

NOTES ON A COLLECTION OF BIRDS' NESTS AND EGGS FROM
SOUTHERN ARIZONA TERRITORY.

By CAPT. CHAS. E. BENDIRE, U. S. A.

This collection was made by Lieut. Harry C. Benson, Fourth Cavalry, U. S. Army, near Fort Huachuca, Ariz., and generously donated by him to the National Museum.

Fort Huachuca is situated in the southeastern portion of the Territory, about 18 miles from the Mexican boundary-line, and about 25 miles southwest from Tombstone, in latitude $31^{\circ} 30'$ and longitude $110^{\circ} 20'$. The collection contains, besides a number of nests and eggs of fairly well-known species not herein enumerated but still very desirable, the following species which are new to the Museum collection, or else only very poorly represented by specimens, and about which but very little is known.

No. 312.* COLUMBA FASCIATA (SAY.)

THE BAND-TAILED PIGEON.

This pigeon is fairly common in the vicinity of Fort Huachuca during the summer months, arriving about June 1 to 10 in large flocks, frequenting the oak groves along the foot-hills and mountain sides. It feeds on a berry about the size of a large pea, growing on a hardwood tree not known to Lieutenant Benson, till the acorns are of suitable size, about July 15, when it feeds almost exclusively on these.

It commences nesting about the beginning of July and continues to lay till late in October; it does not breed in communities, however, there being but one or two nests to the acre. The nests are placed in live-oak trees (*Quercus undulata*?) from 15 to 30 feet from the ground. The nest is simply a slight platform of twigs on which the egg is laid. Eggs were taken from July 13 to September 25, 1885, inclusive.

But a single egg is laid at a clutch, in that vicinity at least. This is elliptical-ovate in shape, abruptly pointed at the smaller end; pure white in color, slightly glossy, and the five specimens sent measure 1.58 by 1.10, 1.62 by 1.10, 1.62 by 1.13, 1.68 by 1.04, 1.69 by 1.09 inches.

No. 340. BUTEO ABBREVIATUS CAB.

THE ZONE-TAILED HAWK.

This handsome species has been observed on several occasions in the vicinity of Fort Huachuca, and two specimens of this bird as well as the egg, have been sent on by Lieutenant Benson and are now in the

* American Ornithologists' Union Check List.

National Museum collection. They seem to be a shy bird, frequenting the base of the mountains, distant from human habitations. Lieutenant Benson writes that he has seen but a single pair in any locality within 5 or 10 miles of each other. The nests, of which he has observed three, are large and bulky, composed of sticks, and are lined with a few leaves only. Two of these were placed in sycamore trees and one in a cotton-wood tree, about 40 feet from the ground. Two of the nests contained young when found, the remaining one but a single egg, slightly incubated. This nest was found May 6, 1886, in a sycamore tree in a deep arroyo, near the base of the Huachuca Mountains. The parents were shot. The egg is ovate in shape, ground-color greenish white, and this is sparsely covered with small spots and blotches varying from burnt-umber to tawny-olive, and these are principally distributed about the center of the egg. It measures 2.33 by 1.84 inches, and is large for the size of the bird. This hawk, I think, is only a summer resident of Arizona Territory, not having been observed later than the month of November by Lieutenant Benson.

NO. 359. *FALCO FUSCO CÆRULESCENS* VIEILL.

THE APLOMATO FALCON.

This handsome little Falcon is exceedingly shy and difficult to approach, but is fairly common in the vicinity of Fort Huachuca. It often alights on the ground when hunted. Lieutenant Benson does not consider it resident throughout the year, but writes that he has observed it as late as January, however. It seems to prefer the plains covered here and there with low mesquite trees, yuccas, and cacti, to the more mountainous regions. Five nests were taken by Lieutenant Benson during the spring of 1887, all of them placed in low mesquite trees, from 7 to 15 feet from the ground. The nests were apparently old White-necked Raven's nests *Corvus cryptoleucus* COUCH, used without any repairs being made to them whatever.

The first nest, found April 25, 1887, contained three young birds, which were raised and became quite tame. The second nest was taken April 28, and contained three fresh eggs. These measure 1.82 by 1.38, 1.78 by 1.38, and 1.72 by 1.40 inches.

Another nest, found May 5, contained also three eggs, two with large embryos, the third addled. These eggs measure 1.80 by 1.32, 1.76 by 1.31, and 1.70 by 1.36 inches. The fourth nest, found May 14, contained two fresh eggs measuring 1.80 by 1.35, and 1.71 by 1.33 inches.

A fifth nest, found on the same day, contained likewise two fresh eggs. These are not in the collection, and no measurements can be given of them. The eggs of this Falcon are elliptical-ovate in shape. The ground-color appears to be a dirty yellowish white, and this is thickly covered with reddish and chestnut-brown blotches and spots of various sizes, so as to almost completely obscure the ground-color. In one of the sets these

spots are very fine, of a pale delicate reddish buff or fawn color, giving these eggs quite a different appearance from the others. Their variation in color, judging from the limited number of specimens in the collection, seems to be fully as great as that in any of the *Falconide*.

Within the limits of the United States this species has heretofore been found breeding only along the southern border of Texas, where Dr. J. C. Merrill, assistant surgeon, U. S. Army, took two nests in the vicinity of Fort Brown, both containing three eggs also. These are described in the Proceedings of the U. S. National Museum, 1878, pages 152 and 153. Both were placed in yuccas.

NO. 342. BUTEO SWAINSONI BONAP.

SWAINSON'S HAWK.

This species is by far the commonest hawk in the vicinity of Fort Huachuca, and a resident throughout the year. Lieutenant Benson found not less than forty-one of their nests containing eggs between May 14 and June 18, 1887. These were all placed in low mesquite trees and bushes, from 3 to 15 feet from the ground. Only six of these nests contained three eggs each, twenty-one nests contained two eggs, the remaining fourteen but a single egg. Many of the latter were undoubtedly laid by birds that had been robbed before, especially where the same nest was used again, which was frequently the case, and a few were uncompleted sets. Two eggs is the usual number laid by these birds, in Arizona at least. The nests were bulky platforms, composed of sticks of various sizes, with but a slight depression in the center, and sparingly lined with a few bunches of dried grass. Lieutenant Benson writes me, that after the Arkansas Kingbirds (*Tyrannus verticalis* SAY) began to build he invariably found one of their nests in any tree that contained a Swainson's Hawk's nest. In one case, a pair of these birds had placed their nests directly under and but 8 or 9 inches from that of the hawk. A pair of White-rumped Shrikes (*Lanius ludovicianus excubitoroides* SWAINSON.) built also immediately below one of these hawks' nests.

When not closely looked at, many of the eggs of Swainson's Hawk appear to be unspotted, but on careful examination there are in reality but very few that are immaculate. Out of a series of sixty-nine specimens sent by Lieutenant Benson there are but three unspotted ones. The ground-color of these eggs when fresh, is a very distinct greenish white, which in course of time fades into a dull yellowish white, even if the eggs are not exposed to light. They are more or less heavily spotted and blotched, varying in color from burnt-umber to tawny olive, and in some of the lighter colored specimens from a French gray to a drab-gray. Their shape ranges from a short ovate to an oval, and they average about 2.23 by 1.71 inches in length and width. The largest egg in the series taken by Lieutenant Benson measures 2.37 by 1.76 inches, the smallest 1.95 by 1.60 inches.

NO. 482. APHELOCOMA SIEBERII ARIZONÆ RIDG.

THE ARIZONA JAY.

This Jay is a common resident throughout the year in the vicinity of Fort Huachuca, frequenting the oak groves near the base of the mountains, as well as the banks of the usually dry water-courses, but where there is always considerable shrubbery to be found, notwithstanding. They are more or less gregarious at all times, and noisy as well. In their flight they resemble hawks swooping for prey, rising high in the air, closing their wings, and darting suddenly down, then up again, repeating the same maneuver again and again. They feed on insects as well as on acorns. Their nests, about Fort Huachuca at least, where Lieutenant Benson took some thirty during the months of April and May, 1887, were all placed in oak trees from 12 to 30 feet from the ground, usually about 15 feet high.

The nest and eggs of this species were first discovered by Mr. F. Stephens near Fort Bayard, N. Mex., on April 29, 1876, and an egg of this set is now in the Museum collection. Since then two or three more nests and eggs were taken by W. E. D. Scott in the Santa Catalina Mountains, in Arizona, and described by him in the Auk, Vol. III, Jan., 1886, pages 81 and 82.

A nest of this species now before me, taken by Lieutenant Benson April 6, 1887, differs somewhat from those described by Mr. Scott. It is outwardly composed of small sticks and twigs. Next comes a layer of fine rootlets well woven together. This mass is over half an inch in thickness, and finally the inner nest is lined with a liberal supply of horsehair. It is a well-constructed nest; measures about 10 inches across outwardly by 4 inches in depth. The inner diameter of the nest is about $4\frac{1}{2}$ inches by 2 inches in depth.

The eggs of this Jay differ from all the known eggs of this family found breeding within the United States in being perfectly unspotted. It has been stated that these eggs were almost indistinguishable from those of the Robin, *Merula migratoria* (LINN), and the Crissal Thrasher, *Harporhynchus crissalis* (HENRY), but on carefully comparing the series of eggs of the three species in question, now in the Museum collection, I find that this is not the case. This series numbers as follows:

	Specimens.
Eggs of <i>Merula migratoria</i> LINN	102
Eggs of <i>Merula migratoria propinqua</i> RIDG	62
Eggs of <i>Harporhynchus crissalis</i> HENRY	29
Eggs of <i>Aphelocoma sieberii arizonæ</i> RIDG	136

I find that aside from the almost uniformly larger size of the eggs of this Jay, their color is radically different from that found in the eggs of the other two species mentioned. Glauous-green comes nearest to expressing it. This term is taken from R. Ridgway's work entitled "A

Nomenclature of Colors, etc." published by Little, Brown & Co., Boston, 1886. The color of a Robin's egg I would call greenish blue, and that of the egg of the Crissal Thrasher a pale clay-blue.

If the eggs of the three species are placed side by side, as was done by me, the difference becomes at once quite apparent and perceptible. The largest egg in the series measures 1.38 by .87 inches, the smallest 1.06 by .85; the average is about 1.23 by .84 inches. They vary in shape from ovate to elongate-ovate. The number of eggs laid by these birds varies from four to seven. Four to a set seems to be the most common number found. In thirty-three sets there were seventeen containing four eggs, seven sets of five, and one each of six and seven eggs, respectively. The remainder were uncompleted sets. The first eggs were found on April 6, the last on May 10, 1887; by this time most of the nests examined contained young birds.

NO. 487. CORVUS CRYPTOLEUCUS COUCH.

THE WHITE-NECKED RAVEN.

This species is the most abundant of the *Corvidæ* found in Arizona, and is a resident throughout the year. It is not at all shy. Lieutenant Benson writes me that numbers of them are seen almost daily about the officers' and men's quarters at Fort Huachuca, and that they are so tame that they will often let one pass within 20 feet of them without flying off. I have personally shot numbers of them in my camp on Rillito Creek in the winter of 1872, where I found them quite common, but they did not breed in that vicinity to any great extent. After riding many miles and patient searching, I succeeded in finding two of their nests with eggs, one on May 6, the other on June 5, 1872. Both of these nests were placed in the tops of oak trees, from 15 to 20 feet from the ground, in the foot-hills of the Santa Catarina and Rincon Mountains, respectively.

Lieutenant Benson was more fortunate in finding the nests of this species, taking over fifty sets of their eggs between May 8 and June 18 of the present year. He states in one of his letters to me that the White-necked Raven in the vicinity of Fort Huachuca usually builds in mesquite bushes, from 7 to 15 feet from the ground, placing the nests in the top. Occasionally a pair will build on top of a yucca plant. The nests are mostly found on the more open plains not far from the edge of the thicker chaparral, and usually within a mile of this more bushy tract. The nests are constructed of sticks of various sizes; the cavity is rather deep, and this is lined with hair of cattle and rabbits, and frequently with pieces of the hide of these animals.

They are extremely filthy, and smell horribly. Old nests are repaired from year to year, some of them being, as Lieutenant Benson expresses it, seven or eight stories high, showing use for as many years. The series of eggs of this Raven is one of the finest and most complete in the National

Museum collection, containing nearly three hundred specimens, almost all obtained from Lieutenant Benson. Their ground-color ranges from a light green to a pale grayish green, and this is more or less covered with numerous streaks, blotches, and spots of sepia-brown and French-gray, as well as in some instances of dark moss-green and deep grayish olive markings. One peculiar and constant feature of these eggs is, their resemblance in the pattern of the less pronounced markings (the lighter colored ones) to those found in the eggs of the genus *Myiarchus*, in this, that these markings run lengthways with the egg, or from pole to pole, a feature not found by me in the eggs of the common Crow, *Corvus americanus* AUD., and only very rarely in those of the Raven, *Corvus corax sinuatus* WAGL., the eggs of both of these species being also represented by excellent series in the Museum collection. The general average of the eggs of the White-necked Raven is much lighter colored than the eggs of the above-mentioned species; one set, indeed, is almost unspotted, and usually there is one egg in each set which is much lighter colored generally, than the balance. All the eggs of this species can readily be distinguished from those of the balance of the *Corvidæ* which breed within the limits of the United States. The usual shape of these eggs is an elongated ovate, and there is a great variation in their size.

Three of the largest measure as follows: 1.92 by 1.33, 1.96 by 1.25, and 2 by 1.24 inches.

Three of the smallest measure 1.57 by 1.17, 1.62 by 1.08, and 1.52 by 1.09 inches. Their average size is about 1.78 inches in length by 1.16 in width.

From four to seven eggs are laid to a set, six being the most common number found, and presumably but one brood is raised a year.

NO. 632a. VIREO HUTTONI STEPHENSI BREWSTER.

STEPHENS' VIREO.

This new race was first described by Mr. William Brewster, in the Bulletin of the Nuttall Ornithological Club, Vol. VII, July, 1882, pages 142 and 143, from specimens collected by Mr. F. Stephens in the Chiricahua and Santa Rita Mountains, Arizona. It is stated that he also took the nest and eggs of this race near Fort Bayard, N. Mex., in 1876, but I am unable to find any description of the same in any of the ornithological publications to which I have access.

A nest of this bird containing three fresh eggs was taken by Lieutenant Benson on June 21, 1887, near Fort Huachuca, Ariz., and is now in the National Museum collection. The nest was attached to the fork of a small twig of some species of buttonwood, probably *Platanus wrightii*, growing in a cañon of the Huachuca Mountains. The nest was not well concealed. The birds are common in such localities and very tame. It is very peculiar looking, being outwardly exclusively composed of what I take to be a fine yellowish buff plant-down, with

which some similar colored grass-tops are incorporated, giving the nest a uniform light color, not unlike a very fine cup-shaped sponge. It is lined with the extreme tops of grasses, also of a golden yellow tint, and measures externally $2\frac{3}{4}$ inches in width by $2\frac{1}{2}$ inches in depth. The inner diameter is 2 inches by $1\frac{3}{4}$ inches.

The material of which this nest is composed is totally different from anything I have seen used in the nests of other species of this family coming under my observation, excepting the inner lining of the nest.

The three eggs are ovate in shape, pure white in color, with little gloss, sparsely spotted about the larger end with fine dots of a dark amber-brown and brownish red color, and measure .72 by .53, .70 by .52, and .69 by .52 inch.

NO. 744. PSALTRIPARUS PLUMBEUS BAIRD.

THE LEAD-COLORED BUSH-TIT.

Although this little Bushtit is a widely distributed species throughout the West, and has been known to naturalists for more than thirty years, nothing whatever has been placed on record respecting its nesting habits. The credit for the discovery of their nests and eggs belongs to Lieutenant Benson, who found them breeding abundantly in the vicinity of Fort Huachuca during the month of April, 1887. Their favorite abiding places seemed to be along dry water-courses, up narrow ravines, running into the mountains and on the flats, covered with scrub-oak, between the hill-sides; he says that they are exceedingly tame, perfectly unconscious of danger, and will work on their nests with a person not 10 feet away from them. They are one of the first birds to arrive in the spring, but are not resident throughout the year.

The nests, of which a number are before me, are all more or less gourd-like in form; that is, considerably narrower near the top than around the bottom. They are not strictly pensile, but are woven into and supported by small twigs and branches of the oak bushes (*Quercus undulata?*) in which they are built. Several nests were placed in bunches of a species of mistletoe (probably *Phoredendron flavescens*), and in these cases the nests are supported and placed directly in the forks of this plant. They vary in length from 7 to $9\frac{1}{2}$ inches and from 4 to 5 inches in diameter. The entrance to the nest is on the side, near the top of the structure, about three-quarters of an inch in diameter. The inner cavity is from 4 to 5 inches deep, and about $1\frac{1}{2}$ inches in diameter. The nests are outwardly composed of the dried, curled-up leaves of the white sage, plant-down of a pinkish tint, spider webs, small bits of mosses and lichens, and are thickly lined inside with soft, small feathers. The walls of the nest increase in thickness from top to bottom, so that while near the top they are not over three-eighths of an inch through, near the bottom they are fully $1\frac{1}{2}$ inches thick. The nests are placed in about equal proportions in low oak bushes, from 5 to 7 feet from the ground,

generally well concealed by the foliage, or in bunches of mistletoe in oak or mesquite trees, from 15 to 20 feet high. Some of these birds commenced building in the first week of March, but no eggs were discovered in any of the nests till fully a month later, the first ones being taken April 8, 1887.

The number of eggs to a set varies from four to six, five being the most common number found. Probably two or more broods are raised during the season. The eggs are pure white in color, ovate in shape, and measure .56 by .42 inches for the largest to .49 by .40 for the smallest. Their average size is .53 by .40 inch.

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