

additional observations and investigations may make the full truth of the matter clear. The observations of the winter of 1917-18 were unusual, but it is often by a study of the unusual that the usual is understood.

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## REMARKS ON BEEBE'S 'TROPICAL WILD LIFE.'

BY THOMAS E. PENARD.

In a previous number of 'The Auk' (1918, XXXV, p. 91), Dr. Witmer Stone reviewed briefly this interesting volume published by the New York Zoölogical Society, presenting the first season's work at the tropical research station, established in British Guiana under the direction of Mr. William Beebe. The results obtained by Mr. Beebe and his associates are of such interest and importance, and the work in general so deserving of the reviewer's praise, that I feel rather reluctant in offering a few slight corrections. My observations are not intended as criticisms, and I would hardly have thought it worth while to express them, were it not for the fact that the very excellence and authoritative character of Mr. Beebe's book might perhaps have the effect of creating a few misleading impressions in regard to some minor matters with which it deals.

In Chapter VIII Mr. Beebe gives a list of the birds of the Bartica District, in which, for the sake of completeness, he includes some species collected by Whitely at the same place, and listed by Salvin in 'The Ibis' for 1885 and 1886. Twenty-two species are starred to indicate that they are new to the Colony of British Guiana. Of this number, however, at least eighteen have been previously recorded from various localities in the Colony as follows:

**Columba plumbea plumbea** VIEILLOT.—Listed by Salvin (Ibis, 1886, p. 173) from Bartica Grove and Camacusa. Percival (Birds of the Botanic Gardens, 1893, Argosy reprint, p. 6) says that it is "unfrequent in Gardens, though a common species." Dawson (Hand-list of the Birds of British Guiana, 1916, p. 51) lists it as a Colonial species. Some of these

records may, however, apply to *Ænænas purpureotincla* (Ridgway). The form inhabiting British Guiana is *Ænænas plumbea locutrix* (Max.).

**Ibycter americanus** (BODDAERT). Bonson (P. Z. S., 1851, p. 56) records it from Br. Guiana under the name of "Red-headed Carracara." It is listed by Salvin (*l. c.*, 1886, p. 77) from Bartica Grove and Camacusa; by Quelch (Timehri, 1890, p. 102 and p. 334) from Demerara Falls and Upper Berbice; by Chubb (The Birds of British Guiana, 1916, i. p. 216, McConnell coll.) from Kamakabra River, etc., giving range in Br. Guiana; and by Dawson (*l. c.*, p. 7).

**Urochroma batavica** (BODDAERT).—Lloyd (Timehri, 1895, p. 272, sub nom. *Urochroma cingulata*) mentions it as formerly very plentiful in the neighborhood of "Groete Creek," and (*l. c.*, p. 278) gives local range as Essequibo River and N. W. District; F. P. and A. P. Penard (De Vogels van Guyana, 1908, i, p. 523) say these birds are not unfrequently seen in Surinam and Demerara during the Dry Season; Chubb (*l. c.*, p. 336, sub nom. *Touit batavica*) records specimens from Supenaam River and other localities, and gives range in Br. Guiana; and Dawson (*l. c.*, p. 20) lists it as the "Black-winged Parakeet."

**Ceryle americana americana** (GMELIN).—Recorded by Salvin (*l. c.*, 1886, p. 60) from Bartica Grove and other localities; by Sharpe (Cat. Birds Br. Mus., 1892, xvii, p. 139) from Demerara River; by Chubb (*l. c.*, p. 348) from Bonasika River, etc., giving range in Br. Guiana; and by Dawson (*l. c.*, p. 16).

**Cypseloides fumigatus** STREUBEL.—F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 95) state that there are specimens in the Georgetown Museum, and Dawson (*l. c.*, p. 34) lists it as a Colonial species.

**Tapera nævia** (LINNÉ).—Schomburgk (Reis. 1848, iii, p. 713, sub nom. *Diplopterus galeritus*) says that it is abundant in coast regions. Quelch (Timehri, 1891, p. 95; Reprint, p. 27) speaks of it as common in Georgetown; and Percival (*l. c.*, p. 9) states that its frequent plaintive note "Wife-sick" is one of the most familiar garden sounds. It has also been recorded by Salvin (*l. c.*, 1886, p. 64) from Bartica Grove and Roraima; by Shelley (Cat. Birds Br. Mus., 1891, xix, p. 423) from Georgetown; by Chubb (*l. c.*, p. 443) from Ituribisi River, etc., giving range in Br. Guiana; and by Dawson (*l. c.*, p. 23). The Br. Guiana form stands, *Tapera nævia nævia* (Linné).

**Pteroglossus aracari aracari** (LINNÉ).—Schomburgk (*l. c.*, p. 720) states that the species is tolerably abundant in Br. Guiana. It has been recorded by Salvin (*l. c.*, 1886, p. 65) from Bartica Grove; by Selater (Cat. Birds Br. Mus. 1891, xix, p. 138) from Demerara; by Chubb (*l. c.*, p. 458, sub nom. *Pteroglossus roraimæ*) from Roraima etc., giving range in Br. Guiana; and by Dawson (*l. c.*, p. 22). The form inhabiting Br. Guiana is *P. a. atricollis* (P. L. S. Müller)—see Bangs and Penard (Bull M. C. Z., 1918, p. 55).

**Chloronerpes rubiginosus** (SWAINSON).—Schomburgk (*l. c.*, p. 715) says he found it throughout Br. Guiana. It has been recorded by

Salvin (*l. c.*, 1886, p. 59) from Bartica Grove, Merumé Mountains, and Roraima; by Chubb (*l. c.*, p. 483) from Anarika River, etc., giving range in Br. Guiana; and by Dawson (*l. c.*, p. 24).

**Thamnophilus amazonicus** SCLATER.—Schomburgk (*l. c.*, p. 687) states that it inhabits the low bushes of the coast woods. It has been recorded by Salvin (*l. c.*, 1885, p. 423) from Bartica Grove and Camacusa; by Sclater (*Cat. Birds Br. Mus.*, 1890, xv, p. 199) from Takutu River (Salvin-Godman coll.); by Quelch (*Animal Life in Br. Guiana*, 1901, p. 182); and by Dawson (*l. c.*, p. 26), who stars the species, indicating that there are no representatives in the Museum at Georgetown. All these authors, except Sclater, refer to this species as *Thamnophilus ruficollis* [= *amazonicus* ♀ ?].

**Dysithamnus schistaceus** (D'ORBIGNY). F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 308) state that there are specimens in the Museum at Georgetown. Dawson (*l. c.*, p. 26) lists it as a Colonial species.

**Automolus infuscatus** SCLATER.—Recorded by Salvin (*l. c.*, 1885, p. 420, sub nom. *Automolus sclateri*), from Bartica Grove, stating that the specimens are rather smaller than those from the type locality, with faint indication of striation on the throat; and by Sclater (*Cat. Birds Br. Mus.* 1890, xv, p. 95, sub nom. *Automolus sclateri*) from Camacusa and Bartica Grove. *Automolus sclateri* (Pelzeln) is a pure synonym of *Automolus infuscatus* Sclater, having been proposed by Pelzeln (*Orn. Bras.*, 1867, i, p. 41) on the assumption that the name *Automolus infuscatus* was preoccupied by *Anabates infuscatus* Bonaparte, which, however, proves to be a *nomen nudum* (Cf. Hellmayr, *Nov. Zool.*, 1905, xii, p. 279). Mr. Beebe lists both *infuscatus* and *cervicalis*, apparently considering them two distinct species, the former only being starred as new to the Colony. Hellmayr (*Nov. Zool.*, 1906, xiii, p. 335) says that "the specimens of *Automolus sclateri* from British Guiana in the British Museum are absolutely identical with the type of *P. cervicalis*," and states that the type of *P. cervicalis* is an immature bird. He lists the Guiana form, which differs from true *infuscatus*, as *Automolus infuscatus cervicalis* (Sclater), type locality "Camacusa and Bartica Grove."

Apparently, then, records of *A. infuscatus*, *A. sclateri*, and *A. cervicalis*, in Br. Guiana, apply to the same bird.

**Sclerurus rufigularis** PELZELN.—Hellmayr (*Nov. Zool.*, 1906, xiii, p. 364) mentions an immature bird from Takutu River, Br. Guiana, and says (*l. c.*, p. 365) that there is a specimen in the British Museum collected by Whately at Bartica Grove. He also says that the Br. Guiana Museum has a ♂ from Ourumee.

**Xiphorhynchus guttatoides** (LAFRESNAYE).—The form *guttatoides* of Colombia, is a subspecies of *Xiphorhynchus guttatus* Lichtenstein, of which the race inhabiting Br. Guiana is *X. g. sororius* (Berlepsch and Hartert), type locality Perico, Orinoco River. Berlepsch and Hartert (*Nov. Zool.*, 1902, ix, p. 63), who originally described this form as *Dendromis rostripallens sororia*, mention a specimen from Quonja, Br. Guiana,

coll. Whitely, agreeing with birds from Perico. Schomburgk (*l. c.*, p. 690, sub nom. *Dendrocolaptes guttatus*) says he found it throughout Br. Guiana; Salvin (*l. c.*, 1885, p. 422), referring to it as *Dendroornis guttatoides*, records a specimen from Bartica Grove; and Dawson (*l. c.*, p. 29) lists it under the same name. Quelch (*Animal Life in Br. Guiana*, 1901, p. 177), speaking of *Dendroornis pardalotus* and *Dendroornis guttatoides*, says that one or both of these species will invariably be found in collections made in the forest districts.

**Elænia guianensis** BERLEPSCH.—The type locality of this species is Camacusa, British Guiana. It has been recorded by Salvin (*l. c.*, 1885, p. 295) as *Elainea elegans*, from Bartica Grove, Camacusa, etc.; by Sclater (*Cat. Birds Br. Mus.*, 1888, xiv, p. 150) as *Elainea gaimardi*, from Roraima; and by Dawson (*l. c.*, p. 13) as *Myiopagis gaimardi*. The Br. Guiana form now stands, *Myiopagis gaimardii guianensis* (Berlepsch).

**Empidochanes fuscatus cabanisi** LÉOTAUD.—Recorded by Salvin (*l. c.*, 1885, p. 297, sub nom. *Empidochanes olivus*) from Bartica Grove; and by Sclater (*Cat. Birds Br. Mus.*, 1888, xiv, p. 224, sub nom. *Empidonax oliva*), who states that this is the northern form of *E. bimaculatus* (d'Orb. and Lafr.), adding that he was doubtful whether it was really entitled to the name *oliva*. The type locality of *cabanisi* is Trinidad. The form inhabiting Cayenne is *Empidochanes fuscatus fumosus* Berlepsch, to which we suppose the Surinam bird also belongs.

**Riparia riparia** (LINNÉ).—Recorded by Salvin (*l. c.*, 1885, p. 206) as *Cotile riparia*, from Bartica Grove.

**Sporophila bouvronides** (LESSON).—Brabourne and Chubb (*Birds of South America*, 1912, i, p. 367) refer *S. ocellata* (Scl. and Salv.) to this species, and give the type locality Trinidad. References to *S. ocellata* in Guiana probably apply to the same bird which Mr. Beebe had in hand. Mr. Beebe also lists *S. lineola* (Linn.). Sharpe (*Cat. Birds Br. Mus.*, 1888, xii, p. 130) lists *S. ocellata* from Carimang River, Br. Guiana. Dawson (*l. c.*, p. 48) mentions both *ocellata* and *lineola*.

**Thraupis palmarum palmarum**. (WIED).—Schomburgk (*l. c.*, p. 670, sub nom. *Tanagra olivascens*) states that it is abundant at the coast. It has been recorded by Salvin (*l. c.*, 1885, p. 210) from Bartica Grove and Roraima; by Quelch (*Timehri*, 1891, p. 81; Reprint, p. 13) who says it is common in Georgetown, mentioning the species again later (*Animal Life in Br. Guiana*, 1901, p. 113); by Price (*Timehri*, 1891, p. 63) who describes the eggs; by Percival (*l. c.*, p. 16) who states that it is "not very often seen in the Gardens, though common among the innumerable cocoanut palms in and about town," where the writer also has seen it; and by Dawson (*l. c.*, p. 46; and *Timehri*, 1911, p. 272). The type locality of *palmarum* is Bahia, and judging from material examined, I would say that birds from Cayenne, Surinam, and Br. Guiana, differ distinctly from true *palmarum*, and are more nearly allied to, if not indistinguishable from, the Eastern Peruvian race, *Thraupis palmarum melanoptera* (Sclater).

**Saucerottia erythronota** (LESSON).—With reference to this species

also marked with a star, we do not find in Mr. Beebe's list *Agyrtrina fimbriata fimbriata* (Gmelin), which is common in Br. Guiana, and which has been recorded from Bartica by Chubb (*l. c.*, p. 395). This bird has sometimes been confused with *Saucerottia erythronota* (Cf. Salvin, Cat. Birds Br. Mus., 1892, xvi, p. 187) and has been listed from Bartica by Salvin (*Ibis*, 1885, p. 435) under the name *Agyrtria tobaci* of which *erythronota*, type locality Trinidad, is a subspecies.

A longer stay at Bartica, no doubt would have augmented Mr. Beebe's list considerably. For instance, Mr. Chubb, in his work on the birds of British Guiana, records twenty-seven species in the McConnell Collection, which are not included in Mr. Beebe's list.

In Chapter XIII we find an account of the author's ornithological discoveries, pertaining mostly to nests and eggs, with excellent photographic illustrations. Some of these discoveries, however, are by no means entirely new, reliable information on nests and eggs having been published in regard to at least twelve of the seventeen species discussed. Attention is called to the following records:

**Chæmepelia talpacoti** (TEMMINCK AND KNIP).—Dagleish (*Proc. Roy. Phys. Soc. Edinburgh*, 1889, x, p. 86) describes two nests, each containing two eggs, found Nov. 20, 1886, in Paraguay. Nehr Korn (Kat Eiersamm, 1899, p. 184) lists eggs from Paraguay,  $23 \times 18$  mm. Euler (*Rev. Mus. Paulista*, 1900, iv, p. 98) describes nests and eggs,  $22.5 \times 18$  mm. Ihering (*Rev. Mus. Paulista*, 1900, iv, p. 282) describes nest and eggs, and says that he found a nest built upon the deserted nest of another bird, containing two eggs,  $22 \times 17$  mm. F. P. and A. P. Penard (*l. c.*, 1908, i, p. 340) describe habits, nests, and eggs under *C. rufipennis*, assuming *talpacoti* and *rufipennis* identical in Surinam, judging from specimens which had been identified for them in England as *rufipennis*. Apparently there is some confusion here, and the bird identified as *rufipennis* was probably the newly described *Chæmepelia arthuri* Bangs and Penard (*Bull. M. C. Z.* 1917, p. 45).

**Geotrygon [= Oreopelia] montana** (LINNÉ).—Eggs listed by Nehr Korn (*l. c.*, p. 186) from Rio Grande, Mexico, and Porto Rico, brownish,  $27 \times 21$  mm. F. P. and A. P. Penard (*l. c.*, 1908, i, p. 347) say that the nest is very much like that of *Leptoptila*, placed on low branches of trees and in bushes; eggs, short-elliptical, brownish cream-color,  $27 \times 21.5$  mm.; breeds in the Dry Season. Site, nest, and eggs, have also been described by Lawrence (*Proc. U. S. N. M.*, 1879, i, p. 276), by Wells (*Ibid.*, 1887, p. 625), and by Scott (*Auk*, 1892, ix, p. 124, quoting Taylor).

**Porzana albicollis** (VIEILLOT).—Nehr Korn (*l. c.*, p. 202) describes eggs from Surinam, meas.  $35 \times 26$  mm. Ihering (*l. c.* p. 286) describes

eggs received from Iguape, meas.  $35-26 \times 27-28$ ; he says that the eggs described by Euler (*l. c.*, p. 102) undoubtedly belong to another species. F. P. and A. P. Penard (*l. c.*, 1908, i, p. 206) describe habits, site, nest, and eggs, meas.  $35 \times 27$  mm.

**Creciscus viridis** (P. L. S. MÜLLER).—Nehrkorn (*l. c.*, p. 203) describes eggs from "Guyana," meas.  $32 \times 23$  mm. F. P. and A. P. Penard (*l. c.*, 1908, i, p. 210) describe habits, nest, and site fully; eggs two, rarely three, usually oval, pure white, almost without gloss, meas.  $32 \times 26$  mm.; they say further that the eggs do not vary much, some having a few black-brown spots at the large end; in the nests are often found infertile and abnormal eggs.

**Caprimulgus [= Nyctipolus] nigrescens** CABANIS.—Nehrkorn (*l. c.*, p. 156) lists eggs from Amazonia, meas.  $23.5 \times 18.5$  mm. F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 78) describe eggs, one or two, barely glossy, elliptical, pale yellowish-rose, distinctly spotted and blotched with chocolate-brown and purple-gray, meas.  $25 \times 18.5$  mm. The eggs described by Schomburgk (*l. c.*, p. 711) must have belonged to another species.

**Empidonomus varius varius** (VIEILLOT).—Mr. Beebe (*l. c.*, p. 225) states that "although the eggs of this species have been collected no description of the nest has been given. "We would call attention to description of a nest by Ihering (Rev. Mus. Paulista, 1914, ix, p. 443 and p. 482); the nest was collected by Garbe near Joazeiro, Bahia, in November, 1913.

**Pipra aureola aureola** (LINNÉ).—F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 188) describe site and nest fully, giving measurements; the eggs are described as two, dull brownish gray, with numerous dark-brown spots, streaks, and dots, over the entire surface, but usually, on one of the eggs of a clutch, forming a wreath at the middle; meas.  $21 \times 15.5$  mm.

**Cyanerpes cyaneus cyaneus** (LINNÉ).—F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 475) say that the nests and eggs,  $20 \times 14$  mm., do not differ much from those of *C. cærulea*, under which name they give full descriptions of nests and eggs. The eggs are described as two in number, oval, almost without gloss, black or purplish black-brown. The nest is described as made of little black roots, pear-shaped or shoe-shaped, with entrance low down at the side, measuring 16 cm. high and 9 cm. across, suspended like the nest of *Todirostrum* from twigs two to five feet from ground. J. A. Allen (Bull. Am. Mus. Nat. Hist., 1891, iii, p. 348) under the name *Arbelorhina cyanea* describes an egg collected by H. H. Smith, "taken with parents, Oct. 13, 1882," in Matto Grosso, Brazil, but judging from the description, it must have belonged to some other species.

Under the general heading of "Seed eaters" Mr. Beebe (*l. c.*, p. 237), speaking of *Oryzoborus angolensis brevirostris*, *Oryzoborus crassirostris*, and *Sporophila castaneiventris*, says, "Familiarity breeds contempt. There could be no truer saying than where these little finches were concerned. In spite of diligent search through all the few reports and excerpts on the

subject, no description of the home or eggs of these birds could be found, and yet, in April and May, their nests were everywhere." H. Lloyd Price, in his paper on "The Nests and Eggs of some common Guiana Birds" (Timehri, 1891, p. 64), says in a general way, "Various species of small finches or grass birds (*Spermophila*, etc.), build tiny nests in the long grass growing at the sides of the trenches; they are generally made of dry grass, and occasionally of dry sticks. The eggs, two in number, are of a greyish white spotted with either red, brown or grey, and of various sizes." Much more definite information in regard to the breeding habits, nests, and eggs of the seed-eaters will be found in the works of F. P. and A. P. Penard, Ihering, Euler, and Nehr Korn. We would call attention to the following accounts pertaining to the species mentioned by Mr. Beebe:

**Oryzoborus angolensis brevirostris** BERLEFSCH.—Nehr Korn (*l. c.*, p. 105) describes eggs from Brazil. Ihering (Rev. Mus. Paulista, 1900, iv, p. 213) describes nest and eggs. F. P. and A. P. Penard (*l. c.* 1910, ii, p. 388) says that the nest is smaller than that of *O. crassirostris*; the eggs are fully described. All these authors deal with this species under the name *O. torridus*.

**Sporophila castaneiventris** CABANIS.—Nehr Korn (*l. c.*, p. 105) describes eggs from Amazonia. F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 389) describe habits, nest, and eggs fully. They add the following interesting remarks (translated): "The examples vary very much in form and color as well as in measurements. In many the markings form a distinct wreath about the larger end, others being uniformly covered with gray-brown or brown. Those with wreathed ends are usually of a more oval shape than the evenly covered eggs, but both types are often found together in the same nest. It is thought [by the natives] that the more pointed egg hatches the male, and the browner egg the female. Eggs of a more spherical shape are less common with this species than with the next [*S. minuta*]."

**Oryzoborus crassirostris crassirostris** (GMELIN).—F. P. and A. P. Penard (*l. c.* 1910, ii, p. 387) describe habits, nest, and eggs fully, with similar remarks in regard to variations in shape and coloration of eggs, both types sometimes being found in the same nest.

**Sporophila bouvronides** (LESSON). F. P. and A. P. Penard (*l. c.*, 1910, ii, p. 392, sub nom. *S. ocellata*) compare nest to that of *S. minuta*, and eggs with those of *S. castaneiventris*, but say that the eggs of this species average a little longer and also a little grayer, with remarks in regard to the two types of eggs.

In another chapter the author gives much interesting information regarding the habits of Tinamous. By an ingenious experiment he is led to the discovery that birds of the genus *Tinamus* sleep at night in trees, while those of the genus *Crypturus* always pass the night upon the ground. He accordingly correlates this difference

in habits to the character of the back of the tarsus, which in *Tinamus* is rough, and in *Crypturus* quite smooth. He goes on to say (*l. c.*, p. 255):

"These two distinctions have been recognized for many years—*Tinamus* for more than one hundred and thirty, and *Crypturus* for a hundred and six years, and during all this time ornithologists have accepted this character without thought or question."

I may say that the roosting habits of Tinamous are well known to hunters in Surinam, and according to Mr. Beebe himself they were not unknown to his Akawai hunter, Nupee, in whose statements, however, Mr. Beebe seemed disposed to place less confidence than in his own experiment, notwithstanding the fact that in either case conclusive evidence could only be sought in actual observation in the field.

Nearly one hundred years ago Charles Waterton (*Wanderings in South America*, 1825, p. 286) called attention to these habits and suggested that the state of the tarsus might have some bearing upon them. These are his words:

"There is something remarkable in the great Tinamou, which I suspect has hitherto escaped notice. It invariably roosts in trees; but the feet are so very small in proportion to the body of this bulky bird, that they can be of no use to it in grasping the branch; and, moreover, the hind toe is so short, that it does not touch the ground when the bird is walking. The back part of the leg, just below the knee, is quite flat, and somewhat concave. On it are strong pointed scales, which are very rough, and catch your finger as you move it along from the knee to the toe. Now, by means of these scales, and the particular flatness of that part of the leg, the bird is enabled to sleep in safety upon the branch of a tree."

In regard to the "small Tinamou," Waterton (*Ibid.*, p. 287) says, "The foot of this bird is very small in proportion, but the back part of the leg bears no resemblance to that of the larger Tinamou; hence one might conclude that it sleeps on the ground."

Here then, we have at least one naturalist to whom "the casual, nominal affair between Hermann and Illiger versus *Tinamus* and *Crypturus*" was not all.

But Waterton was not the only writer who has mentioned these things. Schomburgk, (*l. c.*, p. 749) under the name *Trachypelmus subcristatus* [= *Tinamus major* (Gmel.)], speaks of the relation of



the rough tarsus to the bird's habit of roosting in trees, but under *Crypturus variegatus* (Wagler) (*Ibid.*, p. 748) says that he does not know whether that species also passes the night in trees. More recently F. P. and A. P. Penard, under the names *Tinamus sub-cristatus* (*l. c.* 1908, i, p. 318) and *Crypturus variegatus* (*Ibid.*, p. 322) definitely state the bearing of the construction of the tarsi in these two genera upon the dissimilarity in roosting habits.

Mr. Beebe's discoveries in regard to the homes of Toucans, also, are extremely interesting, although the state of affairs regarding our knowledge of the life history of Toucans was really not so scanty as conveyed by the few words of Levaillant which the author quotes. It may be of interest to call attention here to a Toucan egg said to be of *Ramphastos ariel* Vigors, collected by Krone at Iguape, and recorded by Ihering (*Rev. Mus. Paulista*, 1900, iv, p. 262). It is described as oval, measuring  $37 \times 28$  mm., white, with deep pits on the surface. Schomburgk, Burmeister, and others from time to time, have mentioned Toucan eggs, but beyond saying that the eggs were white, two in number, laid in holes in trees, they did not give much information.

In concluding I wish to emphasize that I appreciate fully Mr. Beebe's good work at the research station in British Guiana, and my remarks should not be construed as having been made with the purpose of depreciating the excellent publication, of which I have discussed, after all, only some very unimportant details.

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## PROBLEMS SUGGESTED BY NESTS OF WARBLERS OF THE GENUS *DENDROICA*.

BY JOHN TREADWELL NICHOLS.

The genus *Dendroica* with center of abundance in eastern North America, containing numerous closely related birds, inhabiting in a general way the same region and boldly contrasted the one from the other in plumage, constitutes a striking natural phenomenon calling for explanation.<sup>1</sup>

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<sup>1</sup> Nichols, J. T., *American Naturalist*. September, 1916; pp. 565-574.