rise above the surface of the water and that it is poorly equipped for migratory flights. It seems at least to be on a par with other grebes as regards flight.

On August 19, grebes were laying second sets in old nests from which eggs had been taken on August 8. Three days later a male grebe was shot while carrying newly hatched young on its back. This adult did not dive when shot and as it was being retrieved, one of the young wriggled out from under its wing. A few feet away another young was found dead. The other adult had been swimming nearby but flew at the sound of the shot while the two young accompanying her dived, coming to the surface in a few seconds although exposing only the tops of their heads.

Phalacrocorax olivaceus mexicanus. Mexican Cormorant. Cormorants were abundant on Lake Olomega, and on our arrival on July 28 many brown immature birds were noted among the flocks of adults. Frequently the birds would group together on the surface of the water while following a school of fish, flapping and lunging as they swam and tumbled after their prey. This action is clearly the same as that described by Nelson (Condor, v, 1903, p. 141) and appears to be more prevalent than in *Phalacrocorax auritus auritus* which Lewis (The Natural History of the Double-crested Cormorant, 1929, Ri-Mi-Lou Books, Ottawa, Canada) recently has studied so fully.

On August 3, I visited the cormorant rookery on a wooded peninsula of one of the large islands in the lake. A small flock of Egrets and Little Blue Herons roosted in this rookery but did not appear to be nesting. On this day many of the cormorants were paired and were occupied with nest building. I saw no eggs in any of the accessible nests (see fig. 2). The trees on a large part of the peninsula, an area about three or four acres in size, were covered with the excrement of the

cormorants, which was gradually killing the trees and the undergrowth. As the trees died, they became heavily infested with termites and ants which hastened their falling and made climbing exceedingly difficult. The nests were placed from thirty to fifty feet from the ground, often in the branches of the crowns of the trees.

On August 18 a second visit to the colony revealed a four fold increase in the number of nests. Green trees were being occupied for the first time along the borders of the old colony. Sets of eggs were in the process of completion. Complete sets were either of three or four eggs. The nest sites in the tops of the trees apparently were the favorite locations, for these places were used first and consequently the sets here were completed and often slightly incubated. The nests built since August



Fig. 2, NESTING COLONY OF MEXICAN CORMORANT, *Phalacrocorax olivaceus mexicanus*; LAKE OLOMEGA, SALVADOR, CENTRAL AMERICA; PHOTOGRAPHED AUGUST 18, 1925.

3 were either in new trees or at lower levels in the older sections of the colony. In the oldest parts of the rookery several trees containing old nests were breaking down and, therefore, were deserted by the cormorants.

There was always a great amount of squabbling to be heard and the characteristic grunting of this species in the aggregate at times became almost deafening. The roar from the colony could be detected for several hundred yards as we approached across the water. Where nests were located near one another, the incubating cormorants reached across to strike at neighboring birds. They seemed restless while we were present and continually craned their necks about to watch us. Although bothered by our presence, they did not flush from their eggs until the trees in which they were located were partly climbed. The birds once having flushed re-

turned and sat near-by fluttering their gular pouches and holding their mouths open. Most of the adults possessed white nuptial plumes on the sides of the head and neck.

Even with the trees more crowded with nests than at an earlier date, no nests were seen lower than thirty feet above the ground. The crowns of a few trees were almost solid with nests. A typical nest was thirty inches across and half as deep, with a cup of not more than two or three inches. A few were considerably larger and deeper while others were little more than flat platforms. By the time sets were completed the nests became cemented by excrement into hard solid masses. Birds were seen flying about the colony with green twigs in their bills, and on August 3, when the place was first visited, many cormorants flushed from the ground among the bushes where they were gathering nest material. They did not fly directly to the nests from the ground but circled out over the lake gaining altitude and returning to the tree tops. Birds also were seen to pull off growing twigs while they were perched in the trees.

The usual forest bird life was absent among the trees of the colony. A few Black Vultures were present and a single hummingbird was noted in the bushes beneath. The cormorants were in full possession of the peninsula and indirectly had driven out many other bird species.

***Butorides virescens maculatus*.** Central American Green Heron. Green Herons were fairly abundant at Lake Olomega where several nests were found. Apparently the nesting season there was of considerable length as nearly fresh eggs and fully grown young were observed during the first half of August. One nest was discovered in a clump of mimosa which was growing on flat ground near the lake shore. This thorny thicket was nearly impenetrable to human beings. The nest was only five feet above the ground, being two feet below the bush tops. The construction was typical of the species as it is known in North America, being the usual scanty framework of twigs. The two eggs in the nest were left untouched for three days; with no further additions they were collected on August 1, at which time they were slightly incubated.

On July 31 three pairs of nesting Green Herons came to my attention on an island not more than seventy-five yards in length. One nest four feet above ground in a thorny bush was occupied by a six foot snake that was devouring the heron's eggs. The other two pairs had young nearly ready to leave the nest. The adults were exceedingly solicitous and came close to the nest as I examined their young. These two nests were situated about ten feet above the water's edge in small trees, much as I have been accustomed to finding nests of *B. v. anthonyi* in California.

***Ionornis martinica*.** Purple Gallinule. This gallinule always was found in the clumps of hyacinths growing along the north shore of Lake Olomega (see fig. 3). Although the birds were found in other types of cover, this seemed to be their particular habitat. Their concentration in the hyacinths gave the appearance of a colony, since three nests were found in one patch of this growth not more than fifty yards across and many other pairs were flushed from the same patch. On August 1, one of these nests contained three pipped eggs and one addled egg, a second nest contained a set of six fresh eggs, while a third held the remains of a partly destroyed set at a point where a breeding female had been collected three days earlier. The nests were above the level of the shallow water in open locations and were resting on the matted, rigid, thick stems of the hyacinths which grew to a height of twelve to eighteen inches. They were readily visible from above. Grasses brought from some distance were used in their construction, which material contrasted sharply with the dark green of the hyacinth stems.

On July 29 a breeding female was collected in the mixed immature plumage of the first year. Later, on August 19, fully grown juveniles were taken.

***Columba flavirostris flavirostris*.** Red-billed Pigeon. This species inhabited the small tracts of open woodland at Sonsonate where on July 14 a nest was found. The incubating bird flushed from the nest which contained a single egg and at once disappeared from sight in the woods. The nest site was in a row of trees along a fence between two pastures and at the edge of a small wood. The nest was placed on a flat branch twelve feet from the ground and was extremely crude. It seemed to be even more frail than the nests of the Band-tailed Pigeon which I have examined,

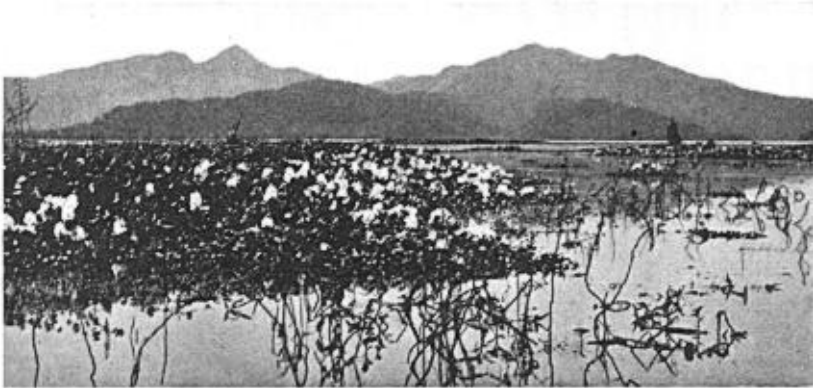


Fig. 3. VIEW SOUTHWARD ACROSS LAKE OLOMEGA, SALVADOR, SHOWING GROWTH OF HYACINTHS OCCUPIED BY PURPLE GALLINULES, *Ionornis martinica*; PHOTOGRAPHED AUGUST 8, 1925.

the egg being plainly visible from below. On July 1 there was still only the one egg in the nest. After collecting the egg, a count of the number of sticks used in the nest yielded a total of forty-five.

***Columbigallina passerina pallescens*.** Mexican Ground Dove. This bird was common about the fields at Sonsonate and in the more open tracts of forest and grassland at Lake Olomega. Four nests were found at Sonsonate, all of which were located from three to five feet up in bushes on hillsides in fairly open pasture lands. In two instances pairs engaged either in nest building or laying were being followed by fully grown juvenal birds which begged for food from the adults. On one occasion one of these juveniles was shot to make certain of its age. The usual two white eggs always constituted a set.

Several nests were found at Lake Olomega in the palmetto clumps which grew in the open woods near the edge of the lake. The nests in some instances were placed as high as eight feet above ground.

***Scardafella inca*.** Inca Dove. This species, although common at both Sonsonate and Olomega, did not appear to be nesting in any such numbers as were the Ground Doves. One nest only was found on July 21 at Sonsonate. It was placed in a small climbing vine in a ten-foot bush which stood on a hillside scattered with bushes four feet or more in height. The nest was four feet from the ground and consisted of a small mat of grass with a few twigs, indistinguishable in its construction from nests of the Ground Doves. It contained two fresh eggs. The incubating bird remained on the nest until I approached within two feet.

Leptotila verreauxi bangsi. Bangs White-fronted Dove. White-fronted Doves were noted occasionally in the dense timber at Sonsonate, but were more common in the jungle along the south shore of Lake Olomega. One nest was found by Loye Miller at the latter station. It was placed four feet above ground in some brush and vines in the deep woods on a hillside near the lake. The trees overhead were at least sixty feet tall. Upon leaving the nest the dove flew up into the tree tops. The nest was composed of sticks and the tendrils of vines and was as frail as nests of Mourning Doves. The two eggs were about one-third incubated on July 28 and unlike the eggs of most of the other doves and pigeons were a distinct light tan in color rather than white.

Geococcyx velox. Lesser Road-runner. On a small peak southeast of Lake Olomega, Lesser Road-runners were found breeding. At an elevation of 1600 feet the dense tropical forests of the lowlands give way to open grassy hillsides with scattered trees not more than twenty feet in height. The road-runners occupied these grassy areas on the steep hillsides. The first nest was found by Stirton on August 4 and at the time contained one egg. On August 7 this nest had only two eggs which were collected. The incubating bird did not flush from the nest until I touched the tip of its bill, in this respect being similar to the California Road-runner. When disturbed it flew seventy-five feet horizontally before dropping to the ground and disappearing in the tall grass. In fifteen minutes a road-runner appeared in the grass at the point where the bird had been seen formerly. Presumably it was the same individual. When it was collected, it proved to be a male with incubating patches on the belly. No other bird appeared during the next two hours while I waited at the nest. Possibly some accident had befallen the female. This nest was situated six feet above ground in a small bushy tree and was plainly visible from a distance of fifty yards. The material making up the nest was finer than that ordinarily employed by *Geococcyx californianus* and the entire structure was more compact and stronger, although smaller, than the nests of the more northern species. Several old nests of similar construction were seen in adjacent trees.

A second occupied nest containing two eggs was found on August 12 in a similar location in a low bushy tree. This nest was made of even finer material than the first, although not as compactly built. The incubating bird was shot on the nest and proved to be a female with small ova and large incubating patches. The eggs were about one-third incubated. A mate was not seen although no systematic search was made to find him. The stomach of the female was filled with grasshoppers.

Although the actions of the Lesser Road-runner while running and while in flight are very similar to those of the California species, the fact that these Central American birds appear not to lay their eggs at protracted intervals indicates a difference in breeding behavior. The second set of two eggs was, without doubt, complete and the first set also may have been complete. In *Geococcyx californianus* four to eight or more eggs normally are laid, but, as in some other cuckoos, they are deposited usually at intervals of several days so that young of various ages as well as eggs occur at one time in any given nest. Often the eggs of *californianus* are laid in groups of two, the eggs of each group being deposited on successive days and not followed by more eggs until three to five days have elapsed. May it not be that several of the sets of two eggs as laid by *G. velox* have become crowded, so to speak, into one protracted laying period in the related species *californianus* which because of its more northern habitat is limited to a shorter breeding season. According to Bancroft (Condor, xxxii, 1930, p. 27) *californianus* in Lower California may lay

complete sets of two eggs as does *velox*. Possibly there is to be seen in *californianus* a rather unusual intermediate step between the small sets characteristic of the tropics and the larger sets of the temperate regions, or, these peculiarities may be simply another manifestation of the instability in breeding habits for which cuckoos are notorious. That *G. velox* at times lays more than two eggs is shown by Owen's record (*Ibis*, 1861, p. 67) of a set of four taken at San Geronimo in the adjacent state of Guatemala, which set, it is to be noted, was taken on April 3, over four months earlier than the sets found in Salvador.

Crotophaga sulcirostris sulcirostris. Groove-billed Ani. Anis were perhaps the most abundant of the birds in the fields at Sonsonate and they were common in open localities about Lake Olomega. A number of nests were found shortly after our arrival at the former station, some of which contained eggs. The nests are bulky, loose masses of twigs, roots and thorns with a layer of green leaves lining a fairly deep cup. These leaves are always fresh on the surface but dead beneath if the nest is of any appreciable age. It appears that the birds replace the lining of the nests daily while the sets are being completed. I did not encounter any nests with heavily incubated eggs or young, but I believe that this replacement of the lining continues throughout the period of incubation, certainly for the first few days after the completion of the set.

The eggs, in accordance with the descriptions of other writers, are thick shelled and covered with a white chalky coating which obscures a uniform dull blue-green pigment in the harder parts of the shell. The chalky surface is easily scratched. Eggs even in incomplete sets become scratched by the birds in a more or less equatorial direction suggesting that the scratching results from the actions of the birds in re-lining the nests with leaves. Incubated eggs become heavily scratched, the chalky layer being to a considerable extent removed. Seemingly complete sets of seven, nine, eleven, and thirteen eggs were taken. Several nests were watched from the time there was one egg until there were nine, or in one case eleven, eggs. The eggs were deposited regularly at one day intervals and there was no certain indication in any of the sets, of two females contributing to the same nest as has been claimed by other observers. My findings, however, do not prove conclusively that community nests may not exist, at least occasionally. Incubation is uniform within a set and, correspondingly, birds were found to be incubating regularly only after the sets were completed. In the set of thirteen the eggs were resting in three layers in the necessarily ample cup of the nest.

Nest sites were from two feet to twenty-five feet above ground in almost any kind of bush or tree. Usually they were located between six and twelve feet above ground in thorny tangles or close twiggery. One nest was found, however, in an open crotch of a fan of a royal palm. Adult birds are not much in evidence around nests which are being built or around sets of incomplete eggs. When flushed from sets of complete eggs, they may approach within five feet of the intruder and utter their feeble, squeaking notes of protest.

Synallaxis erythrothorax pacifica. Pacific Rufous-breasted Synallaxis. These "oven birds" were found in the open forests near the lake shore at Olomega, especially in the brushy tangles along the sloughs that ran through the woods. On August 14 the first nest was found. It was located in a clump of bushes five feet above ground which periodically was flooded by the river. Its general appearance was that of the nests of wood rats (*Neotoma*). Within the rough exterior was a well formed, arched-over basket of heavy sticks which held the nest proper. The top of the entire

structure was draped with heavy irregular masses of brush and thorns. Some of the sticks in the structure were more than one-fourth of an inch in diameter and it is difficult to imagine how these small birds, which are the size of a song sparrow, could carry and arrange such large objects. This nest was nearly spherical and about two and one-half feet in diameter. Other nests were of about the same size but not always as perfectly round.

On August 21 the first nest was revisited and found to contain one egg. The top of the nest had been still further covered by a layer of broad bark chips. The lining in the nest was very poor, the egg resting almost directly on large twigs. On August 23 the lining was slightly improved but the nest contained only two eggs which were collected even though it was not certain that the set was complete. The eggs are a deep blue and unspotted, reminding one of the eggs of the Wren-tit, *Chamaea*.

One other completed nest, which contained no eggs up until the time of our departure, had a rather elaborate lining of shredded bark and snake or lizard skins. This nest was eighteen feet above the ground in a tree at the edge of a slough. Both birds were seen running over the top of the nest as I climbed the tree in which it was placed. This pair stayed near me as I inspected their nest and made mild protest in the form of soft clear whistles. Full grown juveniles were collected during August, but no nests containing young were found.

Heleodytes capistratus capistratus. Hooded Cactus Wren. Many old nests of the very common cactus wrens were found, but the nesting season seemed to be almost entirely past. The nests were most often placed in thorn trees which made them practically inaccessible. Several nests which the wrens apparently were using regularly as roosting places were watched for ten days or more, no building or egg laying being in progress. One nest with a single young bird nearly fully feathered was found in a palmetto clump at Lake Olomega. Great numbers of juvenal birds were out of the nest, some of which were still being fed by the parents.

Thryophilus pleurostictus lateralis. Salvador Banded Wren. This wren was found only in the forests at Olomega where on July 31 a bird was watched carrying nesting material to a well formed globular nest about twenty feet up in a tree. Two females collected on this date were laying. Several other nests were found on August 10. It was noted that all of the nests found were either purposefully or by chance placed near wasp nests. Old nests that I examined were flask shaped, with the neck curved laterally and downward. They were placed in crotches with the neck or passageway hanging over a limb. One nest found on August 10 contained a single well grown young and one egg which was pure white.

Turdus grayi megas. Central American Gray Thrush. Gray's Thrush or Robin was met with at Sonsonate where it inhabited the open tracts of timber. These thrushes did not frequent the ground as much as *Turdus migratorius*. Their nests were mud cups lined with grass or roots as is customary in this genus. Four nests were found, three of which were near the trunks of trees in the forest. The fourth nest was in a royal palm tree standing in a cultivated field. This last nest was the only one occupied and contained one young and one egg, which latter was heavily spotted with brown, very unlike *T. migratorius* but similar to the eggs of some of the other southern species of the genus. Fully grown young with spotted breasts were shot on July 19 and the nesting season seemed to be about over although many male robins were in full song.

Chamaethlypis poliocephala caninucha. Central American Ground-chat. In the pastures at Sonsonate this little known yellow-throat-like warbler was a fairly common breeding bird. On July 13 a female was flushed from a nest in a small clump of bunch grass. The nest and three well incubated eggs were very similar to those of *Geothlypis*. The nest was composed of the blades of flat sedges and was situated one and one-half feet up in the three-foot clump; it was well hidden and supported by the dense base of the clump. A second nest containing three fresh eggs was found July 16 in a similar location. This nest contained a few cow hairs in the lining which were not present in the first nest. Still another nest was found five days later with four pipped eggs. Thus, the size of the sets appears to be but slightly smaller than in *Geothlypis trichas* to the north. W. DeW. Miller (Auk, xxxvi, 1919, pp. 290-291) has argued for the close relationship of *Chamaethlypis* with *Geothlypis* rather than with *Icteria* and recounts his experiences with these birds in Nicaragua. My observations regarding nests, eggs, and song confirm his views. The birds certainly do not sing or act like chats. Each song is a moderately short, pleasing sequence of notes with none of the variety and few of the qualities to be heard in the chat's song. It is similar to the songs of the Tule Yellow-throat although always distinguishable from them. The ground-chats inhabited low bushes and grass clumps about the edges of the meadows and pastures.

Agelaius phoeniceus grinnelli. Grinnell Red-winged Blackbird. Red-wings were seen by us only at Lake Olomega and there chiefly along the north edge of the lake. Near the hyacinthus where the gallinules were nesting there were growths of reeds and bushes which contained several Red-wings' nests. Van Rossem found one set of three pipped eggs on July 29. Most of the blackbirds had finished nesting, and young and old birds were gathering in flocks in the sloughs and meadows back from the lake shore.

Tanagra cana diaconus. Central American Blue Tanager. Several pairs of these blue tanagers were living about the government houses at our Sonsonate station. On July 10 a pair was seen making repeated excursions to a large royal palm tree. The next day the beginnings of their nest were inspected in this tree; at the time, it consisted of only a small pad of shredded palm bark. It was located twenty-five feet above ground on a nearly horizontal surface of a side branch and was fully exposed to the sun and rain. On July 15 the nest was completed; it was a soft homogeneous cup of palm bark with a little hair intermixed. It contained one egg on this date. By July 18 the set was complete with only two eggs. The eggs were of dull white ground color heavily and fairly evenly spotted with moderately sized dark brown spots.

Guiraca caerulea lazula. Mexican Blue Grosbeak. Blue Grosbeaks inhabited cut-over forest areas and the margins of cultivated fields at both Sonsonate and Lake Olomega. A female which had laid only a few days previously was collected at Sonsonate on July 23.

At Olomega on a cut-over hillside grown up to a height of four to six feet a pair was watched for some time as they sat in the bush tops giving their alarm notes. Finally the female disappeared and shortly was flushed as I proceeded to the point where she was last seen. The nest was well in view near the top of a tall clump of bushes and was composed largely of grass. The cup of the nest was deep and the outside bound together with spider webs forming a compact, strong structure. In the details of construction it was not distinguishable from nests of the race *salicarius* found in California. The nest contained a set of three slightly incubated eggs, a

number often laid by California birds. In fact, there was considerable similarity even between the fairly dense green bushes inhabited by this species in Salvador and the river-side bushes in damp situations that *salicarius* frequents.

Saltator atriceps atriceps. Black-headed Saltator. A nest of this species was found in a mass of vines hanging from a tree in a cañon bottom near Sonsonate. It was eleven feet above ground, well cupped and constructed of tendrils of the vines. The set of two eggs was complete on July 16, when the eggs were one-third incubated. The adults were timid, the female flushing at a distance of twenty feet. On July 15 a Black-headed Saltator's nest was noted which contained large young. The eggs are a pale greenish blue with wreaths of bold black scrawls about the large ends. These saltators always were found in fairly dense, brushy timber, usually in cañons or river bottoms.

Sporophila minuta parva. Richardson Seedeater. This seedeater was found only at Lake Olomega. It was particularly abundant in the clumps of mimosa along the north shore of the lake and on August 4, breeding birds were taken in this region. Several males in breeding condition were in immature plumage resembling that of females. On August 22 a nest with two fresh eggs was collected. The nest was two and a half feet up in an open mimosa bush. It was a small, coarsely woven cup of grass very different from the nests of the Blue-black Grassquit next to be described.

Volatinia jacarini atronitens. Blue-black Grassquit. These small black fringillids were extremely abundant in the three-foot grass in the fields of the Sonsonate district. The males were in full song which consisted, however, of nothing more than a grasshopper-like buzz with an explosive terminal note. The song was given as they sprang into the air from the tops of the grass. The explosive note came as they dropped back to their original perches from a height of about two feet. Each pair appeared to be very local, inhabiting an area which seemed to be no larger than fifty yards in diameter. On July 16 the first grassquit's nest was found; it contained one egg. Two other nests were located during the following two days, one with a set of three eggs, the other empty but new. The nests were neat, thin, wiry baskets of harsh grass and plant fibers which were remarkably rigid even though the bottoms and sides could be seen through. The incubating birds flushed almost under foot as one passed through the grass.

Two sets of eggs numbered three each, and three fully feathered young were found about July 20. These young were heavily infested with some sort of fly larvae which were growing in large skin sores about the heads of the juveniles.

Aimophila ruficauda ruficauda. Russet-tailed Ground Sparrow. This aimophila, which somewhat resembles a White-crowned Sparrow, was an inhabitant of the brush along the stream courses at Sonsonate. Fully grown juveniles were collected July 16, whereas a nest with two fresh eggs was discovered July 19. The set was complete on July 21 when it contained three pale blue, immaculate eggs. The nest site was a crotch five feet from the ground in dense bushes six feet high near the stream and also near a small grassy meadow. The nest was composed chiefly of sticks and hair and was deeply cupped and neatly built.

Museum of Vertebrate Zoology, Berkeley, California, May 6, 1931.