

**Article XVI.—SUPPLEMENTARY NOTES ON BIRDS COLLECTED IN THE SANTA MARTA DISTRICT, COLOMBIA, BY HERBERT H. SMITH, WITH DESCRIPTIONS OF NESTS AND EGGS.**

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Five years ago, I published a list of the birds collected by Mr. Herbert H. Smith in the Santa Marta District of Colombia,<sup>1</sup> numbering 388 species. Later another shipment of birds was received from Mr. Smith, from the same region, containing about 350 additional bird skins and a large collection of nests and eggs, representing about 50 species. This additional material includes several species not previously represented in Mr. Smith's collections from Santa Marta, and adds seven not previously recorded from the district. There are also additional specimens of a number of species previously represented by single or very few specimens. The additional species, with a few corrections of previous identifications, are given below.

A list of the principal localities, with their location and approximate altitudes, was given in my former list of the birds (*l.c.*, pp. 123, 124) and more fully described by Mr. Smith in the introduction to my 'Report on Mammals from the District of Santa Marta' (this Bulletin, Vol. XX, 1904, pp. 413, 414).

The species now added, and the elimination of two wrongly included, raise the total number of species of birds recorded from the Santa Marta district to 392. Those here added are indicated by an asterisk (\*) prefixed to the number.

ADDITIONS AND CORRECTIONS.

\*<sub>7</sub> *bis*. **Hydranassa tricolor tricolor** (Müll.). One specimen, immature, Don Diego, May 9.

9. **Butorides virescens** (Linn.). One specimen, Bonda, Oct. 20. Also one specimen in the previous collections.

\*<sub>44</sub> *bis*. **Catharista urubu brasiliensis** (Bonap.). One specimen, Bonda, Feb. 24.

The name *urubu* (*Vultur urubu* Vieillot, Ois. d'Amér. Sept., p. 23, pl. ii, 1807) may properly be restricted to the United States form in

<sup>1</sup> This Bulletin, Vol. XIII, Aug. 25, 1900, pp 117-184.

view of the much smaller size of the South American bird, named *brasiliensis* by Bonaparte (Consp., I, 1850, p. 9). About the same amount of difference is found between the northern and southern forms of the Black Vulture as is found between the northern and southern forms of the Turkey Vulture, which latter have become recently recognized by several American writers as, respectively, *Cathartes aura aura* and *Cathartes aura septentrionalis*.

141. **Glaucis hirsuta** (Gmelin). One specimen, with nest, Don Diego, May 15. Previously recorded from Santa Marta by Bangs (cf. Allen, *l.c.*, p. 142).

\*101 bis. **Ceryle inda** (Linn.). One specimen, female, Don Diego, May 3, 1899.

121. **Phaëthornis anthophilus** (Bourc. & Muls.). One specimen, female, Don Diego, May 8. Not previously received, but recorded from Santa Marta by Salvin and Godman, and by Bangs (cf. Allen, *l.c.*, p. 138).

145. **Tyrannus tyrannus** (Linn.). Eight specimens, Bonda and Buritaca, September 19 and 22, 1899. Not previously received, but recorded by Salvin and Godman from Santa Marta (cf. Allen, *l.c.*, p. 142).

144. **Tyrannus griseus** (Vieill.). A second specimen, Bonda, October 14, 1899.

\*154. **Empidonax traillii** (Aud.). Fourteen specimens, Buritaca, September 19; Bonda, September 20-28, October 3-16; Cantilito, October 14.

These birds are all migrants, and all are referable to *E. traillii*.

A re-examination of six specimens previously sent, and recorded as *E. ridgwayi* (*l.c.*, p. 144) prove to be also referable to *E. traillii*, which name should replace *E. ridgwayi* in my former list of Santa Marta birds (*l.c.*, p. 144).

266. **Dolichonyx oryzivorus** (Linn.). Five specimens, Bonda and Buritaca, September 20-27. Two were recorded in the former list, taken September 12 and October 12.

299. **Buarremon assimilis** (Boiss.). This species was recorded in error (*l.c.*, p. 167), the specimens referred to under this name being really *Arremonops conirostris caneus* Bangs.

\*<sub>317</sub> bis. *Hirundo erythrogastra* (Bodd.). Ten specimens, all birds of the year, Buritaca, September 6–29.

327. *Vireo olivaceus* (Linn.). One specimen, Don Diego, May 3, 1899. Not in previous collections, but recorded from Santa Marta by Salvin and Godman (cf. Allen, *l.c.*, p. 173).

\*<sub>327</sub> bis. *Vireo calidris calidris* (Linn.). Two specimens, Bonda, August 19, and Masinga, September 7.

These seem indistinguishable from true *calidris*, and are doubtless migrants from Jamaica, where the species is known only as a summer resident.

The specimens of *Vireo calidris barbatula*, already recorded by me (*l.c.*, p. 173) from Bonda (August 17–September 18), are indistinguishable from specimens from Cuba, where the species appears to be only a summer resident.

Since the publication of my list of Santa Marta birds, Mr. Bangs and others have described a number of species and subspecies from this region, based on material collected by Mr. Brown, and previously recorded by Mr. Bangs under other names. In referring to his earlier papers on this material, Mr. Bangs says: "Many species, however, were not satisfactorily identified, owing to lack of material necessary for comparison. Some of these have since been described, but there remain the following [four species and six subspecies]—among them, some of the best-marked forms of the region—that appear to need special names."<sup>1</sup> These added to the 56 species and subspecies previously based on Santa Marta specimens make 73 in a total list of 392 species and subspecies thus far recorded from the Santa Marta district, or about 19 per cent. Those published since the appearance of my former list are the following 17, all except two having been described by Mr. Bangs. They are here entered according to the numeration of my previous list, with the corresponding list names in parentheses.

1. *Crypturus soui mustelinus* Bangs (= *C. soui*), Proc. Biol. Soc. Wash., XVIII, p. 151, June 9, 1905.

104. *Chloronerpes yucatanensis allenii* Bangs (= *C. y. uropygialis*), Proc. New Engl. Zool. Club, III, p. 83, March 31, 1902.

109. *Nyctidromus albicollis gilvus* Bangs (= *N. albicollis*), *ibid.*, III, p. 82, March 31, 1902.

<sup>1</sup> Proc. New Eng. Zool. Club, III, pp 81–90, March 31, 1902.

121. *Phaethornis longirostris susurrus* Bangs (= *P. longirostris*), *ibid.*, II, p. 64, July 31, 1901.

160. *Onchorhynchus mexicanus fraterculus* Bangs (= *Muscivora mexicana*), *ibid.*, III, p. 86, March 31, 1902.

176. *Myiopagis placens pallens* Bangs (= *M. placens*), *ibid.*, p. 85.

187. *Mionectes olivaceus galbinus* Bangs (= *M. olivaceus*), *ibid.*, p. 85.

189. *Serpophaga cinerea cana* Bangs (= *S. cinerea grisea*), *Proc. Biol. Soc. Wash.*, XVII, p. 113, May 18, 1904.

225. *Premnoplex coloratus* Bangs (= *Margarornis brunnescens*) *Proc. New Engl. Zoöl. Club*, III, p. 84, March 31, 1902.

230. *Xenicopsis anxius* Bangs (= *Anabazanops striaticollis*), *ibid.*, p. 83.

264. *Sturnella magna paralios* Bangs (= *S. meridionalis*), *ibid.*, II, p. 56, February 15, 1901.

274. *Catamenia alpica* Bangs (= *Catamenia* sp.), *ibid.*, III, p. 89, March 31, 1902.

316. *Chlorophonia frontalis psittacina* Bangs (= *C. frontalis*), *ibid.*, p. 88.

317. *Stelgidopteryx ruficollis æqualis* Bangs (= *S. uropygialis*), *ibid.*, II, p. 58, July 31, 1901.

364. *Troglodytes musculus atopus* Oberholser (= *T. m. rufulus*), *Proc. U. S. Nat. Mus.*, XXVII, p. 207, January 23, 1904.

368. *Henicorhina hilaris bangsi* Ridgway (= *H. leucophrys*), *Proc. Biol. Soc. Wash.*, XVI, p. 168, November 30, 1903.

369. *Microcerculus corrasus* Bangs (= *M. marginatus*, provisional), *Proc. New Engl. Zoöl. Club*, III, p. 87, March 31, 1902.

#### DESCRIPTIONS OF NESTS AND EGGS.

The collection of nests and eggs numbers about 250 entries, each entry generally including both the nest and eggs, but in a few cases there are nests without eggs, and in a number of others eggs without nests, the nest being a hollow tree or the bare ground. In about 200 cases, representing about 42 species, the identification was secured

by the preservation of a bird, sent as a "marker" for the determination of the species. The identification is thus fairly positive. In some cases this precaution was not taken and the identification is unsatisfactory; all such material is omitted from consideration in the present connection.

The nests were taken and preserved with care, and the eggs, unless too far incubated, are in a good state of preservation; both nests and eggs were so well packed that they reached the Museum in excellent condition. Some of the common species are represented by large series of nests and eggs, showing the range of variation in architecture and in the shape, size, and markings of the eggs.

Especially noteworthy is the small number of eggs in a set in nearly all the species represented, two or three being the most common number, four being exceptional, and five occurring in only two species, *Icterus xanthornus* and *Cyanocorax affinis*. The bulky character of the nests is, as a rule, a striking feature, which must necessarily render them conspicuous, without, in most cases, affording any special protection from enemies.

It is interesting to note that the breeding season in the Santa Marta district is from about the first of April to the middle of June, no nests being labeled as having been taken in March, and only six later than June 15. There are four records for September, two for *Leptotila verreauxi* and one each for *Formicivora intermedia* and *Furnarius agnatus*, indicating perhaps a second breeding season for these species.

The labels rarely give anything beyond the date and place of collecting; there is unfortunately nothing to indicate the height above the ground at which the nest was placed, or the kind of tree or shrub in which it was found. The few notes found on the labels have been transcribed and are given in their proper connection, between marks of quotation.

The measurements of the eggs are in millimeters. The numbers in the numeration of the list enclosed in parentheses are those of the species in my former list of Santa Marta birds (*l.c.*).

1 (1). *Crypturus soui mustelinus* Bangs. Two eggs, nearly uniform ecru drab, measuring  $40 \times 31$  and  $43 \times 33.5$  mm. "Don Amo, altitude 2000 feet, August 6; 2 eggs on ground in a thicket." Don Amo is a plantation, in a mountain valley, 18 miles east of Santa Marta.

2 (35). *Leptotila verreauxi* Bonap. Twelve nests with eggs, usually two each, two nests having only one each, probably incom-

plete sets. All were taken at Bonda (altitude 150 feet), March 30, April 3, 5, 12, 13 and 18, May 1, and September 10; two sets were taken on the latter date, apparently indicating two breeding periods, a spring and a fall period.

The nest, placed in the fork of a small tree or shrub, consists of a quite substantial mass of small twigs, the amount varying considerably in different nests. The eggs are nearly pure white, slightly glossy, and vary considerably in size in different sets, an average egg measuring  $30 \times 22$ , with some as small as  $27 \times 20$ ,  $28 \times 21$ , etc.

3 (37). *Columbigallina passerina granatina* (Bonap.). Three nests, with two eggs each, collected at Bonda, April 23, 29, and June 3.

The nests consist of a mass of small twigs and plant stems, placed in the fork of a branch or shrub. The eggs are clear white, and measure about  $21 \times 16$ .

4 (38). *Columbigallina rufipennis* (Bonap.). Five nests, with two eggs each, collected at Bonda, April 9 and June 2, 3, and 5.

The nests are similar in position and structure to those of the preceding species, and the eggs are apparently indistinguishable, but appear to average slightly larger.

5 (47). *Rupornis magnirostris* (Gmel.). Two nests, each with one egg, collected at Bonda, April 13 and 18.

The nests are rudely constructed of sticks, placed in the fork of a branch, and are rather small for the size of the bird. The two eggs vary greatly in color. The ground color is a rather dull grayish white, specked and blotched with pale chocolate, sparsely over the small end, more thickly about the middle, while the large end in one is palely washed and mottled with chocolate over the greater part of the surface; in the other, the large end is more heavily washed with a much darker shade of chocolate and heavily streaked with lines of dark umber. They measure  $42.5 \times 35$  and  $42 \times 34$ , the eggs being oval.

6 (93). *Bucco ruficollis* (Wagler). Three eggs, "found in clay nest of No. 44 [*Furnarius agnatus*]." Collected at Bonda, May 17.

The eggs are clear dull white, subspherical, and measure  $26 \times 21$ ,  $27 \times 21$ ,  $26 \times 21$ .

7 (94). *Galbula ruficauda pallida* Bangs. Two eggs, without nest, Bonda, April 17.

The eggs are clear glossy white. One is broken; the other measures  $21 \times 18$ . Evidently the eggs were well advanced in incubation when taken.

8 (102). *Centurus wagleri sanctæmartæ* Bangs. One egg and section of a dead tree trunk, about 150 mm. in diameter, containing the nesting-hole, from Mamatoca, April 10. Egg clear white,  $21.5 \times 15$ .

9 (109). *Nyctidromus albicollis gilvus* Bangs. Two sets of eggs, of two each, Bonda, April 15, and Don Diego, May 15. The Don Diego set was found in a "shady place in a coffee orchard, on alluvial land, near sea-level."

The eggs are oval to elongate oval, the ground-color vinaceous buff, irregularly blotched and clouded with a darker shade of buff, interspersed with faint shades of lavender. Some of the eggs are much more heavily marked than others, in one there being a few superimposed streaks of pale hazel. In each set one of the eggs is much less strongly colored than the other. The two sets of eggs measure respectively:  $30.5 \times 20.5$ ,  $30 \times 20.5$ ;  $31 \times 21$ ,  $29 \times 21.5$ .

10 (141). *Glaucis hirsuta* (Gmel.). Nest and two eggs, Don Diego, May 19. The nest, attached to the under surface of a wild banana leaf, is composed of fine vegetable fibers and partly covered externally with large strips of a greenish gray lichen. The eggs measure  $15 \times 9$  mm., being very elongate oval, the two ends similar in form.

11 (143). *Tyrannus melancholicus satrapa* (Licht.). Eleven nests with eggs, Bonda, April 12, 14, 22, 24, 26, 27, and May 5, 13, 14. Two of the nests have three eggs each, one has one egg, and the other eight nests have each two.

The nests are of moderate size, with the outside diameter 120 to 160 mm.; the inside about 65 mm. Externally the nest is formed of rather coarse vegetable stems, neatly lined with finer material of the same character, the whole forming a neat, compact, substantial structure, deeply cupped, and saddled on a branch, usually at a fork, so that it is very securely supported.

The eggs are quite variable in size, ground-color, and markings. In an average set, the ground-color is very pale buffy white, blotched with dark chocolate, sparsely at the ends, but heavily about the middle, the large blotches often extending nearly to the larger end. The ground-color varies in different sets from nearly clear white to

deep pinkish buff, and the blotches from chocolate to blackish. The eggs vary in measurements from  $22 \times 15$  to  $24 \times 18.5$ .

12 (148). *Myiarchus erythrocercus* Scl. & Salv. Two nests and six sets of eggs, Bonda, April 8, 9, 12, 19, and May 2, 20. "Nests in hollow tree."

One of the nests is *in situ* in the hollow top of a dead stump, about one foot below the top of the stump. So far as can be determined without removal from the stump, it consists of a felted mass of soft materials lining the bottom of the cavity. The other nest, removed from the nesting cavity by the collector, consists chiefly of hair, with a few green parrot feathers and bits of snake skin, the latter a usual component of the nests of various species of *Myiarchus*.

The number of eggs to the set varies from two to four, one set containing four, two sets two each, and three sets three each. They are of the usual *Myiarchus* style, the ground-color being creamy white, profusely marked with narrow longitudinal streaks of purplish chocolate, most heavily at the larger end. There is a wide range of variation in the amount and color of the markings, in some of the eggs the streaks covering much more than half of the surface, while in others much the greater part of the egg is white. Average eggs measure  $22 \times 17$ ,  $22 \times 16$ ,  $24 \times 17$ , etc.

13 (152). ? *Contopus brachytarsus* (Sclater). Four nests with eggs and four nests without eggs, some of the latter old and weathered, the first four (with eggs) collected at Bonda, April 16, 25, 29, and May 1. Unfortunately the nests lack identification through the presence of any parent bird, but both the nests and eggs are so similar to the well-known nests of North American species of the genus that they apparently cannot be those of any other species, this being the only species of *Contopus* breeding in the region.

The nests are all saddled on the upper side of a nearly horizontal branch at a point where the branch forks. The nest proper is formed of circularly woven plant fibers, and heavily lined with rather large coarse white feathers, mainly of some species of pigeon, while the exterior is heavily coated with white or light-colored flaky vegetable substances which differ in character in different nests but result in the same general effect, which is that of the lichen-covered nest of *Contopus virens*. In one nest, bits of greenish gray lichen are actually used to partly cover the outside, while in others bits of cloth, cotton thread, and plant down are used. The edges of the nest where it comes in contact with the main branch or with the forks between



which it is placed are, in the fresh nests, plastered to the bark, evidently by some glutinous secretion supplied by the bird. The outside diameter of the top of the nest is usually about  $3\frac{1}{2}$  to 4 inches (85 to 105 mm.), with an inside diameter of 2 inches (50 mm.); the depth of the cup is about  $\frac{3}{4}$  of an inch to an inch (19 to 25 mm.).

The eggs are creamy white, blotched and speckled with reddish chocolate and lavender, chiefly in a ring near the greater end of the egg. The number of eggs in three sets is two each, in the other, three. A set of two eggs measures  $15 \times 19$  and  $15.5 \times 20$ ; the single egg,  $16 \times 21$ .

14 (161). *Megarhynchus pitangus* (Linn.). Fifteen nests, each with two eggs, except two, one of which has three and the other four, all taken at or in the immediate vicinity of Bonda, April 7 to May 3.

The nests are massive, domed structures, with the entrance on one side near the top. They are globular in general outline, varying in size from about 10 to 15 inches (250–380 mm.) in diameter, and are placed in the upright forks of branches. They are constructed externally of coarse grass stems, long pieces of vine stems, and other coarse vegetable fibers, with a globular inner nest of finer materials, all compactly and firmly woven together. The materials vary considerably in the different nests, which also vary in size, those made of the finer materials being smaller than those constructed of coarser materials. Their large size must make them very conspicuous objects, but their thick walls must secure considerable protection from enemies.

The ground-color of the eggs is creamy white, varying somewhat in the depth of tone in different sets of eggs, sprinkled with dots and small blotches of rich chocolate and lavender, mostly about the greater end, but more or less scattered over the whole surface. The markings vary in size and abundance in different specimens, sometimes forming simply a circle of large blotches around the point of the greatest diameter of the egg, with the rest of the surface nearly free from markings; in other cases the whole surface is more or less marked with specks and spots, without forming a very distinct ring near the greater end.

Three sets of eggs measure as follows:  $27 \times 19.5$ ,  $28 \times 20$ ,  $29 \times 20$ ;  $28.5 \times 20.5$ ,  $29 \times 21$ ;  $29 \times 19.5$ ,  $31 \times 20.7$ .

15 (162). *Myiodynastes audax nobilis* (Sclater). One nest and three sets of eggs, with respectively one, two, and three eggs each, Bonda, May 9, 10, 11.

The nest is a thick layer of leaf stems (petioles of an unknown plant), hollowed to form a receptacle for the eggs, and was "taken from a hollow in a dead tree." The other two sets of eggs are labeled: "Nest in hollow of a tree. Not preserved."

The eggs have a nearly white ground-color, heavily blotched all over with reddish chocolate and lavender, covering nearly the whole surface. The eggs in general appearance resemble those of species of *Myiarchus*, but the markings are more rounded and less linear. In one set the spots are much more abundant about the larger end of the egg than elsewhere, the eggs of different sets varying considerably in the arrangement and extent of the markings.

The eggs measure as follows:  $24 \times 17.5$ ,  $24 \times 17.5$ ,  $25.2 \times 18.3$ ;  $26 \times 18.5$ ;  $25.5 \times 18$ ,  $26 \times 18.5$ .

16 (167). *Rhynchocyclus flaviventris* (Wied). Nineteen nests, of which one has one egg, thirteen have two eggs each, and five have three eggs each. All were taken at Bonda, as follows: April 22, 28, May 6, 16, 20, 24, 26, June 1, 2, 3, 5, 6.

The nest is retort-shaped, hung apparently from the end of a slender, drooping branch, with the entrance at the bottom. It is compactly woven of soft flexible fibers of dead grass, coarse at the top and superficially but, for the most part, very fine and soft, in some nests almost as fine and soft as tow. The entrance forms a short neck at the bottom on one side, through which the bird passes upward to the nest proper, which occupies the bulbous portion of the bottom. The nest is supported and fastened to the branch by quite a long, slender, tapering neck. The nests vary in vertical length from about six inches to a foot, according to the length of the neck, with a diameter across the bulbous portion, near the bottom, of about four to six inches.

The eggs, usually two or three to the set, have the ground-color creamy white, with a few small, scattered, roundish spots of dark chocolate, varying from reddish brown to blackish brown, clustered mostly about the greater end. The eggs are rather pointed ovate, and measure in the average about  $14 \times 7.5$ .

17 (169). *Myiozetetes similis colombianus* (Cab. & Heine.). Thirteen nests, of which one has one egg, seven have two eggs each, four have three each, and one has four. They were all taken at Bonda, and all but one in April (April 7-27), the other bearing date May 13.

The nest is a domed structure, large for the size of the bird, placed

in the fork of a branch. It is composed of dead grass, usually of a reddish brown color, with numerous conspicuous tufts of white cotton woven into the base and sides. In some cases cotton forms the greater part of the exterior, while in other nests very little is used, but usually it is a conspicuous feature of the structure. In one case, the soft downy substance is not cotton, but is of a silky texture, very soft, and more or less yellow, or even reddish, in color, it being the soft down of some other plant than cotton. The inside or lining of the nest is fine vegetable fibers, without any plant down, which is all applied to the outside of the nest instead of being utilized as a soft lining. The opening is large, circular, and occupies the greater part of one side of the nest. The general form of the nest is nearly spherical or globular. The vertical diameter of the nest is about 6 to 8 inches, with a transverse diameter of about 4 to 6 inches, the size varying considerably in different nests.

The eggs are ovate to elliptical ovate, with the ground-color nearly clear white, sparingly marked with small spots of brown and lavender, the spots being larger and more crowded about the larger end. They vary considerably in size and form, even in eggs of the same set, as shown by the following measurements:  $21.5 \times 16$ ,  $22.5 \times 16$ ,  $22 \times 16$ ,  $23.7 \times 16.5$ ,  $24 \times 16$ ,  $23 \times 15$ .

18 (173). *Elænea pagana* (Licht.). One nest, with two eggs, taken at Bonda, April 16.

This nest is suspended against a small upright branch, to which it is fastened strongly on one side at the top only. It has the form of an inverted, short-necked retort, with the entrance at the bottom, on one side, produced to form the neck of the retort. The exterior is composed of a thin layer of stiff, fine, black vegetable fibers, by means of which and a few coarse grass leaves it is bound on one side to the upright twig that gives it support. The inner part or main body of the nest is woven of coarser vegetable fibers of a different color, with much cottony plant down woven in around the entrance. Three small leaves are attached to the exterior, being held in place by the horse-hair-like fibers that compose the exterior. The length of the nest (vertically) is about 5 inches, the transverse diameter about  $3\frac{1}{2}$  inches.

The eggs are grayish white, nearly covered with specks and blotches of very dark brown and lavender, the egg thus greatly resembling those of the North American Oven-bird (*Seiurus aurocapillus*). The form of the eggs is short ovate, they measuring

18 × 13.5. They are unfortunately in bad condition, evidently having been far advanced in incubation when collected.

19 (193). *Euscarthmus impiger* *Scl. & Salv.* Eight nests, taken at Bonda, May 5-28 and June 2. Three are without eggs, one has one egg, three have two eggs each, and one has three eggs.

The nests are suspended from a drooping twig, of a shrub or herbaceous plant, to which they are very strongly attached by the twig being heavily enclosed in the substance of the upper part of the nest, which sometimes forms a pointed projection upward beyond the main body of the nest. The small circular entrance, however, is on the side, near the top of the nest, instead of at the bottom through a slightly produced tube, as in *Elanea*, *Todirostrum*, *Rhynchocyclus*, etc. Externally the nest is formed of blades of dead grass and finer vegetable shreds and fibers, lined with a large quantity of soft plant down, varying in color from soiled white to deep rusty buff. In some instances the nest consists principally of plant down, mixed, especially externally, with enough fibrous material to give firmness.

The vertical length of the nest proper is about 4 to 4½ inches, with sometimes in addition a pointed projection upward, forming the attachment, one to two inches in length. In other cases support is obtained by simply weaving into the outer wall on one side the slender plant stems or twigs to which it is fastened.

The eggs are clear dull white, nearly unspotted, or with only a few widely scattered rusty specks near the greater end. They measure about 18 × 13.

20 (195). *Todirostrum nigriceps* *Sclater*. One nest, with one egg, Bonda, June 6.

This is a globular nest, with the upper surface firmly attached to a twig, and the entrance on one side at the bottom, forming a slightly projecting neck. It is composed of rather fine grass-like plant fibers, a considerable layer of which is carried over the top of the twig which gives the nest its support. The whole material of the nest is soft, of a yellowish brown color, interwoven with which is more or less whitish plant down, which is mixed to a considerable extent with the soft fibrous material that constitutes the lining. The transverse diameter at the bottom is about 4 inches, the vertical about 3½ inches.

The egg is regularly ovate, clear white, with a few yellowish

brown or rust-colored specks over the larger end. It measures  $16 \times 11$ .

21 (200). *Sayornis cineracea* (Laf.). One nest with three eggs, taken three miles east of Bonda, June 5.

The nest is much like that of our Phoebe (*Sayornis phæbe*), having the external and basal portions formed of mud, with the nest proper composed of fine dry grass and other plant fibers, mixed with plant down and a few feathers. The external diameter is 4 inches, the internal 2 inches.

The eggs are clear dull white, unspotted, and measure  $20 \times 14$  and  $20 \times 14.5$  (one is broken).

22 (209). *Pachyrhamphus cinereiventris* Sclater. Two nests, one without eggs and the other with three; Cacagualito (altitude, 1500 feet), May 20, and Bonda, June 1.

These nests are very massive, placed in a stout upright fork of a shrub or tree, and composed of dry brown grass, plant stems, strips of bark, etc., mixed with much yellowish plant down. They are very deep, open at the top, with the nest cavity extending nearly to the bottom of the nest, which may have a depth (vertical length) of 9 or 10 inches, with the cavity extending to within an inch or an inch and a half of the bottom, and without any lining of soft materials. One of the nests is much more bulky than the other, having a transverse diameter of 7 inches, instead of only 5, as in the other.

The eggs are grayish white, thickly streaked, blotched and spotted with dark lavender, and with a few overlying streaks and spots of dark chocolate. In one egg the streaks and spots are more sharply defined and darker than in the other two. Size,  $19 \times 14$ .

23 (152). *Manacus manacus abditivus* Bangs. One nest, with two eggs, Don Diego, May 18.

This is a small, shallow, cup-shaped nest, attached by the rim to the forks of a small horizontal twig, the branches of which on two sides are built into the rim. The nest is so thin that the eggs are clearly visible through it from below, and is composed of long wiry grass stems or other plant fiber, neatly woven to form the circular nest. Its attachment to the twigs, at the outer edge, is effected not merely by weaving the plant fibers about the twig, but by the use of spider web, matted to the plant fibers by use of some glutinous matter, probably secreted by the bird. The transverse diameter of the rim

is about 3 inches outside and 2 inches inside, with an inside depth of about 1 inch.

The egg has the whitish ground-color nearly covered with longitudinal streaks of pale yellowish brown, with, in places, a slight wash of lavender, the markings, except over the small end, occupying nearly the whole surface, with fainter interspaces between the heavier blotches. Size,  $20 \times 14.5$ .

24 (216). *Chiroxiphia lanceolata* (Wagler). Three nests, with eggs (1, 2, 2, respectively), Bonda, May 16, 18, 24.

The nests in a general way resemble the nest of *Manacus*, already described, from which they differ in being made of finer materials and in being more compactly built, with the bottom less open, and reinforced with an exterior covering of leaves. They are all attached by the rim to the twigs of a horizontally forked branchlet, and are composed of circularly woven plant stems (apparently, in large part, long slender petioles), with an outside covering of small dead leaves, sufficient in one nest to entirely cover the nest externally below, and nearly so in another. The rim of the nest is in each case bound to the supporting twigs mainly by a whitish mass of spider web held together apparently by the dried glutinous saliva of the bird, as in *Manacus*. The outside diameter across the rim is  $2\frac{1}{2}$  to 3 inches, the inside diameter about an inch less, and the depth of the cavity less than an inch.

The three sets of eggs, while they have a mutual general resemblance, differ greatly in details of coloration, as do also the eggs of the same set. In one set the ground-color in one egg is dull pale creamy white, while in the other it is a much deeper shade of the same color; in the other eggs it is of about the same shade as in the paler egg of this set. The markings, generally of a very pale chocolate mixed with lilac shades, in the first set nearly cover the eggs, especially in the darker egg, while in the other set of two eggs they are sparser and coarser; in the single egg of the other set they are nearly all massed in a nearly solid broad ring about the greater end of the egg. Size, about  $22 \times 15.5$ ,  $21 \times 14.7$ ,  $21.5 \times 15$ .

25 (223). *Dendroplex picirostris* (Lafre.). One nest with three eggs, Bonda, June 18; also a set of three eggs, Bonda, June 17.

An abandoned woodpecker hole in the top of a dead stump appears to have been utilized for a nesting-site, the nest consisting of a felted lining of plant down mixed with bits of plant stems at the bottom of the cavity.

The eggs are clear white, smooth, and slightly polished, and measure as follows:  $26 \times 13$ ,  $27 \times 13.5$ ,  $27 \times 14.3$ ;  $25 \times 14.6$ ,  $26 \times 15$ ,  $25 \times 14$ . In one set the greatest diameter is at the middle, in the other nearer to one end.

26 (241). *Furnarius agnatus* *Scl. & Salv.* Two nests, with two eggs each, Bonda, May 15, September 18.

The nests are of the usual *Furnarius* type, made of layers of mud and saddled on a branch of a tree, forming a rounded, domed structure, with the entrance at one side near the bottom, communicating with an interior nest-chamber, lined with plant stems, apparently mostly petioles of leaves. The nests are about  $8\frac{1}{2}$  to 9 inches high, and about the same in diameter.

The eggs are clear white, elongate oval, and measure  $24.5 \times 17.5$ ,  $25 \times 17.5$ ,  $25.5 \times 18$ ,  $25 \times 18.4$ .

27 (248). *Formicivora intermedia* *Cabanis.* Three nests, with two sets of eggs of two each, Bonda, April 21 (nest only), May 15, and September 18.

These nests are slight, pensile structures, suspended by the rim from the forked twigs of a horizontal branch. They consist of fine wire-like plant fibers, probably grass stems, loosely woven to form the deep cup-shaped nest, which is fastened to the twigs by looping some of the fibers over them. They are so slight and open that the eggs are plainly visible through the walls and bottom of the nest. They have an outside diameter of about 3 to  $3\frac{1}{2}$  inches, and a depth (inside) of about 2 inches.

The eggs are grayish white, thickly sprinkled with dots and small spots of lilac, with a few specks and blotches of very dark chocolate intermingled, the markings about the larger end almost wholly covering the surface. Measurements,  $19 \times 13$  (average of four eggs).

28 (252). *Thamnophilus melanonotus* *Sclater.* One nest, with two eggs, Bonda, May 12.

The nest is similar in position, structure, and materials to the nests of *Formicivora intermedia*, but is of course larger, having a diameter across the rim of about  $3\frac{1}{2}$  inches and a depth of  $2\frac{1}{2}$ . It is suspended by the rim to the fork of a small thorny branch, and is rather openly woven of some species of wire-like grass and coarser plant stems, without lining, but decorated on the outside with scattered tufts of plant down.

The eggs are white, with profuse markings of prune purple at the  
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greater end, which in one egg nearly cover the surface, but are much more sparse on the other egg; the pointed half is without spots in both eggs. The eggs are both badly broken; the measurements of one can be given as  $26 \times 14$ .

29 (257). **Cyanocorax affinis** Pelzeln. Eleven nests, with three to five eggs each, all taken at Bonda, April 5-25 and May 2 and 15.

The nests are bulky structures of sticks and coarse twigs, lined with finer twigs, placed in the fork of an upright branch. They are of the usual Jay style of architecture, but differ much among themselves in the character of the materials utilized, some being constructed externally of very coarse sticks, the largest of which have a diameter of 5 to 7 mm., while others are built wholly of fine twigs, and thus are much smaller and more artistic, with a breadth of about 9 inches, instead of 12 to 14 as in the nests of coarser material. In all the lining consists merely of fine twigs.

Of the eleven sets of eggs, five have three eggs each, four have four each, and two have five each. The number of eggs to the set is thus exceptionally large for a bird of this region. The buffy white ground-color is nearly concealed by spots and blotches of olive brown, tinged more or less with grayish. A set of five and another of three eggs measure as follows:  $29 \times 22$ ,  $33 \times 23$ ,  $33.5 \times 23.2$ ,  $33 \times 23$ ,  $33 \times 23$ ;  $33 \times 25$ ,  $32.5 \times 23.6$ ,  $35 \times 24$ .

30 (260). **Icterus xanthornus** (Linn.). Seventeen nests, with eggs, all from Bonda, of which fifteen were taken in April (April 5-21) and two in May. Six of the nests contained two eggs each, ten contained three each, and one had five, "the only nest in which five were found."

These nests are of the usual pendant, *Icterus* style, with the entrance at the top, but they vary considerably in length and in the character of the materials used in their construction. They are composed principally of grass, but vary in color, being dull grayish brown, yellowish brown, or even bright reddish brown, according to the kind of grass selected. One differs from all the others in being composed of a much finer and more wiry kind of grass than the others. They are all very compactly woven, the walls gradually thickening from the top to the bottom, the bottom being from one-half to three-fourths of an inch thick, within which is a circularly woven thick lining of softer material than the walls, forming a sort of second nest at the bottom of the pouch. The nests vary in length from about 10 to 16 inches, with a diameter at the bottom of about  $4\frac{1}{2}$  inches.



The eggs are white, sometimes bluish white, scrawled with lines of purplish black, and sometimes with lavender, chiefly about the greater end, the amount of marking varying greatly in different sets, and even in different eggs of the same set. Two sets, of three and five eggs each, measure:  $25 \times 17$ ,  $25 \times 16.5$ ,  $24.7 \times 16$ ;  $25 \times 16.5$ ,  $26 \times 17$ ,  $25 \times 16.2$ ,  $26 \times 15.5$ ,  $25 \times 17$ .

31 (265). *Molothrus cassini* Finsch. Six eggs, laid in the nests of various other species, unfortunately not identified by the collector. They are of the usual *Molothrus* style, white, thickly speckled with reddish brown. Size, about  $23 \times 17$  to  $25 \times 18$ .

32 (273, 299). *Arremonops conirostris caneus* Bangs. Four nests, each with two eggs, Bonda, April 18, 19, 22, and May 4.

The nests, bulky and deeply cup-shaped, are placed in the fork of a branch, and differ much in the materials of which they are constructed. One is composed outwardly of dead leaves, lined with plant stems and fine tendrils of some vine. Another is composed outwardly and also lined with pieces of broad leaves of some sedge or flag, mixed with plant stems, the latter forming a sort of middle layer. Another is composed externally of fine grass leaves, and internally of broad blades of grass or sedge and fine plant fibers. In position, form, and in general structure the four nests are all very similar. Their external diameter is about 5 inches, internal about 3; depth externally 4 inches, depth of cavity about  $2\frac{1}{2}$  inches.

The eggs are pure white and measure (two sets):  $23 \times 17$ ,  $23 \times 17$ ;  $24 \times 17$ ,  $23.5 \times 17$ .

33 (286). *Volatina jacarina splendens* (Vieill.). Two nests, one with one egg and one with two, and an additional set of two eggs, collected at Bonda, May 6 and June 2.

The nests are placed in the fork of a small branch, and are deeply cup-shaped, compactly woven of fine plant fibers and lined with finer material of the same character. Outside diameter, 3 inches; inside diameter,  $1\frac{3}{4}$ ; inside depth (in the best-preserved nest),  $\frac{1}{2}$  inch. "Nest in a shrub, second growth."

The eggs are pale bluish white, in one set nearly clear white, sprinkled with small spots of reddish chestnut, massed chiefly around the greater end. Measurements:  $15.5 \times 12$ ,  $14.7 \times 11.7$ ;  $15.5 \times 13$ ,  $18 \times 13$ ;  $16 \times 12$ .

34 (296). *Saltator olivaceus* Cab. Seven nests, each with two eggs, Bonda (or immediate vicinity), April 12-25, and May 3 and 8.

The nests are large, bulky structures, rather rudely constructed externally of sticks and plant stems often intermixed with leaves and long strips of a broad-leaved sedge (one nest is almost wholly composed of the latter), and lined with finer plant stems, sometimes with wire-grass. The nests vary greatly in size and materials; one has a part of a letter or other manuscript, in Spanish, placed among the leaves forming the outer wall of the nest. The smaller nests have an external diameter of about 5 inches, in others it is 6, 8, and 9 inches, not including the projecting ends of some of the coarser sticks. The inside diameter is about 3 inches, with an inside depth of  $1\frac{1}{2}$  to 2 inches, and an external depth of 3 to 5 inches.

The eggs are pale blue, with fine lines, like pen-scratches, of black, mostly confined to the larger end. Two sets measure:  $27 \times 13$ ,  $27 \times 12.5$ ;  $25 \times 14$ ,  $26 \times 14$ .

35 (306). **Ramphocelus dimidiatus** (Lafr.). Five nests, of which four have two eggs each and the other one egg, Cacagualito (altitude, 1500 feet), May 12 (one nest), and Don Diego (coast region, 45 miles east of Santa Marta), May 5-18.

Several of these nests are detached, but are labeled as found "on a coffee tree," and were evidently placed in the fork of a branch. They are compact nests, deeply cupped, with rather thick walls, composed externally of plant stems and lined with finer stems and wire-grass. Some have leaves of shrubs and bits of broad graminaceous leaves, somewhat resembling maize leaves, woven into the outer surface. The external diameter at the upper edge is about 5 inches, the internal about  $2\frac{1}{2}$ , and the inside depth about 2 inches.

The eggs are blue, finely spotted with light and dark chocolate over most of the surface, but with the spots generally larger and more numerous about the larger end. Average eggs measure  $23 \times 16$ .

36 (309). **Tanagra cana** Swains. Six nests, four of which have two eggs each, and of the two others, one has three eggs and the other one; four are from Bonda, April 20-24, and one each from Masinga (May 14) and Mamatoca (May).

The nests, placed usually on the fork of a small horizontal branch (one is on an upright fork), are compact and neatly built, forming a deep cup with very thick walls, of rather fine vegetable fibers mixed copiously with plant down, and in one case with ravelings, bits of cloth, and a little wool, and several have a few feathers; one has the whole outside covered with cotton; another has as a prominent

feature bits of gray and green cloth; others are almost wholly without any of these conspicuous accessories. An average nest has an external diameter of about 5 inches and an external depth of 4 inches; inside diameter, 2 inches; inside depth,  $1\frac{3}{4}$  inches.

The eggs are faintly bluish white, rather heavily streaked and spotted all over with lavender and blackish chocolate, the former predominating, the markings generally covering the greater part of the surface of the eggs. In some sets, however, the markings are much less abundant, covering less than half the surface. Four eggs, selected at random, measure  $24.5 \times 15.5$ ,  $22 \times 16$ ,  $25 \times 16$ ,  $25 \times 17$ .

37 (315). *Euphonia trinitatis Strickl.* One nest, with two eggs, Bonda, April 24.

The nest is suspended by the rim from the fork of a small branch, and is a rather slight structure, woven of grass blades and lined with a few plant stems, the supporting twigs being woven into the rim of the nest on two sides. The nest is so thin and slight that the eggs would be partly visible from below. It measures 4 inches across the top, with the cavity only about half an inch deep.

The two eggs have a faintly bluish white ground-color, almost uniformly speckled all over with dots and small spots of chestnut, but with the larger spots chiefly at the larger end of the egg. They measure  $14.5 \times 11$ ,  $15 \times 11$ .

38 (324). *Vireo chivi agilis (Licht.)*. Two nests, each with two eggs, Bonda, May 16 and June 2.

These nests are of the typical *Vireo* style, being suspended from a fork of a horizontal branch, the twigs supporting them being woven into the rim of the nest. They are composed of grass blades and soft vegetable fibers, mixed with a little plant down. They have an outside diameter across the rim of 3 inches, and an outside depth of  $2\frac{1}{4}$  inches, with thick, substantial, neatly constructed walls; inside diameter,  $2\frac{1}{4}$  inches; inside depth,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inches.

The eggs are white, with a few blackish dots, mostly about the larger end. One set is broken; the other measures  $20 \times 15$ ,  $19 \times 15$ .

39 (368). *Henicorhina hiliaris bangsi Ridgway*. One nest, with parent bird, but no eggs, Valparaiso (altitude 5000 feet), June 1.

Nest pensile, with the opening near the top, composed of stiff black wiry rootlets, uniform in structure and materials throughout, except that there are patches of green moss affixed here and there to

the outside. At present, it does not nearly cover the whole outer surface, but some may have been lost.

40 (371). *Heleodytes griseus* (Swains.). Two nests, with four and three eggs respectively, and two additional sets of eggs of two each, Bonda, April 1, 12, 21, and 29.

The nest is built in the fork of a bush, and consists of grass, flag leaves, soft, more or less disintegrated vegetable fiber of various kinds, forming a mass some 15 inches deep and 7 inches in diameter in one nest and 10 in the other. One of the nests is heavily covered on one side with raw cotton fiber; the other is without cotton. The entrance is near the top of the nest, on one side.

The eggs, while all of the same style and evidently of the same species, vary greatly in the tone of the ground-color and in the color of the markings, the ground-color varying from nearly white to cream-color, and the markings in the palest set, are very pale lavender, deeper lavender in another set, and olive brown in the darkest set. In one set, they are pinkish lavender. The markings, very fine and more or less blended, cover almost uniformly the whole surface of the egg. The four sets measure:  $21.5 \times 14$ ,  $23.5 \times 16$ ,  $24.3 \times 16$ ;  $23.5 \times 17$ ,  $24.5 \times 17.3$ ;  $25.2 \times 17$ ,  $25.7 \times 17$ ;  $24 \times 17$ ,  $24.2 \times 17$ ,  $25.2 \times 17$ ,  $24.6 \times 17$ .

41 (381). *Merula grayi lurida* (Bonap.). Eleven nests, each with eggs, Bonda, April 8, 15, 22, 26, May 4, 6, 7, 11, 15, 18, 23. Six of the nests have two eggs each, three have three each, one has four, and one has one.

The nests are solidly built of mud, plant roots, and stems, and are of the typical *Merula* character. The amount of mud used varies in different nests, as does the size of the structure. The average outside diameter is about 5 inches, and the outside depth the same; inside diameter,  $3\frac{1}{2}$ ; inside depth, about 2 inches.

The eggs are pale blue, thickly spotted and blotched over the larger end with reddish chestnut, and sparingly over the rest of the egg. The eggs vary greatly in the tint of the ground-color, and also in the amount of spotting, and also in size, as shown by the following measurements of five sets:  $28 \times 20$ ,  $28 \times 19.5$ ;  $25.5 \times 18.5$ ,  $25 \times 18.5$ ,  $26 \times 18.5$ ,  $25 \times 18$ ;  $28 \times 18.2$ ,  $26 \times 20$ ;  $27.5 \times 19$ ,  $27 \times 19$ ;  $28 \times 20$ ,  $26.5 \times 18$ ,  $26 \times 18.5$ .

42 (382). *Merula albiventris fusa* Bangs. Three nests, each

with eggs, Bonda, April 27, May 15, June 15. In two sets there are two eggs each; in the other, three.

The nests are similar to those of *Merula grayi lurida*, the three nests differing as much among themselves as do any of them from average nests of *lurida*.

The eggs also are not certainly distinguishable in color or form from those of *lurida*, there is so much individual variation in each series. They average, however, decidedly larger, as shown by the following measurements of the three sets:  $28 \times 19.5$ ,  $29 \times 20$ ;  $29 \times 20$ ,  $29 \times 21$ ;  $30 \times 19$ ,  $31 \times 17.5$ ,  $31 \times 19$ . The eggs of this last set are abnormally elongated and narrow.

