

and held with one foot, in the first instance, keeping the other in rest. This, it turned out, was a brilliant manœuvre on the part of the bird, for the moment the stricken fox turned his head viciously to snap at the thing holding him, he received the eagle's spare foot full in the face, and was forthwith rendered powerless. "The strong and curved claws speedily muzzled him, and after a few desperate bounds in the air, he almost gave up struggling, being held as in a trap until the falconer ran up, and with his *couteau de chasse* gave him the finishing stroke." In parts of European Russia trained Golden Eagles are regularly exposed for sale and realize very high prices, being used on large game for which the Goshawk would be unsuitable. About the middle of the last century a Captain Green, of the British army, and resident in England, tamed and trained a Golden Eagle to catch hares and rabbits. Authentic accounts of this bird relate that it was "fairly tractable," but its "great weight and the difficulty of keeping it keen (owing to its power of fasting) made it too troublesome to manage satisfactorily." Evidently the Russian and Khirghiz falconers have overcome these difficulties. (See Harting, *op. cit.*, pp. 170-175.)

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NOTES ON THE BROAD-WINGED HAWKS OF THE  
WEST INDIES, WITH DESCRIPTION OF  
A NEW FORM.<sup>1</sup>

BY J. H. RILEY.

EVER since the summer of 1904, when working upon a small collection of birds from Barbuda and Antigua, British West Indies, I have had in mind three specimens of immature hawks which were then provisionally (though doubtfully) referred to *Buteo platypterus*. Since then, they have been shown to numerous visiting and resident ornithologists, all of whom have declared they had never seen the immature northern bird in similar plumage.

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<sup>1</sup> By permission of the Secretary of the Smithsonian Institution.

Last winter, upon Mr. Outram Bangs visiting Washington, I took advantage of the occasion to show them to him, whereupon he very kindly offered to send me his series from the Antilles for comparison. This he has now done, and I take this opportunity of extending my thanks, for without this series the following notes would have been impossible. Mr. Bangs's series of fifteen birds is a very fine one, embracing specimens from Cuba, Dominica, and St. Vincent, including the type of *Buteo antillarum* Clark. These, in conjunction with the series in the U. S. National Museum, have enabled me to examine over fifty specimens from the various parts of the range of this species, and it is to be hoped, settle the status of the West Indian forms.

After careful comparison of this material, I am prepared to recognize four forms of "Broad-wings" in the West Indies, as shown below.

1. *Buteo platypterus platypterus* (Vieillot).

- ? *Falco fuscus*<sup>1</sup> MILLER, Various Subjects Nat. Hist., Pt. 3, 1777, pl. 18.—SHAW, *Cimelia Physica*, 1796, 35, pl. 18 (North America).  
 ? [*Falco*] *fuscus* GMELIN, Syst. Nat., I, i, 1788, 280 (based on Miller pl. 18; not of Gmelin, p. 271).—LATHAM, Index Ornith., I, 1790, 43, no. 103 (same basis).  
 ? [*Falco*] *cincrasceus* BECHSTEIN, Latham's allgemeine Uebersicht der Vögel, IV, 1811, 36 (based on Latham, Index, I, 43, no. 103).  
*Falco pennsylvanicus* WILSON, Am. Orn., VI, 1812, 92, pl. 54, f. 1 (near the Schuylkill, Penn.; not of Wilson, t. c. 13, pl. 46, f. 1).

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<sup>1</sup> *Falco fuscus*, although commonly attributed to Gmelin, and supposed to represent the Sharp-shinned Hawk (*Accipiter velox* of American authors), was first proposed by J. F. Miller, in a work entitled "Various Subjects of Natural History etc." (so quoted by Engelmann, Bibl. Hist.-Nat., 1846, 182), usually referred to by Gmelin, Latham, and other early authors as "Miller's Illustr." *Falco fuscus*, from North America, is the subject of plate 18, and an examination proves it to be an immature *Buteo*, probably *B. platypterus*, but the tail is too fulvous, and the dark brown sub-terminal band is much too narrow. However, for an old plate, it is a fairly good representation of the Broad-winged Hawk, but by no stretch of the imagination can it be made to do duty for an *Accipiter*. As this plate is the sole basis of Gmelin's description, it follows that *Falco fuscus* of that author cannot apply to the Sharp-shinned Hawk.

Miller's work was issued in six parts, of 6 plates each, and plate 18 occurs in part 3, dated 1777. As the work is very rare, it may be worth mentioning that the plates (with the same names and notation), with some additional ones, were reissued in 1796, as the "*Cimelia Physica*," with enlarged text by George Shaw. Under this title the plates of Miller's 'Various Subjects' may be consulted in lieu of the rarer work. For much of the data on this subject I am indebted to Dr. C. W. Richmond.

- S*[*parvius*] *platypterus* VIEILLOT, Tabl. Encycl. Méthod., III, 1823, 1273 (founded on Wilson, pl. 54, f. 1).
- F*[*alco*] *Wilsonii* BONAPARTE, Jour. Acad. Nat. Sci. Phila., III, April, 1824, 348 (based on Wilson, VI, 92).
- F*[*alco*] *latissimus* BONAPARTE, Journ. Acad. Nat. Sci. Phila., III, April, 1824, 348, footnote (same basis as preceding).—ORD, Wilson's Am. Orn., 2 ed., 1824, 92 (dated 1812, but for correct date, see Faxon, Auk, 1901, 217).
- Buteo pennsylvanicus* BONAPARTE, Comp. List Birds Europe and N. Am., 1838, 3.—BREWER, Proc. Boston Soc. Nat. Hist., VII, 1860, 306 (Cuba).—CABANIS, Journ. für Orn., II, Suppl. 1855, lxxxii (Cuba).—GUNDLACH, Journ. für Orn., 1861, 403 (Cuba), 1871, 366 (Cuba); Orn. Cubana, 1876, 41; Anales Soc. Esp. Hist. Nat. Madrid, VII, 1878, 160 (Porto Rico).
- [*Buteo*] *pennsylvanicus* GUNDLACH, Journ. für Orn., 1861, 322 (Cuba).
- [*Buteo*] *pennsylvanicus* GUNDLACH, Repert. Fis.-Nat. Cuba, I, 1865-66, 223; Journ. für Orn., 1878, 158 (Porto Rico).—CORY, List Birds W. I., 1885, 22 (part).
- B*[*uteo*] *pennsylvanicus* GUNDLACH, Anales Soc. Esp. Hist. Nat. Madrid, II, 1873, 99 (Cuba).
- [*Buteo*] *pennsylvanicus* GUNDLACH, Journ. für Orn., 1874, 310 (Porto Rico).
- Buteo latissimus* LEMBEYE, Aves de Cuba, 1850, 19.—CORY, Auk, 1887, 40 (part); Birds W. I., 1889, 198 (part); Cat. Birds W. I., 1892, 99 (part).—GUNDLACH, Orn. Cubana, 1895, 21 (Cuba; habits, etc.).
- B*[*uteo*] *latissimus* LEMBEYE, Aves de Cuba, 1850, 127.
- Buteo platypterus* FAXON, Auk, 1901, 218.—A. O. U. COMM., Auk, 1901, 299.

A series of six adults (three males, two females, and one marked female, but probably wrongly sexed) from Cuba are uniformly clove brown above; with sides of neck, mantle, lesser wing-coverts, and scapulars rather strongly edged with cinnamon-rufous; below, the barring is cinnamon-rufous, heavier on the chest. Birds from the eastern United States exhibit apparently two phases of plumage; a light grayish brown backed bird with little or no reddish edges to the feathers, and with the bars below prout's brown; and a dark bird with the feathers of the sides of neck and upper back strongly edged with cinnamon-rufous, and the bars below of the latter color, heavier, and sometimes confluent on the chest. There are no individuals in the series from Cuba corresponding to the gray phase of the continent, but the dark phase is hardly or not at

all different from eastern United States examples. In size, the Cuban birds may average a trifle smaller, but not enough to warrant separating them as a race. Unfortunately there are no birds from Florida in the series examined by me, nor have I seen a specimen from Porto Rico, but judge specimens from the latter locality will not differ from Cuban examples.

Broad-winged Hawks from the United States usually have the irides brown, but Mr. Frank L. Burns writes me that they undergo many changes from pearl-gray of the young, to yellow and in one instance even red, and is inclined to think that the yellow irides are probably that of fully adult birds. In two apparently fully adult birds (one contained an egg ready for deposition, but was unfortunately broken by the fall of the bird) shot by Mr. William Palmer and me at San Diego de los Banos, western Cuba, the irides were brown, as in the majority of northern birds, but on the labels of three of Mr. Bang's specimens from eastern Cuba the color is noted as "straw yellow, with a brown wash." Gundlach<sup>1</sup> gives the color of Cuban specimens as "ochraceous with an inclination to dark gray," and in Porto Rican<sup>2</sup> specimens as "ochraceous-yellow, with a gray wash."

## 2. *Buteo platypterus antillarum* (Clark).

*Buteo pennsylvanicus* LAWRENCE, Proc. U. S. Nat. Mus., I, Oct. 15, 1878, 194 (St. Vincent); Feb. 13, 1879, 273 (Grenada); May, 1879, 487 (part).— LISTER, Ibis, 1880, 43 (St. Vincent).— ALLEN, Bull. Nuttall Orn. Club, V, 1880, 169 (Santa Lucia).— WELLS, List Birds Grenada, 1886, 6; Proc. U. S. Nat. Mus., IX, Feb. 11, 1887, 622 (Grenada; nest and eggs).— SCLATER, P. Z. S. London, 1889, 395 (Santa Lucia).

[*Buteo pennsylvanicus* CORY, List Birds W. I., 1885, 22 (part).

*Buteo latissimus* CORY, Auk, 1887, 40 (part), 96 (Martinique); Birds W. I., 1889, 198 (part); Cat. Birds W. I., 1892, 99 (part; ? Martinique, ? St. Lucia, St. Vincent, Bequia, Cannouan, Carriacou, ? Barbados).

*Buteo antillarum* CLARK, Proc. Biol. Soc. Wash., XVIII, Feb. 21, 1905, 62 (Chateaubelair, St. Vincent; type coll. E. A. & O. Bangs); Proc. Boston Soc. Nat. Hist., XXXII, No. 7, Oct., 1905, 241 (descr.; habits; eggs).

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<sup>1</sup> Orn. Cubana, 1895, 22.

<sup>2</sup> Anales Soc. Esp. Hist. Nat., VII, 1878, 161.

The bird named *Buteo antillarum* by Mr. A. H. Clark differs from the Cuban series principally in size, being smaller; in having the throat generally darker and the barring on the thighs averaging narrower; there are apparently no other differences.

Mr. Clark<sup>1</sup> gives the color of the irides of the St. Vincent bird as "yellowish white in all stages," and describes<sup>2</sup> the eggs as "dull bluish white in color and . . . unspotted," but Mr. J. G. Wells<sup>3</sup> says they are "buff color, spotted and blotched with reddish brown." This latter condition may be unusual, however.

The U. S. National Museum has an immature bird from Grenada, marked male, but probably a female, and an immature female from Tobago, which, though large for this form, probably belong to it, or are migrants from further north — an improbable supposition, as this hawk is not known to be a migrant in the West Indies, to my knowledge. Although I have only examined specimens of this form from two other islands of the Lesser Antilles, besides the above, I think I am safe in assigning the records from the following islands to it: ?Martinique, Santa Lucia, St. Vincent, Bequia, Mustique, Cannouan, Carriacou, Grenada, ?Tobago.

### 3. *Buteo platypterus rivierei* (A. H. Verrill).

*Buteo pennsylvanicus* LAWRENCE, Proc. U. S. Nat. Mus., I, July 30, 1878, 65 (Dominica).—SCLATER, P. Z. S. London, 1889, 326 (Dominica).

[*Buteo*] *pennsylvanicus* CORY, List Birds W. I., 1885, 22 (part).

*Buteo latissimus* Cory, Auk, 1887, 40 (part); Birds W. I., 1889, 198 (part); Cat. Birds W. I., 1892, 99 (part; Dominica).—G. E. Verrill, Trans. Conn. Acad. Arts and Sci., VIII, 1892, 325 (Dominica).

*Buteo (latissimus) rivierei* A. H. VERRILL, Addition[s] to the Avifauna of Dominica, no date, but published about Oct., 1905, p. — (Dominica; habits, etc.).

The series from Dominica are darker than specimens from St. Vincent, more sooty above, more heavily marked below, and with the bars darker, as has already been pointed out by Mr. A. H. Clark.<sup>4</sup>

<sup>1</sup> Proc. Biol. Soc. Wash., XVIII, 1905, 62.

<sup>2</sup> Proc. Boston Soc. Nat. Hist., XXXII, 1905, 243.

<sup>3</sup> Proc. U. S. Nat. Mus., IX, 1887, 622.

<sup>4</sup> Proc. Biol. Soc. Wash., XVIII, 1905, 63; Proc. Boston Soc. Nat. Hist., XXXII, 1905, 241.



In size there is very little difference between St. Vincent and Dominica specimens. This is probably a fairly well-marked insular form, depending upon its darker coloration for recognition.

Mr. A. H. Verrill, in his description of this form, gives the irides as "white or pale straw at all ages and in both sexes," and describes the eggs as "dull white, heavily washed and blotched with rufous, umber and grayish brown." If the measurements given by him are correct (1.80 by 1.50 to 1.85 by 1.55), the eggs seem to average smaller than eggs from the eastern United States.

#### 4. *Buteo platypterus insulicola* new subspecies.

*Buteo pennsylvanicus*? LAWRENCE, Proc. U. S. Nat. Mus., I, Dec. 10, 1878, 236 (Antigua).

[*Buteo*] *pennsylvanicus* CORY, List Birds W. I., 1885, 22 (part).

*Buteo latissimus* CORY, Auk, 1887, 40 (part); Birds W. I., 1889, 198 (part); Auk, 1891, 47 (Antigua; crit.); Cat. W. I. Birds, 1892, 99 (part; Antigua).

*Buteo platypterus* RILEY, Smithsonian Misc. Coll. (Quarterly Issue), XLVII, Nov. 8, 1904, 282 (crit.).

Type, U. S. National Museum, No. 119,349, male adult, Antigua, British West Indies, May 29, 1890. Collected by Cyrus S. Winch.

Frontal apex, lores, and a narrow line above and below the eye whitish, with some stiff black bristles; top of head and auriculars grayish brown, with darker shaft streaks; rictal streak darker; occiput white, with the feathers tipped rather broadly with sooty brown; back and rump blackish brown, the feathers of the upper back barred at their bases with white, and slightly edged with wood brown; upper tail-coverts black barred with white; tail black, tipped rather narrowly with dark drab and crossed by two rather wide white bars and an indication of a third that does not reach the shaft on individual feathers; scapulars color of the back, strongly barred with white for about two-thirds of their length, basally; primaries dull black on the outer web and tip, white on the inner web as far as the emargination on the outer feathers, but not reaching the shaft except at the base, the black increasing in area from the outer feathers inwards and turning to dark brown at the base and tip, leaving a large subterminal black band, a small black spot appearing on the inner web on the edge of the white of the second outer feather, increasing in number and intensity inwards on the other primaries, where they become interrupted bars not reaching entirely across the white to the inner web, however; secondaries and tertials grayish brown with a dull black subterminal band, the inner webs of the outer and the inner webs and bases of the inner feathers white, barred with dark brown; wing-coverts grayish brown; primary coverts dull blackish brown, irregularly barred with white on basal two-thirds of

inner webs, the white extending to outer webs at extreme base; lining of wing cream buff, sparsely spotted with small cinnamon spots; axillaries creamy white, with rather narrow bars of mars brown along the shaft; chin and throat white, with narrow dark brownish streakings; rest of underparts white, barred, spotted, or streaked comparatively lightly with mars brown, the streaking or barring heavier on the chest, decreasing on the abdomen, and ceasing entirely on the under tail-coverts; thighs narrowly barred with mars brown. Wing, 227; tail, 143; culmen, from cere, 18; tarsus, 56; middle toe, 28.5 mm.

Immature female.—U. S. National Museum, No. 191126, Antigua, B. W. I., Sept. 7, 1903. Collected by H. G. S. Branch.

Superciliary region and sides of face white, with a few fine brown streakings, these markings slightly heavier on the post-ocular streak, and more so on the rictal streak; lores, frons and top of head white, broadly streaked with blackish brown, the region in question having the appearance of being equally streaked with brown and white, the streaks much finer on lores and frons; cervix and sides of neck white, broadly streaked with sepia brown; mantle and rump sepia, the feathers narrowly edged with cinnamon-rufous, this edging more pronounced on the rump; upper tail-coverts white, barred with black; upper surface of tail white at the base, this color continuing a short distance down the shaft of the middle feathers, and down the inner web of the outer feathers almost to the tip, remainder of tail hair brown, narrowly edged with white at the tip, with a sub-terminal band of clove-brown, and four or five irregular bars of lighter brown; lesser wing-coverts sepia, with narrow edgings of cinnamon-rufous; middle and greater wing-coverts sepia, irregularly barred and edged with white and a little cinnamon-rufous; alula sepia, white on the inner webs of the feathers, with sepia barrings and some cinnamon-rufous edgings; primary coverts white at the base, on the inner webs, and edging at the tip, sepia on the outer web and inner web on terminal portion with just a trace of cinnamon-rufous, the inner web obsoletely barred with brown; primaries dark brown, darker on the outer feathers, and becoming lighter on the others towards the base, until the ground color of the whole feather gradually becomes uniform dark hair brown on the outer web, all (except the first) narrowly edged at the tip and rather broadly at the base on the outer web with white, the white on the outer web stippled with brown, the inner webs of all the feathers (as far as the emargination on the outer three, and further on the rest) white, barred with black; these bars extend across the brown of the outer but never reach entirely across the white of the inner web; secondaries dark hair brown, white on the inner web, and edged with white at tip and barred with black; tertials white, barred with sepia; scapulars white, barred and tipped with sepia; lining of wing pinkish buff, with a few faint shaft streaks at carpal joint; below creamy white, the jugulum crossed by a scattering band of sparse tear-shaped spots of sepia, the rest of the underparts almost immaculate, except for a few small scattering spots on the flanks, and a few hair lines of sepia on the breast; thighs creamy buff, rather sparsely marked with V-shaped sepia bars.

Another immature female, taken by Mr. Branch at the same time and place (U. S. National Museum, No. 191127), is darker on the back, the feathers more heavily edged with cinnamon-rufous; the markings below are slightly more numerous, and the tail is of a different pattern. The middle feathers are without bars except for the dark subterminal band; the other feathers of the tail are not essentially different from No. 191126, described above, except that the bars are obsolete on the outer web, and on the inner web of the pair next the middle feathers the bars become obsolete towards the base, being broken up into fine spots and stippling. The tail when closed is almost plain dark hair brown, tipped with lighter brown, and with a subterminal dark band, the extreme base white, stippled with brown.

A third immature female obtained on the same island by Mr. Branch (U. S. National Museum, No. 191128, Nov. 26, 1903), is darker than either of the specimens just described, and differs in the pattern of the tail, which is similar to that of the adult. Below, it has begun to acquire a few russet streaks on the chest; the thighs are almost without markings, but otherwise it is not essentially different from the other two.

*Remarks.*—In a large series of immature specimens of *Buteo p. platypterus* from various parts of its range, and of *B. p. antillarum* from St. Vincent, Grenada, and Tobago, and of *B. p. rivierei* from Dominica, I am unable to find anything approaching the three specimens above described.

The adult is much lighter and smaller than *B. p. antillarum*, and the bars below are narrower and less sharply defined. It is certainly a well-marked insular race, not coming into close contact with any of its relatives on the north or south.

The following table of measurements gives the averages in millimeters, for comparison. I have discarded a number of measurements where the sex was apparently incorrectly determined.

<i>Males:</i>	Wing.	Tail.	Culmen from cere.	{Tarsus.	Middle toe.
4 adults from eastern U. S. . . . .	265.2	152.4	18	62.5	33.1
2 adults (unsexed) from Costa Rica . . . . .	269	154	18 <sup>2</sup>	61	33.2
3 adults from Cuba . . . . .	263.3	154.7	18.8	58.3	32.3
4 examples from St. Vincent <sup>1</sup> . . . . .	252.7	151.1	18.1	54.7	30.8
2 adults from Dominica . . . . .	257.5	151.5	19.2	59.2	31
1 adult from Antigua . . . . .	227	143	18.7	57.7	31

<sup>1</sup> 3 fully grown, but in immature plumage.

<sup>2</sup> One specimen.



<i>Females:</i>	Wing.	Tail.	Culmen from cere.	Tar-sus.	Middle toe.
4 adults from eastern U. S. . . . .	282	160.8	19.5	58.5	32.7
1 <sup>1</sup> adult from Mirador, Vera Cruz, Mex.	293	167	—	61.5	33.5
1 <sup>1</sup> adult Chitra, Veragua . . . . .	280	163.5	20	64	30.5
2 adults from Cuba . . . . .	272	160.8	20.5	62	33.3
4 adults from St. Vincent . . . . .	265	153.9	18.6	56.2	32.5
1 adult from Dominica . . . . .	263	154	20	57	32.5
1 immature, marked male but probably female, Granada . . . . .	276	163	19.5	55.5	33.5
1 immature from Tobago . . . . .	271	171	—	60	30
3 immatures from Antigua . . . . .	252	149.2	18.7	57.7	31

## RECENT NOTES ON BIRDS OF EASTERN PENNSYLVANIA.

BY RICHARD C. HARLOW.

THE ever changing conditions which are so rapidly encompassing large tracts of our commonwealth naturally necessitate faunal changes. The instinct of faunal distribution in many cases is sacrificed to the greater demand for congenial environment. In this respect different localities affect different divisions of bird life. Among the mountains of Pennsylvania, for instance, we find the element of the Canadian Fauna in the shape of numerous Warblers, Thrushes and Flycatchers steadily decreasing while about Philadelphia it is the Water Birds that have to bear the weight of the onslaught. The cutting off of the large timber has affected the Herons; the draining and filling up of the swampy areas has compelled the Rails to seek other localities, but the Land Birds live on, for the greater part unmolested.

Since Mr. Stone's valuable work on the 'Birds of Eastern Penn-

<sup>1</sup> Unsexed.