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2000., UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES.

F. V. HAYDEN, U. S. GEOLOGIST-IN-CHARGE. 1876. 2.

I.—STUDIES OF THE AMERICAN FALCONIDÆ.

BY ROBERT RIDGWAY.

II.—ORNITHOLOGY OF GUADELOUPE ISLAND.

BY ROBERT RIDGWAY.

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STUDIES OF THE AMERICAN FALCONIDÆ.

BY ROBERT RIDGWAY.

GENUS NISUS, CUVIER.

INTRODUCTION.

The latest authority on the birds of the family to which the genus *Nisus* belongs (the "Catalogue of the Accipitres, or Diurnal Birds of Prey, in the Collection of the British Museum", by Mr. R. Bowdler Sharpe*) allows eleven American species which we consider as belonging to this genus as properly restricted, they being included in that work in the genus "*Accipiter*." The species recognized by Mr. Sharpe are the following:—

- (1.) "2. *Accipiter fuscus*." (p. 135.)
- (2.) "3. *Accipiter cooperi*." (p. 137.)
- (3.) "4. *Accipiter tinus*." (p. 139.)
- (4.) "8. *Accipiter collaris*." (p. 144.)
- (5.) "13. *Accipiter erythrocnemis*." (p. 147.)
- (6.) "14. *Accipiter chionogaster*." (p. 148.)
- (7.) "16. *Accipiter ventralis*." (p. 149.)
- (8.) "19. *Accipiter guttatus*." (p. 152.)
- (9.) "20. *Accipiter pileatus*." (p. 153.)
- (10.) "21. *Accipiter bicolor*." (p. 154.)
- (11.) "22. *Accipiter chilensis*." (p. 155.)

Besides the above, two species which are probably closely allied to this group, are given, but it seems to us erroneously, under the genus *Astur*, these being the *Falco poliogaster* of TEMMINCK and the *Astur pectoralis* of BONAPARTE. These two remarkable and rare species we have had no opportunity to examine, in order to verify the propriety of including them in the genus *Astur*, but the probability is very strong that they will prove subgenerically, if not generically, distinct from the typical members of that genus.

To aid us in the study of this difficult group, we have had access to the collections of the principal museums of the United States; the National museum, at Washington, the collection of the Philadelphia Academy of Natural Sciences, the American Museum at Central Park in New York City, the museum of the Boston Society of Natural History, and the Museum of Comparative Zoölogy at Cambridge, Mass., furnishing the bulk of the material. Two species not known to exist in any American museum were furnished for examination by Mr. Osbert Salvin, of England, who kindly loaned his large and elegant series of these birds for the purpose; the unique type of another was obtained from the museum of Vassar College, Poughkeepsie, N. Y., through the courtesy of Professor James Orton, its collector; and Mr. George N. Lawrence, of

* London, 1874, 8 vo., pp. 479, pls. xiv.

New York, forwarded his large and remarkably fine collection for study in this connection. Altogether, we have been enabled to examine and compare upward of four hundred specimens, including thirteen species, as follows:—

List of species and specimens examined.

	U. S. Nat. Mus.	Mus. Philad. Acad.	Amer. Mus. N. Y.	Mus. Boston Soc.	Mus. Comp. Zool.	Mus. G. N. Lawrence.	Mus. O. Salvin.	Mus. Vassar College.	Mus. S. F. Baird.	Mus. R. Ridgway.	Other collections.	Total.
1. <i>Nisus cooperi</i>	75	18	3	4	3	9	.....	.....	6	7	3	128
2. <i>Nisus gundlachi</i>	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
3. <i>Nisus bicolor</i>	8	3	1	2	.....	5	.....	.....	.....	.....	.....	21
4. <i>Nisus pileatus</i>	5	.....	.....	7	1	.....	.....	.....	.....	.....	.....	13
5. <i>Nisus chilensis</i>	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
6. <i>Nisus chionogaster</i> .....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....	.....	7
7. <i>Nisus salvini</i> .....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2
8. <i>Nisus ventralis</i>	2	6	.....	.....	.....	2	8	.....	.....	.....	.....	18
9. <i>Nisus nigroplumbeus</i> .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
10. <i>Nisus erythrocnemis</i>	3	3	1	.....	.....	1	3	.....	.....	.....	.....	11
11. <i>Nisus fuscus</i>	120	14	7	5	9	1	12	.....	2	8	4	182
12. <i>Nisus tinus</i> .....	.....	3	3	2	.....	2	7	.....	.....	1	.....	18
13. <i>Nisus collaris</i> .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	218	50	15	20	13	20	39	1	8	16	7	407

Of the above-named species, three are not included by Mr. Sharpe: *N. gundlachi*, being mentioned in a foot-note, and doubtfully referred to *N. cooperi*; *N. nigroplumbeus*, is referred to *N. ventralis*, while *N. salvini* is new, and first named here. On the other hand, there are two species of this genus which we have not seen, viz, *N. guttatus* and *N. fringilloides*, both of which appear to be perfectly distinct.

Subgenera.

Regarding subgeneric divisions of the above group of species, several have been proposed and named, but we are unable to make out more than two which are capable of definition; these two groups constitute quite distinct subgenera, and may be characterized as follows:—

NISUS.—Five outer primaries, with inner webs emarginated; fourth or fifth quills longest; inner toe not reaching middle of second joint of middle toe.

HIERASPIZIAS.—Four outer primaries, with inner webs emarginated; third or fourth quills longest; inner toe reaching to or beyond middle of second joint of middle toe.

SUBGENUS NISUS, CUVIER.

Accipiter BRISSON, Orn. i, 1760, 10.—Type, *Falco nisus* Linn. (= *N. fringillarius*).

Nisus CUVIER, Leçons Anat. Comp. i, tabl. ois. 1799.—Same type.

Icrax LEACH, Syst. Cat. Mam. etc. Brit. Mus. 1816, 10.—Same type.

Cooperastur BONAPARTE, Rev. et Mag. de Zool. 1854, 538.—Type, *Falco stanleyi* Aud. (= *N. cooperi*).

Leptohierax SUNDEVALL, Disp. Acc. Hemeroharp, 1872, 24.—Same type.

CHARACTERS.—Five outer primaries with inner webs emarginated; fourth or fifth quills longest; inner toe reaching scarcely beyond the first joint of the middle toe, or falling short of it.

Notwithstanding the wide difference in size between the larger and smaller species of this subgenus, it is absolutely impossible to make a further subdivision of the group, since no characters exist upon which to found such a distinction. Indeed, each *species* presents greater variations of size and proportions dependent on sex than exist between the majority of the species. For example, in *N. cooperi*, one of the larger species, the maximum measurements are:—Wing, 11.00; tail, 10.50; culmen, 0.80; tarsus, 2.85; and middle toe, 1.85; while in *N. fuscus*, one of the smaller species, the minimum is:—Wing, 6.35; tail, 5.50; culmen, 0.35; tarsus, 1.85; middle toe, 1.10, an average difference of nearly one-half in dimensions between the female of *cooperi* and the male of *fuscus*; but reversing the sexes, we have, as the minimum measurements of *cooperi*:—Wing, 8.70; tail, 7.80; culmen, 0.58; tarsus, 2.30; middle toe, 1.45; and as the maximum of *fuscus*:—Wing, 8.80; tail, 8.20; culmen, 0.60; tarsus, 2.30; middle toe, 1.55—the conspicuous difference being thus completely lost. As regards proportions of the toes, the male of *cooperi* and the female of *fuscus* (typical representatives of the two extremes of size) have the inner toe reaching to a little beyond the first joint of the middle toe; but, in the male of *fuscus*, it falls considerably short of the first articulation. The latter has usually the scutellæ fused into a continuous plate; but the female, particularly in the immature stage, has the scutellæ very distinctly defined. The latter condition is almost universal in *cooperi*; but an adult male in our collection (No. 2554) has as completely “booted” a tarsus as any example of *fuscus* we have seen.

The sexual differences in plumage are inconsiderable, or, practically, inappreciable; but the young and old are entirely different in colors and markings, there being usually no resemblance whatever, except in the tail, which is much the same at all ages in each species. It is this fact, and the lack of any other available character to answer the purpose, that has induced us to attach so much importance to the tail-bands in our key to the species.

The following table of measurements will serve to show the comparative size of the species as well as the limits of variation in each. A wider range would doubtless be shown in several of these had we a larger series for measurement, there being in the annexed table one or two instances where but one sex is represented.

Comparative measurements of American species of NISUS.

	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.
1. <i>Nisus cooperi</i>	8.70-11.00	7.80-10.50	0.58-0.80	2.30-2.85	1.45-1.85
2. <i>Nisus chilensis</i>	8.25- 9.90	7.65- 8.50	0.50-0.70	2.25-2.65	1.40-1.70
3. <i>Nisus guttatus</i>	8.50-10.50	6.80- 8.50	0.60	2.40-2.65	-----
4. <i>Nisus gundlachi</i>	8.60-10.50	7.50- 9.50	0.68	2.50-2.75	-----
5. <i>Nisus pileatus</i>	8.10-10.40	6.80- 9.00	0.50-0.70	2.20-2.65	1.35-1.70
6. <i>Nisus bicolor</i>	8.00-10.00	7.20- 8.80	0.55-0.75	2.25-2.70	1.45-1.80
7. <i>Nisus chionogaster</i>	6.80- 8.40	6.00- 7.30	0.40-0.52	1.90-2.25	1.30-1.55
8. <i>Nisus ventralis</i>	6.30- 8.70	5.40- 7.25	0.35-0.55	1.65-2.20	1.10-1.50
9. <i>Nisus erythrocnemis</i>	6.25- 8.00	5.40- 6.20	0.35-0.45	1.55-2.00	1.10-1.40
10. <i>Nisus nigroplumbeus</i>	6.75	6.30	0.45	1.95	1.30
11. <i>Nisus fuscus</i>	6.35- 8.80	5.50- 8.20	0.35-0.60	1.85-2.30	1.10-1.55
12. <i>Nisus salvini</i>	7.60- 7.80	6.90- 7.00	0.50	2.15-2.20	1.45-1.50
13. <i>Nisus fringilloides</i>	6.25	4.80	-----	1.80	-----

The following key to the species is the best we have been able to devise from very complicated and variable characters presented. The characters common to all the species are the following:—

COMMON CHARACTERS.—Tail crossed by wide bands of blackish and

grayish, three to six in number, the last black band broadest and usually subterminal; tail sometimes (in fresh plumages) with a terminal margin of white. *Adult*:—Above, uniform slate or plumbeous, growing darker on the pileum, which is sometimes black; occipital feathers pure white beneath the surface, and scapulars with large concealed spots of the same. Legs and feet yellow; lower parts extremely variable, usually with transverse markings of rufous or brown, rarely white, broken only by dusky shaft-streaks or narrow faint stripes on the breast and sides, and uniform rufous tibiae; sometimes entirely rufous, or uniform plumbeous, with rufous on the tibiae. *Young*:—Above, dark brown, the feathers with terminal margins of rusty brown or buff. Beneath, white or ochraceous, usually with longitudinal (rarely with transverse) markings of brown—immaculate only in *N. bicolor*.

Key to the species.

A.—Black bands of the tail decidedly narrower than the gray interspaces.

a. Size large (wing, 8.25–11.00; tail, 6.80–10.50).

1. *N. COOPERI*.—Wing, 8.70–11.00; tail, 7.80–10.50; culmen, 0.58–0.80; tarsus, 2.30–2.85; middle toe, 1.45–1.85. Tail with four black bands. *Adult*:—Beneath, white, with transverse spots or bars of rufous, except on throat and crissum. *Young*:—Thighs variously marked with brown; breast, belly, and sides with stripes of the same. *Hab.*—North America, except Arctic region and West Indies.

2. *N. GUTTATUS*.—Wing, 8.50–10.50; tail, 6.80–8.50; culmen, 0.60; tarsus, 2.40–2.65. Tail with four black bands. *Adult*:—Beneath, pale “fawn-rufous”; the breast with white spots and half-bars; the thighs and lining of wing plain. *Hab.*—Paraguay and Bolivia.

3. *N. CHILENSIS*.—Wing, 8.25–9.90; tail, 7.65–8.50; culmen, 0.50–0.70; tarsus, 2.25–2.65; middle toe, 1.40–1.70. Tail with five to six black bands. *Adult*:—Tibiae plain rich rufous; other lower parts, except crissum, ash-gray or umber, shaded with rufous and slate-color, and broken by white spots, these forming distinct bars on the abdomen. *Young*:—Below, buff, more rusty on the tibiae, the latter transversely spotted with rusty-brown; breast, sides, and abdomen with lanceolate or ovate stripes of blackish. *Hab.*—Chile to Straits of Magellan.

4. *N. GUNDLACHI*.—Wing, 8.60–10.50; tail, 7.50–9.50; culmen, 0.68–0.70; tarsus, 2.50–2.75. Tail with four black bands. *Adult*:—Jugulum and sides of neck plain ash-gray; lower part of breast and upper portion of abdomen plain rufous, the feathers narrowly margined with white; tibiae rufous, the feathers with subterminal darker bars and lighter tips. *Young*:—Sides and tibiae with broad transverse spots of brown; breast and abdomen with broad stripes of the same; longer lower tail-coverts with narrow shaft-stripes of blackish. *Hab.*—Cuba.

b. Size small (wing, 6.35–8.80; tail, 5.50–8.25).

5. *N. FUSCUS*.—Wing, 6.35–8.80; tail, 5.50–8.25; culmen, 0.35–0.60; tarsus, 1.85–2.30; middle toe, 1.10–1.55. Tail with four to five black bands. *Adult*:—Tibiae barred or spotted transversely with rufous and white; other lower parts, except throat and crissum, with wide bars or transverse spots of rufous and white. *Young*:—Tibiae white or pale rusty, with markings of brown of variable shape; other lower parts, except crissum, with brown stripes, more spot-like on the sides. *Hab.*—Entire continent of North America. (Not in West Indies.)

6. *N. FRINGILLOIDES*.—Wing, 6.25-?; tail, 7.80-?; tarsus, 1.80-?; middle toe, ?. Tail with five black bands (*qu.*: narrower than gray ones?). *Adult*:—Lower parts white, the auriculars and sides of neck uniform light rufous; breast, abdomen, sides, and tibiae with narrow bars of pale rufous or brown, faintest on the tibiae. *Young*:—Tibiae and abdomen with bars or transverse waved lines of brown; breast with irregular spots of the same. *Hab.*—Cuba.

B. Black and gray bands of the tail about equal in width. (Size small.)

7. *N. ERYTHROCNEMIS*.—Wing, 6.25–8.00; tail, 5.40–6.20; culmen, 0.35–0.40; tarsus, 1.55–2.00; middle toe, 1.10–1.40. Tail with four to five blackish bands. *Adult*:—Auriculars, sides of neck, and sides (under wings) light rufous; tibiae uniform deep rufous; breast and abdomen with narrow bars of pale brown or rufous. *Young*:—Tibiae uniform deep rufous; sides tinged with the same; breast and sides with sagittate spots of rusty brown. *Hab.*—Eastern South America.

8. *N. CHIONOGASTER*.—Wing, 6.80–8.40; tail, 6.00–7.30; culmen, 0.40–0.52; tarsus, 1.90–2.25; middle toe, 1.30–1.55. Tail with four to five blackish bands. Lower parts white without distinct markings; tibiae uniform ochraceous or buff. *Adult*:—White of lower parts relieved only by fine black shaft-streaks on breast and throat. *Young*:—Breast and sides with faint stripes of dilute brown. *Hab.*—Guatemala.

C.—Black bands of the tail decidedly wider than the gray ones.

a. Size small (wing, 6.30–8.60; tail, 5.40–7.25).

9. *N. SALVINI*.—Wing, (♀?) 7.60–7.80; tail, 6.90–7.00; culmen, 0.50; tarsus, 2.15–2.40; middle toe, 1.45–1.50. Tail with four to six gray bands. Lower parts white, without distinct markings; tibiae uniform deep rufous. *Adult*:—Feathers of the breast and sides with dusky shaft-streaks. *Young*:—Breast and sides with narrow stripes of dilute brown. *Hab.*—Venezuela.

10. *N. VENTRALIS*.—Wing, 6.30–8.70; tail, 5.40–7.25; culmen, 0.35–0.55; tarsus, 1.65–2.20; middle toe, 1.10–1.50. Tail with four gray bands. Tibiae uniform rufous. *Adult*:—Lower parts mostly rufous, the crissum usually whitish; middle of breast and abdomen sometimes showing faint bars of whitish. Occasionally entirely rufous underneath. *Young*:—Breast, sides, and abdomen with broad sagittate spots of brown. *Hab.*—Columbia.

11. *N. NIGROPLUMBEUS*.—Wing, 6.75; tail, 6.30; culmen, 0.45; tarsus, 1.95; middle toe, 1.30. Tail with four gray bands. *Adult*:—Lower parts plumbeous, mixed with rufous on crissum, abdomen, tibiae, and lining of wing. *Hab.*—Quito Valley, Ecuador.

b. Size large (wing, 8.00–10.40; tail, 6.80–9.00).

12. *N. BICOLOR*.—Wing, 8.00–10.00; tail, 7.20–8.80; culmen, 0.50–0.75; tarsus, 2.25–2.70; middle toe, 1.45–1.80. Tail with three to five gray bands. No markings on lower parts. *Adult*:—Beneath, pearl-gray; tibiae rufous; crissum and lining of wing whitish. *Young*:—Lower parts uniform white or ochraceous; a distinct nuchal collar of the same. *Hab.*—Central America, from Costa Rica to Columbia.

13. *N. PILEATUS*.—Wing, 8.10–10.40; tail, 6.80–9.00; culmen, 0.50–0.70; tarsus, 2.20–2.65; middle toe, 1.35–1.70. Tail with four

to five gray bands *Adult*:—Beneath, pearl-gray; tibiæ and lining of wing rufous; crissum whitish: *Young*.—Beneath, white or ochraceous, with lanceolate or ovate stripes of brownish-black on breast and sides. Upper parts much variegated by white spotting; no distinct nuchal collar. *Hab.*—Eastern South America.

Certain single characters, or peculiar combinations of conspicuous characters, serve for the easy identification of the species; the following being the more prominent ones:—

A. Tibiæ uniform rufous.

a. Size large.

* Breast and belly plain pearl-gray.

1. Lining of wing whitish.....*bicolor*, adult.

2. Lining of wing rufous.....*pileatus*, adult.

** Breast and belly spotted with white.

1. Ground-color of breast pale fawn-rufous.....*guttatus*, adult.

2. Ground-color of breast slaty or umber.....*chilensis*, adult.

b. Size small.

* Breast white, faintly streaked or striped....*salvini*, ad. and yng.

** Breast white, with broad sagittate spots of brown.

1. Black bands on tail and gray interspaces equal in width,
erythrocnemis, young.

2. Black bands on tail decidedly wider than gray interspaces,
colors all darker.....*ventralis*, young.

* Breast white, with narrow transverse bars ..*erythrocnemis*, adult.

** Breast plain rufous, or with faint whitish bars in middle portion.
.....*ventralis*, adult.

* Breast plain plumbeous.....*nigroplumbeus*, adult.

B. Tibiæ mixed white and rufous.

a. Size large.

* Breast plain gray.....*gundlachi*, adult.

** Breast spotted rufous and white.....*cooperi*, adult.

b. Size small.

* Cheeks rusty-white, with dusky streaks; tibiæ with broad rufous spots.....*fuscus*, adult.

** Cheeks plain rufous, without streaks; tibiæ with narrow bars of rufous.....*fringilloides*, adult.

C. Tibiæ white, with narrow bars of brown.....*fringilloides*, young.

D. Tibiæ plain buff or ochraceous; breast pure white, with dusky shaft-streaks; size small.....*chionogaster*, adult and young.

E. Tibiæ white or rusty, with spots or streaks of brown.

a. Breast thickly striped with deep sepia-brown, the sides with broad bars of the same.

* Size large.....*gundlachi*, young.

** Size small.....*fuscus*, young.

b. Breast with narrow stripes of paler brown; the sides also striped.

* Size large.....*cooperi*, young.

** Size small.....*fuscus*, young.

c. Sides of breast with lanceolate or ovate stripes of blackish.

* Above much variegated with whitish spotting....*pileatus*, young.

** Above without exposed white spotting.....*chilensis*, young.

F. Lower parts immaculate white or ochraceous; a distinct nuchal collar of the same.....*bicolor*, young.

NISUS COOPERI.

Northern Falcon LATH. Gen. Synop. i, 1781, 79, No. 62 (= ♀ ad.).

Falco hyemalis β. GMEL. S. N. i, 1788, 274 (= ♀ ad.).

Falco cooperi BONAP. Am. Orn. i, 1828, pl. 10, fig. 1; Ann. Lyc. N. Y. ii, 433; Isis, 1832, 1137.—JAMESON (ed. Wils.), Am. Orn. iv, 1831, 3.—BREWER, Bost. Journ. N. H. i, 1837, 436 (Mass.).—PEABODY, *ib.* iii, 1841, 78.—THOMPSON, Nat. Hist. Vermont, 1853, p. —.—READ, Pr. Ac. Nat. Sci. Phila. 1853, p. — (N. Ohio).

Astur cooperi BONAP. Comp. List, i, 1838, 5; Rev. Zool. 1850, 489; Consp. Av. i, 1850, 31.—JARDINE (ed. Wilson), Orn. 1840, 651.—GAMBEL, Pr. Ac. Nat. Sci. Phila. 1846, p. — (California).—PRATTEN, Tr. Ill. Ag. Soc. 1853-4, 599 (S. Illinois).—KENNICOTT, *ib.* 581, (N. Ill.).—PUTNAM, Pr. Essex Inst. 1856, 204 (Mass.).

Accipiter cooperi DE KAY, Zool. N. Y. ii, 1844, 18, pl. iv, fig. 5.—GRAY, List. Acc. Brit. Mus. 1848, 38; Genera of B. i, 1849, 29; Hand List, i, 1869, 32.—CASSIN, Pr. Ac. Nat. Sci. 1848, p. — (Xalapa); *ib.* 1855, 279; Ill. Birds Cal. Tex. etc. 1856, 96; Birds N. Am. 1858, 16.—HOY, Pr. Ac. Nat. Sci. Phila. 1853, p. — (Wisconsin); Smithsonian Rep. 1864, 437 (Missouri).—KNEELAND, Pr. Boston Soc. N. H. 1857, 233 (Keweenaw Point, Lake Superior).—HEERMANN, Pacific R. R. Rep. vii, 1857, 31.—NEWBERRY, *ib.* vi, iv, 1857, 74.—BREWER, N. Am. Oölogy. 1857, 20, pl. v, fig. 55.—.—MAX, Caban, Journ. vi, 1858, 13.—BAIRD, Cat. N. Am. Birds, 1859, No. 15.—HENRY, Pr. Ac. Nat. Sci. Phila. 1859, p. —.—SCIATER, P. Z. S. 1859, 389.—BARNARD, Smithsonian Report, 1860, 434 (Pennsylvania).—COOPER & SUCKLEY, P. R. R. Rep. xii, ii, 1860, 145.—BLAKISTON, Ibis, 1861, 317 (Forks of the Saskatchewan, May 21).—BOARDMAN, Pr. Boston Soc. N. H. 1862, 122 (Calais, Maine, summer).—VERRILL, Pr. Essex Inst. iii, 1863, p. — (Maine).—SAMUELS, Rep. Sec. Agr. Mass. 1864, p. —; Birds New Eng. 1870, 27.—DRESSER, Ibis, 1865, 323 (Texas).—COUES, Pr. Ac. Nat. Sci. Phila. 1866, 43 (Arizona); Pr. Essex Inst. 1868, p. —; Pr. Boston Soc. 1868, 120 (S. Carolina); Pr. Ac. Nat. Sci. Phila. 1871, 27 (Ft. Macon, N. C.); Key to N. Am. Birds, 1872, 212; Checklist N. Am. Birds, 1873, 67; Birds Northwest, 1874, 334.—LAWR. Ann. Lyc. N. Y. 1866, p. —; 1868, 134 (Costa Rica).—ALLEN, Am. Nat. 1870, 173 (migrations); Bull. M. & C. Z. 1871, p. — (Florida).—SCL. & SALV. Ex. Orn. xi, 1869, 170; Nom. Neotr. 1873, 129.—TURNBULL, Birds of E. Penn. 1869, p. —.—RIDGWAY, Pr. Ac. Nat. Sci. Phila. 1870, 141.—MAYNARD, Birds of Mass. 1870, 163.—ROSS, Birds of Canada, 1871, 3.—MAYNARD, Pr. Boston Soc. Nat. Hist. 1871, 26.—SNOW, Birds of Kansas, 1872, 2.—ADAMS, Rambles, 1873, 297.—LAWR. Mem. Boston Soc. N. H. 1874 (S. W. Mexico in Winter; biographical notes by A. J. Grayson).—HENSCHAW, Ann. Lyc. N. Y. 1874, 10 (Utah).—SHARPE, Cat. Acc. Brit. Mus. 1874, 137.—HATCH, Bull. Minn. Acad. Sciences, 1874, 51 (Minnesota).

Nisus cooperi SCHLEG. Rev. Acc. 1873, 73.—RIDGWAY, Pr. Boston Soc. N. H. 1873, 59; *ib.* 1874, p. 23 (S. Ill.); Bull. Essex Inst. 1873, 167; *ib.* 1875, 10, 13, 19, 21, 34, 38; in B. B. & R. Hist. N. Am. B. iii, 1874, 230; Ann. Lyc. N. Y. 1874, 181 (Illinois).—HENSCHAW, Rep. Orn. Specs. Wheeler's Exp. 1874, 49, 138.

Falco stanleyi AUDUBON, Birds Am. 1831, pls. 36, 141; Orn. Biog. i, 1831, 186.

Cooperastur stanleyi BONAP. Rev. et Mag. Zool. 1854, 538.

Accipiter mexicanus SWAINSON, Fauna Bor.-Am. ii, 1831, 45.—JARDINE (ed. Wilson), Am. Orn. ii, 1832, 215.—BONAP. Consp. Av. i, 1850, 32 (sub *A. fuscus*).—STRICKL. Orn. Syn. i, 1855, 109.—CASSIN, Illust. Birds Cal. Tex. etc. 1856, 96; Pr. Ac. Nat. Sci. Phila. 1855, 279; Birds N. Am. 1858, 17.—XANTUS, Pr. Ac. Nat. Sci. Phila. 1859, 190 (S. California).—HENRY, *ib.* p. — (New Mexico).—COOPER & SUCKLEY, Pacific R. R. Rep. xii, ii, 1860, 146 (Washington Ter.).—COUES, Ibis, 1865, p. —; *ib.* 1866, p. —; Pr. Ac. Nat. Sci. 1866, 43 (Arizona).—COOPER, Am. Nat. 1868 (Montana); Orn. Cal. i, 1870, 465.—GRAY, Hand List, i, 1869, 33.

Nisus cooperi var. *mexicanus* RIDGWAY, Pr. Boston Soc. 1873, 59; Bull. Essex Inst. 1873, 168 (Colorado); in B. B. & R. Hist. N. Am. Birds, iii, 1874, 231.

Accipiter pileatus STRICKLAND, Orn. Syn. i, 1855, 105 (in part; not *A. pileatus* Vigors).

Habitat.—United States and table-lands of Mexico; southward (in winter) to Costa Rica and Veragua; north (in summer) to New Brunswick, the Saskatchewan, and Washington Territory.

Diagnosis.—Wing, 8.70–11.00; tail, 7.80–10.50; culmen, 0.58–0.80; tarsus, 2.30–2.85; middle toe, 1.45–1.85. Fourth or fifth quill longest; first equal to or shorter than tenth; outer five with inner webs sinuated. Tail rounded. Tarsi usually distinctly scutellate.

Adult.—Above slate-color, varying from a fine bluish to a brownish

cast, the shafts of the feathers black. Pileum plumbeous-black, the occipital feathers snow-white beneath the surface; primaries plain brownish-slate, their shafts clear brown. Tail narrowly tipped with white, and crossed by four very regular, but sometimes not sharply-defined, bands of dusky, narrower than the slaty ones, the last broadest, the first nearly obsolete, and concealed by the coverts, which are sometimes narrowly tipped with white. Lower parts white and rufous, in transverse bars, the shafts of the feathers black, and the rufous bars usually connected along the middle portion of the feathers; tibiae more deeply colored, the rufous usually predominating; crissum immaculate white. Lining of the wing white, irregularly spotted with deep rufous; inner webs of the primaries with transverse bands of dusky and white anterior to their emargination and silvery-gray terminally, the dusky bands about seven in number on the longest quill, the two colors nearly equal in width. *Male*:—Slate of the upper parts of a fine bluish cast; nape and sides of the head bluish-ashy, the sides of the breast usually tinged with the same. Wing, 8.85–9.40; tail, 7.80–8.30; culmen, 0.60–0.68; tarsus, 2.30–2.60; middle toe, 1.45–1.55. (Eight specimens.) *Female*:—Slate of the upper parts of a brownish cast; nape and sides of the head dull rusty-rufous, the sides of the breast without ashy tinge. Wing, 10.10–10.80; tail, 9.00–9.40; culmen, 0.70–0.80; tarsus, 2.65–2.85; middle toe, 1.60–1.85. (Five specimens.)

[*Colors in life*:—Terminal half of bill deep black, basal half pale blue; cere greenish-yellow; iris deep orange-red; tarsi and toes deep lemon-yellow.]

Young:—Above, grayish-brown, the feathers more or less bordered with rusty; the scapulars and upper tail-coverts with concealed white spots; the occiput blackish, with the bases of the feathers white, and the pileum and nape streaked with rusty. Tail grayish-brown, tipped with whitish, and crossed by four bands of brownish-black or dusky. Lower parts white, longitudinally striped with clear dusky brown; the shafts black.

[*Colors in life*:—Iris varying from greenish-white to chrome-yellow; bill blackish terminally, pale blue basally; tarsi and toes varying from very pale greenish-yellow to lemon-yellow; claws slate-black.]

Variations.—The extent of individual variation in this species, though very considerable, is limited by the terms of the above diagnosis. Adult males vary as follows:—

No. 10,086, Washington, D. C. (type of description of *N. cooperi*, adult male, in Baird, Brewer, and Ridgway's History North American Birds, vol. iii, p. 230):—Forehead, crown, and occiput blackish-plumbeous, the latter snowy-white beneath the surface; rest of upper parts slaty-plumbeous, the nape abruptly lighter than the occiput; feathers of the nape, back, scapulars, and rump with darker shaft-lines; scapulars with concealed cordate and circular spots of white; upper tail-coverts sharply tipped with white. Tail more brownish than the rump, sharply tipped with pure white, and crossed with three broad, sharply-defined bands of black, the first of which is concealed, the last much broadest; that portion of the shaft between the two exposed black bands white. Lores grayish; cheeks and throat white, with fine, hair-like shaft-streaks of blackish; ear-coverts and sides of neck more ashy and more faintly streaked. Ground-color beneath pure white, but broken by detached transverse bars of rich vinaceous-rufous, on the jugulum, breast, sides, flanks, abdomen, and tibiae; the white bars everywhere (except on sides of the breast) rather exceeding the rufous in width; all the feathers (except tibial plumes) with distinct black shaft-lines;

lower tail-coverts immaculate pure white. Lining of the wing white, with numerous cordate spots of rufous; under wing-coverts with transverse blackish bars; under side of primaries silvery-white, purest basally (tips dusky), crossed with quadrate bars of dusky, of which there are six (the first only indicated) upon the longest quill (fourth). Wing, 9.35; tail, 8.30; culmen, 0.68; tarsus, 2.45; middle toe, 1.55. Fourth quill longest; third shorter than fifth; second intermediate between sixth and seventh; first, 2.80 shorter than longest; graduation of tail, 1.00.

No. 12,024, Fort Tejon, Cal.; J. Xantus (type of description of var. *mexicanus*, adult male, in History North American Birds, iii, p. 231):—Forehead, crown, and occiput plumbeous-black, feathers of the latter with basal two-thirds snowy-white. Upper plumage deep plumbeous, darkest anteriorly, the back being scarcely lighter than the nape; rump fine bluish-plumbeous. No concealed white on the upper parts. Tail brownish-plumbeous, narrowly tipped with pure white, and with four sharply-defined broad bands of black, the first of which is faintest, and concealed by the coverts, the last broadest; shafts of tail-feathers deep brown throughout. Primaries and secondaries much darker than the tail, and more bluish; less so, however, than the scapulars. Lores whitish, quite in contrast with the black of the forehead; cheeks and ear-coverts dark ashy, slightly washed with reddish, and with obscure darker streaks; chin and throat white, with sparse, hair-like shaft-streaks of black. Breast, abdomen, sides, flanks, and tibiae fine vinaceous-rufous, the feathers (except on tibiae) with fine hair-like shaft-streaks of black; breast, abdomen, sides, and flanks with pairs of transverse elliptical white spots, not touching the shaft; on the abdomen, the white and rufous bars are of about equal width; on the tibiae, the rufous is deepest, and exceeds the white in amount; anal region barred with rufous, more faintly than the abdomen; lower tail-coverts immaculate snowy-white. Sides of the neck deep reddish-ashy, this washing the whole side of the breast. Lining of the wing reddish-white, with numerous crowded, cordate, somewhat blended spots of rufous; larger coverts transversely spotted with blackish; under side of primaries silvery-white (blackish for about the terminal inch), crossed with quadrate spots of blackish, of which there are about seven on the longest quill (fourth); the basal ones are, however, so much broken that the number is rather indefinite. Wing, 9.10; tail, 8.20; culmen, 0.65; tarsus, 2.60; middle toe, 1.50.

No. 66,237, Westfield, Mass., October 10, 1846:—Very similar to the preceding (No. 12,024), but even darker, the rufous of the lower parts deeper, and the ashy tinge on the side of the breast still stronger. Wing, 9.20; tail, 8.15; culmen, 0.65; tarsus, 2.55; middle toe, 1.50.

No. 6,874, Sacramento Valley, California, differs from the two preceding in having the entire breast barred with rufous and white, instead of having the sides ashy, the white bars restricted to the middle portion; the black of the pileum terminates abruptly on the occiput, and the sides of the neck are tinged with rusty, as in females. Wing, 9.30; tail, 8.15; culmen, 0.60; tarsus, 2.45; middle toe, 1.50. It resembles No. 10,086, except that the colors are uniformly of a darker shade throughout.

No. 2,554 (Mus. R. R.). Washington, D. C., differs from No. 10,086, in paler colors and more delicate shades; the sides of the breast have a distinct wash of pearly-ash, while the nape is pale bluish-ash, lighter than the back, and abruptly defined against the dark-plumbeous crown. Wing, 9.40; tail, 8.30; culmen, 0.65; tarsus, 2.50; middle toe, 1.55.

No. 42,074, Mirador, Mexico, is extremely similar to the last, but lacks the ashy tinge on the side of the breast. Wing, 8.85; tail, 7.80; culmen, 0.65; tarsus, 2.40; middle toe, 1.45. Another Mirador specimen (No. 23,809) is exactly similar; it measures: wing, 9.40; tail, 8.10; tarsus, 2.30; middle toe, 1.45—nearly the same as the Washington specimen.

No. 5,841, Puget Sound, October 4, is exactly similar to No. 6,874 (Sacramento Valley), and has, like it, the forehead strongly tinged with dull rusty. Wing, 8.90; tail, 8.00; culmen, 0.62; tarsus, 2.45; middle toe, 1.55.

The adult females differ pretty constantly from the males in the much browner upper parts and rusty instead of ashy nape and auriculars, though this last feature is a less constant distinction.

No. 26,588, Washington, D. C.:—Similar to the male, but the upper parts lacking entirely any bluish cast, and the rufous of the lower parts less vinaceous in tint. Forehead tinged with rusty-brown; neck and auriculars uniform dull rufous, with a rusty-brown tinge, and sides of the breast entirely destitute of ashy wash. Wing, 10.80; tail, 9.00; culmen, 0.75; tarsus, 2.65; middle toe, 1.85; fourth and fifth quills equal and longest; third longer than sixth; second intermediate between sixth and seventh; first three inches shorter than the longest.

No. 57,867, Tehuantepec, Southern Mexico (January 8, 1869), is exactly like No. 26,588, except that the tibiae are deeper and nearly uniform rufous. Wing, 10.35; tail, 9.40; culmen, 0.70; tarsus, 2.80; middle toe, 1.70.

No. 55,018, Mazatlan, Western Mexico (February 21), differs in having the rufous bars of the lower parts browner, more sharply defined, and more regularly transverse. Wing, 10.10; tail, 9.30; culmen, 0.75; tarsus, 2.65; middle toe, 1.60.

Two other specimens (No. 5,792, South Carolina, and No. 49,682, Arizona) are very similar in colors to the last; their measurements may be found in the appended table.

The following detailed descriptions of young birds are of specimens typical of the two supposed geographical styles:—

Young male (55,498, Fort Macon, N. C., February; Dr. Cones. Type of var. *cooperi* in Hist. N. Am. Birds, iii, p. 231):—Above grayish-umber, the feathers of forehead, crown, and nape faintly edged with pale rusty; occiput unvaried blackish, feathers white beneath the surface. Wing-coverts, scapulars, and interscapulars narrowly bordered with pale yellowish-umber; rump and upper tail-coverts bordered with rusty. Tail paler and grayer than the back, narrowly tipped with white, and crossed by four bands of brownish-black, the first of which is only partially concealed. Scapulars and upper tail-coverts showing much concealed white, in form of roundish spots, on both webs. Beneath, clear white, without any yellowish tinge; throat with a medial and lateral series of clear dark-brown streaks; jugulum, breast, sides, flanks, and abdomen with numerous stripes of clear sepia, each showing a darker shaft-streak; tibiae with longitudinal streaks of paler and more rusty brown; lower tail-coverts immaculate.

Young female (6876, "Sacramento Valley, Cal."; Dr. Heermann—probably from Pennsylvania. Type of var. *cooperi* in Hist. N. Am. B., iii, p. 231):—Similar to young male, but more varied. The black middle streaks of feathers of head above narrower, causing more conspicuous streaks; white spots of scapular region considerably exposed; longitudinal stripes beneath narrower and more sparse.

Young male (Fort Tejon, Cal., type of var. *mexicanus*, *tom. cit.* 232):

—Forehead, crown, occiput, and nape deep rusty-brown; feathers with broad longitudinal streaks of deep black. Rest of upper parts deep umber, darkest on the back; feathers of back and rump, the upper tail-coverts, scapulars, and wing-coverts broadly bordered with rusty; scapulars with concealed white spots. Tail ashy-umber, tipped (more broadly than in adult) with ashy-white, crossed by four broad bands of brownish-black, the last (or subterminal) of which is broadest, the first concealed by the coverts. Secondaries and primaries similar in color to the tail, but darker; the first showing five indistinct darker bands, and tipped (rather broadly) with pale cinnamon-rufous. Ear-coverts and cheeks fulvous-white, thickly streaked with dark brown. Lower parts white, washed with ochraceous on jugulum and breast; each feather with a central longitudinal lanceolate stripe of clear umber, the shaft black; these streaks are very narrow on the throat, broadest on the breast and flanks. Tibiæ with transversely ovate spots and transverse bars of reddish-umber; lower tail-coverts with narrow shaft-streaks of darker brown. Lining of wing with cordate and ovate spots of dark brown.

Young female (42136, Orizaba, Mexico; M. Botteri. Type of var. *mexicanus* in Hist. N. Am. B., 232):—Similar to the young male, but feathers of back, etc., less broadly margined with rusty; ochraceous wash on lower parts more decided; stripes beneath broader and less lanceolate, on the sides broadly ovate, and on the flanks in form of broad transverse bars; tibiæ more thickly spotted transversely; lower tail-coverts immaculate. Wing, 9.00; tail, 7.80; tarsus, 2.25; middle toe, 2.50. Fourth quill longest; third shorter than fifth; second intermediate between sixth and seventh; first, 2.90 shorter than longest. Graduation of tail, 0.90.

Remarks.—Although occasional individuals from Mexico lead at first to the impression of a decided difference from the usual style of the Eastern United States, they lose their apparently distinctive features when a large series is brought together for comparison. As a rule, adult males from Mexico and the western districts of the United States agree with each other, and differ from the *average* style of the same plumage in birds from the Eastern United States in having the rufous of the lower parts in greater amount in proportion to the white, that of the tibiæ being often almost unbroken; there is usually also less of concealed white on the scapulars. The most typical example of the so-called *A. mexicanus*, however, is one from Massachusetts, described on p. 99. The difference between eastern and western birds of this species is more marked in the young than in the adult plumage, however; and there seems to be great constancy in the differences observable. Thus, the western birds are darker-colored throughout, the brown markings occupying larger areas, and the white portions of a less pure color, being more or less suffused or stained with pale ochraceous. The markings on the tibiæ are almost always transversely-cordate spots instead of longitudinal streaks. This darker style of plumage is characteristic of the entire Western Province, east to the Missouri Plains; but along the southern border and in Mexico, birds more like the eastern style seem to prevail.

Upon the whole, it is found impossible to characterize by tangible, and, at the same time, constant, characters, two geographical races of this species; for, while a barely appreciable difference characterizes the majority of the birds of either region, the cases of individuals which correspond in every particular being found in the region of which they are not typical are too numerous to warrant the considera-

tion of the two extremes as strictly climatic. It remains, therefore, for us to better class these variations as of an individual nature; and this stand-point is well borne out by the results of careful measurements of specimens from various localities in North America. The following table of measurements shows conclusively that the variations in general size and relative proportions of the parts are purely individual.

Measurements of thirty-nine specimens of NISUS COOPERI from various portions of North America.

ADULT MALES.

Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Catalogue No.	Museum.	Locality.
9.35	8.30	0.68	2.45	1.55	10086	National Museum.	— ?
9.40	8.30	0.68	2.50	1.55	2554	R. R.	Washington, D. C.
9.20	8.15	0.65	2.55	1.50	66237	National Museum.	Massachusetts.
9.30	8.15	0.60	2.45	1.50	6874	do	Sacramento Valley, Cal.
9.10	8.20	0.65	2.60	1.50	12024	do	Fort Tejon, Cal.
8.85	7.80	0.65	2.40	1.45	42074	do	Mirador, Mexico.
9.40	8.10	.....	2.30	1.55	23809	do	Do.
8.90	8.00	0.62	2.45	1.85	5841	do	Puget Sound.
9.25	8.60	0.60	2.35	1.55	1593	Aiken	El Paso, Co., Colo.
9.20	8.00	0.65	2.65	1.60	a. 15	Lawrence	New York.
9.10	7.90	0.65	2.35	1.65	b. 15	do	Do.

ADULT FEMALES.

10.80	9.00	0.75	2.65	1.85	26588	National Museum.	Washington, D. C.
10.50	9.00	0.80	2.85	1.85	5792	do	South Carolina.
10.40	9.40	0.75	2.70	1.75	49683	do	Arizona.
10.10	9.30	0.75	2.65	1.60	55018	do	Mazatlan, Western Mexico.
10.35	9.40	0.70	2.80	1.70	57867	do	Tehuantepec, Southern Mexico.
10.20	9.10	0.70	2.60	1.62	1612	Aiken	Colorado.
10.00	9.10	0.70	2.70	1.62	1654	do	Do.

YOUNG MALES.

9.40	8.20	0.65	2.65	1.55	25201	National Museum.	Washington, D. C.
9.25	8.90	0.65	2.65	1.65	58340	do	Jacksonville, Fla.
9.15	8.60	0.60	2.65	1.60	55498	do	North Carolina.
8.90	8.30	0.60	2.60	1.50	19117	do	Wyoming Territory.
9.00	8.80	0.60	2.30	1.45	5165	do	Dakota Territory.
9.10	8.60	0.60	2.45	1.45	5847	do	Washington Territory.
8.70	8.35	0.60	2.40	1.45	4590	do	Do.
8.90	8.50	0.60	2.40	1.50	1759	R. R.	Nevada.
9.00	8.30	0.60	2.50	1.50	.....	National Museum.	Fort Tejon, S. Cal.
9.00	8.40	0.60	2.55	1.52	628	R. R.	Cape St. Lucas.
9.30	8.30	0.60	2.50	1.40	17208	National Museum.	Do.
8.90	8.00	0.60	2.40	1.50	17209	do	Do.
9.45	8.80	0.60	2.45	1.50	42073	do	Mirador, Eastern Mexico.
9.15	8.40	0.58	2.35	1.45	33554	do	Do.
8.80	8.70	0.60	2.45	1.50	32500	do	Orizaba, Mexico.
9.15	8.80	0.55	2.45	1.48	.....	C. E. A.	El Paso County, Colorado.

YOUNG FEMALES.

10.00	9.00	0.72	2.70	1.70	33255	National Museum.	Nebraska.
10.70	9.80	0.75	2.85	1.80	60868	do	Southern Illinois.
10.60	10.00	0.80	2.85	1.85	955	R. R.	Do.
10.50	9.80	0.70	2.70	1.65	17510	National Museum.	Montana Territory.
10.50	9.80	0.70	2.65	1.65	28114	do	Northern California.

List of specimens in United States National Museum.

Catalogue No.	Corresponding No. of.	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
4352					Presidio, Cal		Lient. W. P. Trowbridge.	
4590	9			♂ juv.	Fort Steilacoom, W. T.		Dr. Potts	
4619				♀ juv.	Colorado River	Oct. 28, 1854	Maj. Emory	A. Schott.
5163	3				Fort Berthold, Dak	Sept. 16, 1856	Lient. Warren	F. V. Hayden.
5164	2				Mouth White Earth River.	Sept. 6, 1856	do	Do.
5165	1			♂ juv.	Mouth Yellowstone River.	Aug. 18, 1856	do	Do.
5578		383			Republican Fork	Aug. 17, 1856	Lient. Bryan	W. S. Wood.
5579	4				Bridger's Pass	Aug. 14, 1856	do	Do.
5792				♀ ad.	Society Hill, S. C.	Apr. 30, 1855	M. A. Curtiss	
5841	6	574		♂ ad.	Puget Sound, W. T.	Oct. 4, 1856	Dr. Geo. Suckley	
5846	7	538			Port Townsend, W. T.	Aug. —, 1856	do	
5847	8	539		♂ juv.	Fort Steilacoom, W. T.	Sept. —, —	do	
6847					Fort Thorn, N. Mex		Dr. T. C. Henry	
6848	11				Bodega, Cal	Feb. —, 1855	Lient. Trowbridge	T. A. Szabo.
6849	5				Fort Thorn, N. Mex		Dr. Henry	
6874	12			♂ ad.	Sacramento Valley, Cal		Lient. Williamson	Dr. Heermann.
6876					do		do	Do.
8511		585			Fort Steilacoom, W. T.	Oct. 10, 1856	Dr. Suckley	J. G. Cooper.
8512		585			Yakima River, W. T.	Sept. 10, 1856	do	
10086				♂ ad.	Washington, D. C.		J. C. McGuire	
10088					do		do	
10758					Fort Bridger, Wyo	Sept. 10, 1858	C. Drexler	
11791		176			Simiahmoo, W. T.	July 16, —	A. Campbell	Dr. Kennerly.
12024			M.	♂ ad.	Fort Tejon, Cal		J. Xantus	
17206		3344			Cape St. Lucas	Oct. 3, 1859	do	
17207		3297			do	Oct. 26, 1859	do	
17208		3069		♂ juv.	San Nicolas, L. Cal	Oct. 26, 1859	do	
17209		3068		♂ juv.	do	Oct. 26, 1859	do	
17211					Mira Flores, L. Cal	Nov. —, 1859	do	
17510				♀ juv.	Walla Walla		Lient. Mullan	J. Pearsall.
18454					Camp Burgwyn, N. Mex		W. W. Anderson	
18455					do		do	
18496					do	Apr. —, 1860	do	
19117				♂ juv.	Rose Bend, Mo. River.		Capt. Reynolds	D. R. Hines.
21335		21			Yreka, Cal	Sept. 13, —	William Vuille	
21336		23			do	Oct. 7, —	do	
21465					Pennsylvania		John Heptune	
21469					do		John Krider	
22026		92			Bitterroot Valley	Aug. 2, 1860	J. G. Cooper	
22560					Pennsylvania		Dr. Leib	
23809		23		♂ ad.	Mirador, Mexico		Dr. C. Sartorius	
25201				♂ juv.	Washington, D. C.	Oct. —, 1841	—?	
26588				♀ ad.	do		E. Coues	
28114		199		♀ juv.	Fort Crook, Cal	Sept. 10, 1861	D. F. Parkinson	
32500		144		♂ juv.	Orizaba, Mexico		F. Sumichrast	
33554		142		♂ juv.	Mirador, Mexico	Oct. —, 1866	Dr. C. Sartorius	
34255				♀ juv.	Fort Laramie	Apr. —, 1864	Dr. R. B. Hitz	
41905		46			West Kansas		A. Crocker	
42047		201			Mirador, Mexico		Dr. Sartorius	
42073		200		♂ juv.	do		do	
42074				♂ ad.	do		do	
42136		141		♂ juv.	Orizaba, Mexico		Botteri	
46621				♂ ad.	Mount Carmel, Ill.	Jan. 16, 1867	R. Ridgway	
46222				♂ juv.	do	Dec. —, 1866	do	
49683				♀ ad.	Arizona			
51295		296		♀ juv.	El Mojon, Costa Rica	Dec. 30, 1867	Dr. A. von Frantzius	José C. Zeledon.
53203		240		— juv.	W. Humboldt Mts., Nev	Oct. 8, 1867	Clarence King	R. Ridgway.
55018		616		♀ ad.	Mazatlan, Mexico	Feb. 1, —	A. J. Grayson	
55498		1610		♂ juv.	Fort Macon, N. C.	Feb. —, 1869	Dr. E. Coues	
57867				♀ ad.	Tehuantepec, Mexico		F. Sumichrast	
58340		2024		♂ juv.	Jacksonville, Fla.	Jan. 13, 1869	C. J. Maynard	
59054					Iowa		L. E. Ricksecker	
59156				♂ juv.	Fort Tejon, Cal		J. Xantus	
59264		377			Washington, D. C.	Sept. 18, 1860	Dr. Prentiss	
59990					Fort Whipple, Ariz.	—, —, 1869	E. Palmer	
60623		558		♂ juv.	Utah Mountains	Sept. 24, 1870	F. V. Hayden	H. D. Schmidt.
60868		865		♀ juv.	Mount Carmel, Ill.	Aug. —, 1869	R. Ridgway	S. Turner.
61500					Nevada	Sept. 16, 1871	Lient. Wheeler	Ferd. Bischoff.
62172			M.	♂ ad.	California		Expl. Exp. (?)	
65322		231			Little Porcupine River	Aug. 8, —	J. A. Allen	
66237		172		♂ ad.	Westfield, Mass.	Oct. 10, 1846	Wesleyan University	
67345				♂ juv.	Fort Tejon, Cal		J. Xantus	
67346		602		♀ juv.	Goodwin, Ariz.	Sept. 20, 1873	Lient. Wheeler	H. W. Henshaw.
67347		899		♀ juv.	San Pedro, Ariz.	Oct. 1, 1873	do	Do.
67348		616		♀ juv.	Apache, Ariz.	Aug. 26, 1873	do	Do.

Other specimens examined.—In mus. Acad. Nat. Sci., Philadelphia, 18; American Mus., New York, 3; Boston Soc. N. H., 4; Mus. Comp. Zoöl., Cambridge, 3; G. N. Lawrence, 9; W. S. Brewer, 1; L. Jouy, 1; C. E. Aiken, 1; S. F. Baird, 6; R. Ridgway, 7. Total number of specimens examined, 128.

Collectors' notes on color of eyes, etc., including fresh measurements (National Museum specimens).

- No. 4352: length, 18.00; extent, 31.00.
 No. 5163: length, 17.00; extent, 29.25; iris light yellow.
 No. 5164: length, — ?; extent, 30.50; iris light yellow.
 No. 5578: length, 18.25; extent, 25.00.
 No. 5579: length, 15.00; extent, 24.00.
 No. 5846: length, 19.00; extent, 30.00.
 No. 11791: length, 15.00; extent, 23.00.
 No. 12024: length, 17.00; extent, 29.00.
 No. 17206: length, 16.00; extent, 27.00.
 No. 17207: length, 17.00; extent, 29.00.
 No. 17208: length, 17.00; extent, 29.00.
 No. 17209: length, 16.00; extent, 28.20.
 No. 46621: length, 17.00; extent, 30.50; bill pale blue at base, growing gradually black at end; cere greenish-yellow; iris bright orange-red; tarsi and toes lemon-yellow.
 No. 46622: length, 19.00; extent, 33.50.

NISUS GUNDLACHI.

Astur cooperi LEMBEYE, Aves de la Isla de Cuba, 1850, 17.—CABANIS, Journ. für Orn Nov. 1854, —.

Accipiter cooperii BREWER, Pr. Boston Soc. Nat. Hist. 1860, p.—.

Nisus pileatus LEMB. Av. Cuba, Supplement, p. 125.

Accipiter pileatus BREWER, Pr. Boston Soc. Nat. Hist. 1860, p.—.

Accipiter mexicanus BREWER, Pr. Boston Soc. Nat. Hist. 1860, p.—.

Accipiter gundlachi LAWRENCE, Ann. Lyc. N. Y. May, 1860, 252.—GUNDLACH, Repert. 1865, 224.—SCL. & SALVIN, Exotic Orn. xi, 1869, 170: Nom. Neotr. 1873, p. 120.—GRAY, Hand List, i, 1869, 33, No. 319.—SHARPE, Cat. Acc. Brit. Mus. 1874, 137 (foot-note).

Nisus cooperi var. *gundlachi* RIDGWAY, B. B. & R. Hist. N. Am. Birds, iii, 1874, 22

Hab.—Cuba (Nat. Mus.).

Diagnosis.—Adult male:—"Front, crown, and occiput sooty black; upper plumage dull bluish-ash, the feathers of the back with brownish margins; tail of the same color as the back, partly tinged with dull rufous, and crossed with four brown bars, three of which are imperfect, being but little developed on the outer webs; the outer bar, however, crosses both webs and is narrowly tipped with white. Quill feathers brown, having their shafts, as are also those of the tail feathers, reddish-brown; cheeks dusky ash; space forward of the eye pale dull rufous; a line of whitish feathers runs along the edge of the crown and extends over the eye; throat ashy-white, tinged with rufous; sides of the neck, upper part of the breast, and a band running to the hind-neck grayish-ash; lower portion of the breast and upper part of the abdomen rufous, the feathers very narrowly edged with dull white; lower part of the abdomen of a pale rufous, with transverse bars of dull white. Long feathers of the sides grayish-ash tinged with rufous and destitute of bars or spots; sides, just above the junction of the tail, plain rufous; thighs of a bright but rather pale rufous, the feathers having darker submarginal ends, terminating with very narrow edgings of dull white; under wing-coverts and axillars bright rufous barred with white. The feathers of the throat, breast, and sides have their shafts dark brown; upper tail coverts grayish-ash, lower white; bill horn-color, with a whitish mark on the tooth and also on the edge of the lower mandible near its base; legs greenish-yellow."*

"Length about 18 inches; wing from flexure $9\frac{3}{4}$; tail $7\frac{3}{4}$; tarsus $2\frac{3}{4}$."—(Lawrence, *l. c.*)

* Dr. Gundlach (Lawrence, *l. c.* p. 7) adds:—Cere and cheeks (*i. e.* orbits?) greenish-yellow; feet pale yellow with a greenish hue; iris red; length 0.457; extent 0.807.

Young male (41,129, Cuba, Dr. Gundlach):—Above dark vandyke-brown, the feathers bordered inconspicuously with dark rusty; tail dull slate, narrowly tipped with ashy-white, and crossed with four broad bands of dusky, almost equal to the slate in width; beneath, white, much tinged on breast and tibiae with reddish-ochraceous; thickly striped with umber-brown, except on crissum, the streaks on throat narrow and cuneate, those on breast broad, and on sides changing into broad transverse spots or bars; tibiae thickly spotted transversely with more reddish, nearly rufous, brown; larger lower tail-coverts with narrow shaft-streaks of black. Occiput showing much concealed white, the ends of the feathers deep black. Wing, 8.60; tail, 7.50; culmen, 0.68; tarsus, 2.50; middle toe, 1.70.

Young female (41,128, Cuba, Dr. Gundlach):—Similar, but more thickly striped beneath, the dark markings about equaling the white in extent; whole sides with large transverse spots of umber, cuneate along shafts. Wing, 10.50; tail, 9.50.

Remarks.—In regard to its relationship to its nearest allies, *N. cooperi* and *N. pileatus*, Mr. Lawrence (*l. c.* p. 8) remarks of this species:—"A very marked feature in the adult of this species is the ash-color of the breast and sides, which does not exist at all in *cooperi*; the under surface is less marked with white than in that species; the thighs are of a nearly uniform rufous, which in *cooperi* are conspicuously barred with white; in the latter the under wing-coverts are white, with longitudinal spots of rufous-brown, whereas in *gundlachi* they are rufous barred with white. From *A. pileatus*, as figured in Pl. Col. pl. 205, it is also very different; the adult of that species has the top of the head dark slate, the upper plumage of a rather light slate-blue; wings, dark slate; tail, with four dark bands, whitish between; the under plumage pale whitish-blue; thighs, deep rufous; no appearance of bars on any part of the plumage; under tail-coverts, white; bill, bluish, under mandible yellow at the base; legs, yellow."

In the "History of North American Birds" (iii, p. 223, foot-note), this species is considered to be a geographical race of *N. cooperi*; and Mr. Sharpe, in his great work, the "Catalogue of the Accipitres, or Diurnal Birds of Prey, in the collection of the British Museum" (p. 137, foot-note), remarks that it "will probably prove on examination to be identical with the small, richly-colored form of *A. cooperi*, called by Swainson *A. mexicanus*". We have shown before that the latter is not entitled to recognition as even a race, though we had previously accorded it that rank, while Mr. Sharpe (*tom. cit.* p. 137) more properly places it among the synonyms of *N. cooperi*. In regard to the *N. gundlachi*, the erroneous conclusions of both authors were the result of lack of specimens for comparison, and too hasty examination of published descriptions. The above description of the adult, copied from the original paper by Mr. Lawrence (*Annals of the Lyceum of Natural History of New York*, vii, May, 1860, p. 252), shows clearly the perfect distinctness of this Cuban species from its North American ally as well as from all other species of the genus.

List of specimens in United States National Museum.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
41128			M.	♂ juv.	Cuba .....	.....	Dr. Gundlach.....	.....
41129			M.	♀ juv.	do .....	.....	do .....	.....

NISUS GUTTATUS.

Sparvius guttatus VIEILL. N. D. x, 1817, 325.—PUCHER. R. Z. 1850, 13.

Accipiter guttatus STRICKL. Orn. Syn. i, 1855, 110.—SCL. & SALV. Ex. Orn. xi, 1869, 169, 170, pl. lxxv; Nom. Neotr. 1873, 120.—GRAY, Hand List, i, 1869, 33.—SHARPE, Cat. Acc. B. M. 1874, 152.

Esparrero pardo y goteado AZARA, Pax. Par. i, 1802, 113.

Hab.—Paraguay and Bolivia.

“*Male* (nearly adult).—Above slaty grey, the head blackish, the nape varied with white; wings dull brown, the quills barred with darker brown, the interspaces ashy white below, so that the cross bars are more distinct, inner secondaries slaty grey like the back; tail ashy brown, narrowly tipped with white, and crossed with four bars of darker brown, lower surface ashy white, the bars more distinct except on outermost feather, where nearly obsolete; throat white, tinged with rufous, the feathers narrowly centered with black shaft lines; rest of under surface pale fawn-rufous, the thighs a little deeper-coloured, the breast mottled with white spots and half-bars; the sides of the face and neck clear slaty grey, the sides of the upper breast washed with the same colour; under tail-coverts white, with a few subterminal rufous spots; under wing-coverts and axillaries entirely pale rufous like the breast. Total length 15.2 inches, culmen .6, wing 8.5, tail 6.8, tarsus 2.4.

“*Adult female*.—Similar to the male but larger. Total length 18 inches, wing 10.5, tail 8.5, tarsus 2.65.”

“*Hab.*—Paraguay and Bolivia.”—(SHARPE, *l. c.*)

NISUS CHILENSIS.

Accipiter chilensis PHILIPPI & LANDB. Arch. f. Naturg. 1864, 43.—SCL. P. Z. S. 1867, 329.—SCL. & SALV. Ibis, 1868, 187 (Sandy Pt., Str. Magellan; Feb.); Ex. Orn. v, 1868, 73, 170, pl. xxxvii (adult and young); xi, 170; Nom. Neotr. 1873, 120.—GRAY, Hand List, i, 1869, 33.—SHARPE, Cat. Acc. B. M. 1874, 155.

Nisus chilensis GIEBEL, Thes. Orn. 1872, 263.

Accipiter cooperi PELZ. Orn. Nov. 1865, 13 (not of Bonap.).

Hab.—Chile (NAT. MUS.); Straits of Magellan (KING).

Wing, 8.25–9.90; tail, 7.65–8.50; culmen, 0.50–0.70; tarsus, 2.25–2.65; middle toe, 1.40–1.70. Fourth and fifth quills longest; first shortest; outer five with inner webs emarginated. Tail slightly rounded.

Adult female (specimen in Mus. Philad. Acad.*):—Above, sooty slate-color, darker anteriorly; tail narrowly tipped with white, and crossed with five or six bands of black. Tibiæ plain rufous; crissum immaculate white; other lower parts except throat barred or transversely spotted with umber-brown, these markings tinged with rufous and slate-color, and connected by dark shaft-streaks. Wing, 9.65; tail, 8.50; culmen, 0.70; tarsus, 2.50; middle toe, 1.70.

Young male (No. 32,978, Nat. Mus.):—Above, dark grayish-sepia, growing gradually darker anteriorly; all the feathers with terminal borders of rusty-ochraceous, these whiter on the ends of the secondaries; scapulars, larger wing and upper tail-coverts with concealed white spotting. Occipital feathers white, with terminal cuneate or tear-shaped spots of brownish-black, but the white mostly concealed. Nuchal feathers light tawny-ochraceous, similarly but more broadly marked. Tail grayish-brown, narrowly tipped with white, and crossed by five bands of dusky black, about as wide as the brown interspaces. Lower parts white, tinged with ochraceous-yellow on the breast, and with dilute

* This specimen is labeled, in Mr. Cassin's handwriting, "*F. linnaei*, nobis".

rufous on the tibiæ; crissum immaculate, but all other parts marked with brown, the breast, side, and abdomen having lanceolate streaks of clear dark brown, and the tibiæ having large transverse spots of lighter brown, mixed with rufous; throat with a medial series of narrow dusky streaks. Wing, 8.30; tail, 8.00; culmen, 0.52; tarsus, 2.45; middle toe, 1.40.

Adult female (No. 32,974, Nat. Mus.) :—Exactly like the male. Wing, 9.85; tail 8.80; culmen, 0.60; tarsus, 2.80; middle toe, 1.70.

The sexes differ in measurements as follows :—

Males : Wing, 8.25–8.30; tail, 7.65–8.00; culmen, 0.50–0.53; tarsus, 2.25–2.45; middle toe, 1.40.

Females : Wing, 8.60–9.85; tail, 8.50–8.80; culmen, 0.60–0.62; tarsus, 2.65–2.80; middle toe, 1.70.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	When collected.	From whom received.
32977	.....	♂+♀	Chile .....	.....	Verreaux
32978	.....	.....	do .....	.....	do
48827	16	♂	Chile, Valdivia.....	June —, 1864	Nat. Mus. Chile.....

NISUS BICOLOR.

Sparrius bicolor VIEILL. N. D. x. 1817, 325; Enc. Méth. iii, 1823, 1265.—PUCHER. R. Z. 1850, 92.

Cooperastur bicolor BONAP. Rev. et Mag. Zool. 1854, 538.

Accipiter bicolor STRICKL. Orn. Syn. i, 1855, 110.—SCL. & SALV. P. Z. S. 1869, 252 (Maruria, Venezuela); Ex. Orn. ix, 1869, 137, pl. lxix; *ib.* xi, 170; P. Z. S. 1870, 838 (coast of Honduras); P. Z. S. 1870, 787 (Venezuela); Nom. Neotr. 1873, 120.—GRAY, Hand List, i, 1869, 33.—SALVIN, P. Z. S. 1870, p. —(Veragua).—SHARPE, Cat. Acc. B. M. 1874, 154.

Nisus bicolor GIEBEL, Thes. Orn. 1872, 263.

Nisus pilcatus var. *bicolor* RIDGW. Pr. Boston Soc. N. H. May, 1873, 89.

Nisus variatus LESS. Tr. 1831, 61.—PUCHER. R. Z. 1850, 6, 210.

Accipiter scrfasciatus SWAINS. An. Menag. 1837, 282.

Nisus scrfasciatus CABAN. Schomb. Reis. Guian. iii, 1848, 736.

Astur scrfasciatus LICHT. Nomencl. Av. 1854, 4.

Micrastur dynastes VERREAUX, in Bonap. Notes Orn. 1854, 4.]

Rhynchomegus dynastes BONAP. Notes Orn. 1854, 4.

Accipiter erythrocnemis SCL. P. Z. S. 1860, 96 (not of Gray, 1848).

Accipiter pileatus SALVIN, Ibis, 1861, 354 (S. Mexico and Guatemala); *ib.* 1869, p. — (Costa Rica).—LAWRENCE, Ann. N. Y. Lyc. 1868, 134 (Costa Rica).

Hab.—Central District of Tropical America, from Southern Mexico to Ecuador and Guiana. Nicaragua, Costa Rica, and Surinam (Phila. Acad.); Costa Rica, Veragua, and Panama (Nat. Mus.); Cayenne (Boston Soc.).

Wing, 8.00–10.00; tail, 7.20–8.80; culmen, 0.55–0.75; tarsus, 2.25–2.70; middle toe, 1.45–1.80. Fourth and fifth quills longest; first shortest; outer five with inner webs emarginated. Tail slightly rounded.

Adult:—Pileum, plumbeous-black. Tibiæ bright cinnamon-rufous; lining of the wing white, usually mixed with grayish, or with darker shaft-streaks, and sometimes tinged with rufous along the outer border of the wing. Crissum white, sometimes tinged with grayish or rufous. Tail black, crossed by three to four narrow bands of dull plumbeous or slate, these indistinct on the upper surface, whitish underneath. Inner

webs of primaries marked with transverse spots of white. Rest of plumage continuous plumbeous, inclining to pearl-gray or ashy-blue on the lower surface (where the shafts of the feathers are usually conspicuously darker), and on the upper parts becoming gradually lighter toward the nape, which is bluish-plumbeous, abruptly contrasted with the black of the pileum.

Young.—Pileum brownish-black, bordered below by a continuous nuchal collar of unvariegated ochraceous. Rest of upper parts plain blackish-sepia, unbroken by any exposed white markings, and scarcely relieved by the narrow faint tips of fulvous to some of the feathers. Tail black, narrowly tipped with white, and crossed by four to five narrow bands of grayish-brown or mixed brown and white; these bands more regular, continuous, and almost entirely white on the under surface. Lower parts entirely ochraceous or white, paler on the crissum, and without any markings, except an occasional dusky shaft-streak here and there. Auriculars black.

Sexes alike in colors, but differing in size, as follows:—

Male.—Wing, 8.00–8.50; tail, 7.20–8.00; culmen, 0.55–0.60; tarsus, 2.25–2.40; middle toe, 1.45–1.50. (Six specimens.)

Female.—Wing, 9.50–10.00; tail, 8.60–8.80; culmen, 0.70–0.75; tarsus, 2.45–2.70; middle toe, 1.60–1.80. (Five specimens.)

The principal variations noticed among the few adults before us are quite trifling. The white of the lining of the wing and of the crissum is usually much clouded by a fine, irregular mottling of plumbeous; but in No. 61,363, ♂, from Veragua, there is none of this mottling, while the shafts of the feathers are conspicuously black. In No. 16,573, ♂, Panama (Frijole), the usual blackish shaft streaks of the lower parts are almost obsolete. The plumbeous of the nape is also darker or lighter in different individuals, producing thereby a variable abruptness of contrast with the black of the pileum. The young plumage varies more. Some are nearly pure white beneath, but a light ochraceous shade is the more usual color of the lower parts. In a young male, however (43,047), from Costa Rica, the entire lower parts and the nuchal collar are deep tawny-ochraceous, almost rufous on the breast and thighs. A young female from Costa Rica (No. 39,733) is strikingly similar in all the details of coloration to the adult of *Micrastur melano-leucus*, even to the markings of the tail. The general form and the size, also, are so similar to the adult male of that bird that the generic characters only are different.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.
16573	...	S.	♂ ad.	Panama Railroad	.....	McL
35182	...	S.	♀	San José, Costa Rica	Sept. 4, 1864	Carniel
39733	166	M.	♀ juv.	Costa Rica	Nov. —, 1863	A. von Frantzius
43047	17	M.	♂ juv.	Costa Rica (Turrialba)	July 17, 1866	J. Cooper
47363	...	M.	♂ ad.	Costa Rica	July 30, 1866	Carniel
62127	3704	S.	♂ ad.	Chiriqua	.....	O. Salvin
66333	11	S.	♂ juv.	Lipurio, Costa Rica	.....	W. M. Gabb
67868	...	S.	♀ ad.	do	.....	do

Other specimens examined.—Mus. Phila. Acad., 5; Boston Soc., 2; G. N. Lawrence, 5; American Mus., N. Y., 1. Total, 21.

NISUS PILEATUS.

Falco pileatus TEMM. Pl. Col. i, 1824, pl. 205.—MAX. Beitr. iii, 1830, 107.

Accipiter pileatus VIG. Zoöl. Journ. i, 1824, 338.—GRAY, Gen. i, 1849, 29; Hand List, i, 1869, 33.—BONAP. Consp. i, 1850, 32.—STRICKL. Orn. Syn. i, 1850, 109 (in part).—SCL. & SALV. Ex. Orn. xi, 1869, 170; Nom. Neotr. 1873, 120.—PELZ. Orn. Bras. i, 1871, 8, 399.—SHARPE, Cat. Acc. B. M. 1874, 153.

Nisus pileatus LESS. Man. i, 1828, 98.—BURM. Th. Bras. ii, 1855, 73.—SCHL. Mus. P.-B. Astures, 1862, 36; Rev. Acc. 1873, 70.

Nisus pileatus var. *pileatus* RIDGW. Boston Soc. Pr. N. H. May, 1873, 89.

Cooperastur pileatus BONAP. Rev. et Mag. Zool. 1854, 538.

Falco beskii LICHT. Nom. Av. 1854, 4.

Hab.—Brazil.

Wing, 8.10–10.40; tail, 6.80–9.00; culmen, 0.50–0.70; tarsus, 2.20–2.65; middle toe, 1.35–1.70. Fourth and fifth quills longest, first shortest; outer five with inner webs emarginated. Tail slightly rounded.

Adult:—Uniform plumbeous, except on the pileum, tibiæ, crissum, lining of the wing, remiges and rectrices; darker above, lighter beneath, where inclining to bluish-gray, the shafts conspicuously darker; pileum black; tibiæ and lining of wing uniform cinnamon-rufous; crissum white, somewhat tinged with gray. Tail crossed by four to five wide bands of black, the interspaces grayish-brown above, white on the under surface. Inner webs of primaries marked with transverse spots of white or mottled gray and white.

Young:—Above, dark sepia brown, the feathers bordered terminally with rusty, the scapulars, upper tail-coverts, and inner secondaries with conspicuous, large, transverse spots of white, many of them exposed. Pileum blackish, with rusty-ochraceous streaks in the superciliary region. Nape ochraceous, each feather with a central ovate stripe of blackish-brown; sides of neck similar; cheeks more finely streaked. Tail narrowly tipped with white, and crossed by four or five wide bands of brownish-black, the interspaces being grayish-brown (sometimes mixed with white) on the upper surface, and white on the lower. Lower parts ochraceous or ochraceous-white, the side of the breast with lanceolate stripes of blackish-brown, the sides with similar but broader stripes, or with broad spots; crissum immaculate. Lining of the wing ochraceous, usually more or less spotted.

Sexes alike in color, but differing in size, as follows:—

Male:—Wing, 8.10–8.40; tail, 6.80–7.20; culmen, 0.50–0.60; tarsus, 2.20–2.30; middle toe, 1.35. (Five specimens.)

Female:—Wing, 9.80–10.40; tail, 8.70–9.00; culmen, 0.66–0.70; tarsus, 2.50–2.65; middle toe, 1.65–1.70. (Seven specimens.)

Specimens of this species vary considerably, especially those in the young plumage. An adult in the museum of the Boston Society of Natural History (No. 573, Lafresnaye collection) differs from all others we have seen, in having the abdomen and sides strongly tinged with rufous. Two young examples before us differ quite conspicuously in the markings of their lower parts: No. 50,937 is deep ochraceous beneath, the tibiæ free from markings, with the exception of two or three small lanceolate streaks on the longer feathers of one thigh. The other specimen (No. 50,936) is nearly white beneath, the tibiæ deeper ochraceous, and thickly marked with large spots of brown. In this specimen, the light bands on the middle tail-feathers become white next the shaft. Both are females, in very young plumage.

List of specimens in United States National Museum.

Catalogue No.	Nature of specimen.	Sex and age.	Locality.	From whom received.
50934	S.	♀ ad...	Brazil	Sr. Don F. Albuquerque.
50935	M.	ad...	do	Do.
50936	S.	♀ juv...	do	Do.
50937	S.	♀ juv...	do	Do.
50940	M.	♂ ad...	do	Do.

Other specimens examined.—In Mus. Boston Society, 7; Mus. Comp. Zoöl., 1. Total, 13.

NISUS FUSCUS.

Falco fuscus GMELIN, S. N. i. 1788, 283.—LATH. Ind. Orn. 1790, 43; Gen. Hist. i, 1821, 283.—MILL. Cim. Phys. 1796, pl. xviii.—DAUD. Tr. Orn. ii, 1800, 86.—SHAW, Zoölogy, vii, 1809, 161.—AUDUBON, B. Am. 1821, pl. 374; Orn Biog. iv, 1838, 522.—NUTTALL, Man. 1833, 87.—TOWNSEND, Journ. Ac. Nat. Sci. Philad. viii, 1839, p. —.—PEABODY, Boston Journ. N. H. iii, 1841, 78 (Mass.).—READ, Pr. Ac. Nat. Sc. Phila. 1853, p. — (N. Ohio).—BREWER (ed. Wilson), Am. Orn. 1852, 685.—THOMPSON, Nat. Hist. Vermont, 1853, 61.

Accipiter fuscus BONAP. Comp. List, 1838, 5; Consp. Avium, i, 1850, 33.—GRAY, Genera of Birds, fol. 1844, sp. 4; List Acc. Brit. Mus. 1844, 38; Hand List, i, 1869, 32.—CASSIN, Proc. Ac. Nat. Sci. Phila. 1848, p. — (Jalapa; resident); *ib.* 1855, 279; Illustr. Birds Cal. Tex. etc. 1856, 95; Birds N. Am. 1858, 18.—BAIRD, Stansbury's Report, 1852, 314 (Salt Lake Valley); Catalogue Birds N. Am. 1859, No. 15.—WOODHOUSE, Sitgreave's Exp. 1853, 61.—HEERMANN, Pacific R. R. Rep. x, iv, 1853, 33.—NEWBERRY, *ib.* vi, 74.—HOY, Pr. Ac. Nat. Sci. Phila. 1853, p. — (Wisconsin); Smithsonian Rep. 1864, 437 (Missouri).—STRICKL. Orn. Syn. i, 1855, 108.—BREWER, N. Am. Oölogy, i, 1857, 18, pl. iii, figs. 23, 29, pl. v, fig. 54.—KNEELAND, Pr. Boston Soc. N. H. 1857, 233 (Keweenaw Pt., L. Superior).—SCLATER, Ibis, 1857, 125; P. Z. S. 1858, 294 (Oaxaca); 1864, 178 (city of Mex.).—XANTUS, Pr. Ac. Nat. Sci. Phila. 1859, 190 (S. California).—BARNARD, Smithsonian Rep. 1860, 434 (Pennsylvania).—COOPER & SUCKLEY, Pacific R. R. Rep. xii, ii, 1860, 146 (Washington Ter.).—BRYANT, Pr. Boston Soc. N. H. 1861, 104 (Bahamas).—BLAKISTON, Ibis, 1861, 317 (Saskatchewan).—BOARDMAN, Pr. Boston Soc. N. H., 1862, 122 (Calais, Me.).—VERRILL, *ib.* 137 (Anticosti I.); Pr. Essex Inst. iii, 1863, p. —.—SAMUELS, Rep. Sec. Ag. Mass. 1864, p. —; Birds of New Eng. 1870, 31, 81.—DRESSER, Ibis, 1865, p. — (Texas).—COUES, Pr. Ac. Nat. Sci. Phila. 1866, p. — (Arizona); *ib.* 1871, 27 (Ft. Macon, N. C.); Pr. Essex Inst. 1868, p. —; Pr. Boston Soc. 1868, 120 (South Carolina); Key to N. Am. Birds, 1872, 212; Check List of N. Am. B. 1873, 67; Birds Northwest 1874, 333.—LAWRENCE, Ann. Lyc. N. Y., 1866, p. —; *ib.* 1868, 134 (Costa Rica);—Mem. Boston Soc. N. H. 1874, p. 298 (W. Mexico; biographical notes by A. J. Grayson).—COOPER, Am. Nat. 1868, p. — (Montana); Orn. California, 1870, 466.—TURNBULL, Birds E. Penn. 1869, p. —.—SALVIN, P. Z. S. 1870, p. — (Veragua).—MAYNARD, Naturalist's Guide, 1870, 163 (Mass); Proc. Boston Soc. N. H., 1871, 26 (Coos Co., N. H.).—DALL & BANN. Tr. Chicago Ac. Sc. i, 1870, 271 (Alaska).—RIDGWAY, Pr. Ac. Nat. Sc. Phila. 1870, 141; Am. Nat. 1871, p. — (S. Ill.).—ALLEN, Bull. Mus. Comp. Zoöl. ii, 1871, 319 (Florida).—PARKER, Am. Nat. 1871, p. 169 (Iowa).—ROSS, Birds of Canada, 1871, 4.—SNOW, Birds of Kansas, 1872, 2.—TRIPPE, Pr. Boston Soc. N. H. 1872, p. — (S. Iowa).—HATCH, Bull. Minn. Ac. Sc. 1874, 51 (Minnesota; summer).—ADAMS, Rambles, 1873, 297.—SCL. & SALVIN, Nom. Neotr. 1873, 120.—SHARPE, Cat. Acc. Brit. Mus. 1874, 135.—HENSHAW, Ann. Lyc. N. Y. xi, 1874, 10 (Utah).

Astur fuscus DE KAY, Zoöl. N. Y. ii, 1844, 17, pl. ii, fig. 2 (♂ *juv.*).—GIRAUD, Birds Long I. 1844, 19.—GAMBEL, Pr. Ac. Nat. Sci. Phila. 1846, p. — (California).—PRATTEN, Tr. Ill. Ag. Soc. 1853-4, 599 (S. Ill.).—KENNICOTT, *ib.* 581 (N. Ill.).—PUTNAM, Pr. Essex Inst. 1856, 204 (Mass.; resident).—WILLIS, Smithsonian Rep. 1858, p. 281 (Nova Scotia).—BLAND, *ib.* p. 289 (Bermuda).

Nisus fuscus KAÜP, Contr. Orn. 1850, 64, 281.—SCHLEGEL, Mus. P.-B. Astures, 1862, 30; Revue Acc. 1873, 69.—RIDGWAY, Bull. Essex Inst. v, 1873, 165 (Colorado); *ib.* 1875, 22 (Nevada); Proc. Boston Soc. N. H. 1874, p. —; Ann. Lyc. N. Y. 1874, 181 (Illinois); B. B. & R. Hist. N. Am. B. iii, 1874, 224.—YARROW & HENSHAW, Rep. Orn. Spec. Wheeler's Exp. 1874, 49, 68 (Colorado and Utah).

- Falco dubius* GM. S. N. i, 1788, 281.—LATH. Ind. Orn. 1790, 43; Gen. Hist. i, 1821, 279.—DAUD. Tr. 1800, ii, 122.
- Accipiter striatus* VIEILL. O. A. S. 1807, pl. 14.—STRICKL. Orn. Syn. i, 1855, 109.
- Falco viellotinus* SHAW, Gen. Zoöl. vii, 1809, 204.
- Falco velox* WILS. Am. Orn. v, 1812, 116, pl. xlv, fig. 1.—BONAP. Isis, 1832, 1137; Ann. N. Y. Lyc. ii, 1833, 29.
- Accipiter velox* VIG. Zoöl. Beecheys Voy. i, 1824, 338.
- Astur velox* JAMES. (ed. Wils.) Am. Orn. i, 1831, 68.
- Falco pennsylvanicus* WILSON, Am. Orn. vi, 1812, 1, pl. 46, fig. 1.
- Accipiter pennsylvanicus* STEPHENS, Zoöl. xiii, ii, 1815, 32.—VIGORS, Zoöl. Journ. i, 1824, 338.—SWAINSON, Fauna Bor.-Am. ii, 1831, 8, 44.—JARDINE (ed. Wilson), Am. Orn. i, 1831, 70.
- Astur pennsylvanicus* LESSON, Man. i, 1829, 92.—JAMESON (ed. Wilson), Am. Orn. i, 1831, 70.
- Nisus pennsylvanicus* CUVIER, Rég. An. i, 1829, 334.—LESS. Tr. Orn. 1831, 59.
- Sparrius striatus* VIEILLOT, Nouv. Dict. x, 1817, 338.
- Nisus striatus* CUVIER, Règ. An. i, 1829, 334.
- Accipiter ardesiacus* VIEILL. Enc. Méth. iii, 1823, 1274.
- Nisus malini* LESSON, Tr. Orn. 1831, 58.
- Accipiter fringilloides* JARDINE (ed. Wilson), Am. Orn. ii, 1832, 215. (Not of D'Orb. 1839, ex Vigors, 1828.)
- ? *Nisus pacificus* LESSON, Man. 1847, 177.

Hab.—Entire continent of North America, south to Panama; Bahamas, but not in Cuba (where replaced by *N. fringilloides*) or other West India Islands.

Wing, 6.35–8.80; tail, 5.50–8.20; culmen, 0.35–0.60; tarsus, 1.85–2.30; middle toe, 1.10–1.55. Fourth and fifth quills longest, third nearly equal to sixth, outer five with inner webs emarginated. Tail even or slightly emarginated.

Adult male:—Above plumbeous, becoming gradually darker on the pileum, the feathers with blackish shaft-streaks. Tail rather lighter, usually browner, (sometimes with a narrow white terminal margin), crossed with four dusky bands. Occipital feathers pure white beneath the surface, and scapulars with large concealed roundish spots of the same. Lower parts mixed white and rufous, in transverse spots or bars, the rufous bars usually connected along the middle of the feather, the shaft being conspicuously darker. Throat and cheeks streaked but not barred. Crissum and anal region immaculate pure white. Tibiæ usually with the rufous predominating, rarely uniform rufous. Wing, 6.70–7.10; tail, 5.80–6.10; culmen, 0.38–0.42; tarsus, 1.90–2.05; middle toe, 1.10–1.25.

Adult female:—Similar to the male, but less bluish above, and the white of the lower parts less pure. Wing, 7.80–8.80; tail, 6.60–8.20; culmen, 0.48–0.60; tarsus, 2.00–2.25; middle toe, 1.30–1.55.*

Young male:—Above dark sepia, the feathers bordered terminally with rusty, the feathers of the nape widely edged with the same, or with fulvous-whitish; feathers of the pileum similarly but more narrowly edged with the same. Tail brownish-gray, crossed by four to five well-defined, continuous, narrow bands of blackish. Scapulars and upper tail-coverts with concealed large spots of white, and occipital region white beneath the surface. Beneath, white, with or without an ochraceous tinge, the anal region and crissum immaculate, the throat streaked with dusky; the breast, abdomen, sides, and flanks with broad stripes of dilute sepia, with darker shaft-streaks, these stripes sometimes dilating on the sides into chain-like series of spots; tibiæ with elliptical or tear-shaped stripes, or variously-shaped spots, of dilute sepia, on a

* Terminal two-thirds of bill deep black; basal portion pale blue; interior of mouth bright cobalt-blue; more purplish far back; cere, rictus, eyelids, and naked "eyebrow" oil-green; iris deep orange-red; tarsi and toes brownish lemon-yellow; claws jet-black (No. 956, Mus. R. R.).

white or pale rusty ground. Wing, 6.35–6.95; tail, 5.50–6.30; culmen, 0.35–0.40; tarsus, 1.85–2.05; middle toe, 1.05–1.25.

Young female.*—Exactly like the young male in markings and colors. Wing, 7.75–8.60; tail, 6.50–7.60; culmen, 0.45–0.50; tarsus, 2.05–2.30; middle toe, 1.30–1.50.

To represent the average style of the adult male, we select a specimen from Pennsylvania, No. 59055, Nazareth; L. E. Ricksecker. In this example, the upper parts are a uniform plumbeous throughout, the pileum being hardly appreciably darker than the back, and the tail equally blue with other portions; the tail has a distinct, narrow, white, terminal border; the longer upper tail-coverts also have very narrow white tips. On the lower parts (*i. e.*, breast, sides, flanks, and abdomen), the white and rufous bars are about equal in width, the latter growing wider toward the shaft of the feathers, along which they are connected by a narrow streak of rufous, the shaft itself being blackish; the white bars being thus broken into transverse oblong spots.

There are now before us thirty examples of the adult of this species, and we have examined many more; and our conclusion is that the variations exhibited in the plumage are purely individual, having nothing to do with climatic causes, since the two darkest examples are from Chiriqui, New Granada, and Fort Bridger, Wyoming, and the two lightest-colored ones are from Guatemala and Fort Resolution, Hudson's Bay Territory, while others from the Atlantic States are not distinguishable from some obtained on the Pacific coast. As illustrating the extremes of variation in the adult plumage, we cite the following specimens:—

The lightest in the entire series is an adult male from Choctun, Vera Paz, Guatemala (January), in the collection of Mr. Salvin. In this, the upper parts are a light, decidedly bluish, plumbeous, with conspicuous black shaft-streaks, exceedingly similar to the dorsal surface of adult males of *Falco columbarius*; the pileum is decidedly darker, with the shaft-streaks less conspicuous, and the tail is decidedly more brownish than the upper coverts. There is a quite distinct narrow superciliary stripe of small white streaks. The general aspect of the lower parts is white, all the feathers except on the anal region and crissum with very conspicuous blackish shaft-streaks, these being rendered the more prominent by the faintness of the rufous markings, which are distinct only along the sides, and even on the tibæ are narrower than the white interspaces. A peculiar feature of this specimen, so far as the series before us is concerned, is that the dusky bands on the inner web of the primaries are broken into irregular cloudings, although they have a general tendency toward transverse bands.

A specimen from Fort Resolution, Hudson's Bay Territory, April 26 (No. 629, Mns. R. R.), is very similar, but the bars of the lower parts are better defined, although not deeper in color, and the upper parts are darker and more uniform plumbeous; the superciliary streaks are also concealed or nearly obsolete. In this specimen, as in many others, the rufous bars are bordered with a narrow, dark, slaty margin.

The darkest examples are an adult male in Mr. Salvin's collection (No. 3705) from the southern slope of the volcano of Chiriqui; one from Utah (Beaver, September, 24; No. 2130, Mus. R. R.); and one in the National Museum, from Fort Bridger, Wyoming (No. 10759, May 26). The two former are alike in their upper plumage, which is a very dark plumbeous, becoming gradually but very perceptibly darker on the pileum, the shafts not conspicuously darker; the longer upper

* Iris sulphur-yellow; tarsi and toes rich lemon-yellow. (Fresh colors of No. 53204.)

tail-coverts and the tail itself have a narrow terminal margin of white. The lower plumage of these two is strikingly different, however, although in both the rufous greatly predominates over the white in amount. In the Chiriqui specimen, the rufous is nearly uniform across the breast, along the sides, and on the tibiae, being broken on these parts only by small, transverse, oblong spots of white, these bars becoming larger on the abdomen, where the relative proportion of the two colors is about equal; the rufous markings lack the usual marginal suffusion of plumbeous, and the darker shaft-streaks are so nearly obsolete as to be seen only upon very close inspection. In the Utah specimen, the rufous markings of the lower parts are remarkable chiefly for their uniformity of size and distribution and for the distinctness of the marginal suffusion of plumbeous, which gives a peculiarly dark aspect to these markings. The darker shaft-streaks are also very distinct. The Fort Bridger specimen is in the worn and faded summer plumage, and is consequently lighter-colored than the two just described; but were it in recent possession of the winter dress, to correspond with these, it would be all but indistinguishable from the Chiriqui specimen, the tibiae being uniform rufous, except on the front part, where broken by small white bars, and that of the sides, from breast to flanks, quite continuous.

The females present variations quite parallel with those of the males. The lightest in the series are No. 2499, Mus. R. R., Long Island, N. Y.; No. 54337, Nat. Mus., Yukon R., Alaska, and a specimen from Mexico, in Mr. Salvin's collection; the three being so extremely similar that the differences cannot be easily expressed. The darkest of the series are: one from Guatemala (No. 2264, Mus. O. Salvin; Jan.); No. 6954, Nat. Mus., Black Hills, Wyoming (August); No. 32499, Nat. Mus., Orizaba, Mex.; No. 8513, Nat. Mus., Camp Yuma, Colorado R., California (Dec.); and one from the District of Columbia (No. 49, Mus. L. Jouy); and these, also, are very much alike. A specimen from Saticoy, California (No. 63647, Nat. Mus.; Nov. 14), exhibits, to a greater extent than any other before us, an ashy shade on the sides of the breast, and a grayer cast to the rufous bars of the anterior lower parts; but the difference in this respect from other specimens is not conspicuous.

In the young plumage, the individual variation is much more remarkable than in the adult; but the variation seems to be essentially individual, although most specimens from the Northwest Coast region (Oregon to Sitka) are darker in their shades of color than those from other portions of the continent. This, however, is a mere tendency to climatic variation, since there are specimens in the series before us which are indistinguishable from these Northwest Coast examples; the localities thus represented being the Souris River, Dakota, Orizaba, Mexico (No. 37428), Lower California (No. 17210), and Fort Tejon, Upper California (No. 12023). The darkest individuals, however, are No. 45828, ♂ juv., Sitka, August, and No. 5845, ♀ juv., Fort Steilacoom, Washington Territory, August. In these, the upper parts are a blackish sepia, with the terminal borders of the feathers dark rusty, almost chestnut. The tibiae are pale rufous, with deeper rufous spots; the markings of the breast are deep sepia, broadly sagittate, those of the sides decidedly transverse, and widely connected along the middle of the feathers, while those on the abdomen are acute-ovate.

Specimens from the Atlantic States are palest, two from the District of Columbia (♂ juv., No. 2561, Mus. R. R., and ♀ juv., No. 631, Mus. R. R.) being the lightest-colored examples in the entire series of seventy-three specimens. In these, the upper parts are grayish-sepia, with the

terminal margins of the feathers rather fulvous than rusty; the lower parts are pure white, the markings being dilute sepia, those of the breast in the form of narrow stripes, those of the abdomen tear-shaped and acicular, while on the sides each one dilates into two ovate spots; those of the tibiae are chain-like, the ovate spots connected by a narrow streak. Several specimens similar to these from Guatemala are in Mr. Salvin's collection. Many young females, not remarkable for either darkness or lightness of colors, have the spots on the sides so decidedly transverse as to appear like wide bars, connected, however, along the shaft.

The adult plumage of this species is acquired at the first moult; but before this takes place, the plumage becomes much worn and faded, the upper parts being grayish-brown, the rusty terminal margins to the feathers absent or very indistinct, and the markings of the lower parts lighter and more sandy-brown. Three specimens in the collection (No. 3134, Mus. R. R., ♀ juv.; No. 67342, Nat. Mus., ♀ juv.; and No. 19384, Nat. Mus., ♀ juv.) represent this stage.

List of specimens in the United States National Museum.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
4198	12			♀ juv.	San Francisco, Cal	Winter of 1853-54.	R. D. Cutts	Dr. Newberry.
4511	.....	.....	.....	.....	do .....	.....	Lieut. Williamson	
4512	11	.....	.....	.....	do .....	.....	do	
4589					Fort Steilacoom, W. T.		Dr. Potts	W. S. Wood.
5375	1	.....	.....	.....	Saranac Lake, N. Y.	Aug. —, 1855	S. F. Baird	
5584	6	262	.....	♂ juv.	Bridge's Pass, Rocky Mountains.	Aug. 14, 1856	Lieut. Bryan	
5842	9	543			Fort Steilacoom, W. T.	Sept. —, 1856	Dr. Suekley	Dr. Heermann.
5843	.....	542	.....	.....	do	Sept. —, 1856	.....	
5844	10	541	.....	.....	do	Sept. —, 1856	.....	
5845	8	544		♀ juv.	do	Sept. —, 1856		W. S. Wood.
5990	2	.....	.....	♂ juv.	Orange, N. J.	Oct. —, —	Dr. J. G. Cooper	
6867	13	.....	.....	.....	Tejon Valley, Cal. ....	.....	Lieut. Williamson	
6907	4				Selkirk Settlement			W. S. Wood.
6908	3	.....	.....	.....	.....	.....	.....	
6954	5	387	.....	♀ ad.	Black Hills	Aug. 11, 1857	Lieut. Bryan	
7599	2				Washington, D. C.		W. Hutton	A. Schott.
8013	7	.....	.....	♀ ad.	Camp Yuma, Cal.	Dec. —, 1854	Major Emory	
8405	.....	.....	.....	.....	Puget Sound, W. T.	Aug. 30, 1857	A. Campbell	
8513	14			♀ ad.	Camp Yuma, Cal.	Dec. —, 1854	Major Emory	J. G. Cooper.
8514	11	98	.....	♂ juv.	Shoalwater Bay, W. T.	Sept. 23, 1854	Governor Stephens ..	
8632	2b	.....	M.	♂ juv.	Cape Florida, Fla.	Nov. 2, 1857	G. Würdemann	
9064					Black Hills		Lieut. Warren	C. B. Kennerly.
9509	.....	67	.....	.....	.....	Nov. 4, —	A. Campbell	
10059	.....	.....	.....	.....	Fort Bridger, Wyo.	May 26, 1858	C. Drexler	
10060					do	Sept. 16, 1858	do	W. S. Wood.
10089	.....	M.	♂ ad.	.....	Washington, D. C. ....	.....	J. C. McGuire	
10759	.....	452	♂ ad.	.....	Fort Bridger, Wyo.	May —, 1858	C. Drexler	
11598					Cant. Burgwyn, N. Mex.		W. W. Anderson	C. B. Kennerly.
11791	.....	.....	♀ juv.	.....	Simiahmoo, W. T.	July 16, 1858	A. Campbell	
11990	.....	M.	♂ ad.	.....	Washington, D. C.	Apr. 28, —	H. A. Falls	
12019		M.			do			H. O. Birch
12020	.....	M.	.....	.....	do .....	.....	.....	
12023	.....	M.	♀ juv.	.....	Fort Tejon, Cal. ....	.....	J. Xantus	
12118		M.	♀ juv.		"United States"			W. W. Anderson.
13110	.....	M.	.....	.....	Cant. Burgwyn, N. Mex. ....	.....	W. W. Anderson	
13226	.....	117	.....	.....	Big Sandy Creek	Aug. 28, 1858	Capt. J. H. Simpson ..	
16757		165	♀ juv.		Hudson's Bay Terr.		Captain Blakiston ..	Dr. W. Wood
16999	.....	.....	♀ juv.	.....	East Windsor, Conn. ....	.....	Dr. W. Wood	
17210	.....	3067	.....	.....	San Nicolas, Lower California.	Oct. —, 1859	J. Xantus	
17211		3417			Mira Flores, Lower California.	Nov. 25, 1859	do	John Pearsall.
17518	.....	.....	.....	.....	San River, Dak. ....	.....	do	
17519	.....	.....	.....	.....	do .....	.....	do	
18405		26			West of Fort Benton		Lieut. Mullen	Captain Reynolds.
19116	.....	154	M.	♀ ad.	Border River	Oct. 1, —	do	
19117	.....	182	.....	.....	Rose Bend	Sept. 9, —	do	
19383					Fort Resolution, Hudson's Bay Territory.	Apr. 26, —	R. Kennicott	Dr. Hines.
19384	.....	.....	.....	♀ juv.	do	June 16, —	do	

List of specimens in the United States National Museum—Continued.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
21337		24			Yreka, Cal.	Oct. 6, —	W. Vnille	
21338		24		♂ juv.	do	Oct. 7, —	do	
21339		24			do	Oct. 18, —	do	
21470					Philadelphia, Pa.		John Krider	
21471					do		do	
22026		82			Bitterroot Valley	Aug. 30, 1860	J. G. Cooper	
22566		4			La Pierre House	Sept. —, 1860	B. R. Ross	J. Flett.
23114		930			Fort Simpson	May —, 1861	do	
23610					Moose Factory		John McKenzie	
25940			M.	♂ juv.	"United States"		Dr. Lieb	
25941					do		do	
27067		1110			Yukon, Alaska		R. Kennicott	
27068		1310			Fort Resolution		B. R. Ross	
27108		89			Mirador, Mexico		Dr. C. Sartorius	
27109					do		do	
30234		197		♀ ad.	Mauzanillo Bay	Feb. —, 1863	J. Xantus	
30970		128			Washington, D. C.	Oct. 22, 1861	C. E. Schmidt	
31357	7259	147			Fort Rae, Great Slave Lake.	June 9, 1863	R. McFarlane	
31359		653			Fort Resolution	Sept. —, 1862	J. Lockhart	
32298					Moose Factory	Sept. —, 1862	J. McKenzie	
32499				♀ ad.	Orizaba, Mexico		F. Sumichrast	
33894					Fort Union		E. T. D.	
37428		17		♀ juv.	Orizaba, Mexico	Dec. —, 1864	F. Sumichrast	
39401		119			Mount Carroll, Ill.		H. Shimer	
41726		1194		♂ juv.	Fort Whipple, Ariz.		Dr. E. Cones	
41887			M.	♀ juv.	Philadelphia, Pa.		J. Krider	
41888			M.	♀ juv.	do		do	
41889			M.	♀ juv.	do		do	
41890			M.		do		do	
42136		141			Orizaba, Mexico		Bolten	
45826				♀ juv.	Sitka, Alaska	Sept. —, 1866	Colonel Bulkley	Fred. Bischoff.
45827					do	May —, 1866	do	Do.
45828				♂ juv.	do	Aug. —, 1866	do	Do.
45876					do	Sept. —, 1866	do	Do.
45877					do	May —, 1866	do	Do.
45878					do	Aug. —, 1866	do	Do.
46793		817			Laredo, Tex.	June —, 1867	Dr. H. B. Butcher	
49798		819			Koyonkuk, Alaska	Apr. 29, 1867	W. H. Dall	
50201					—?		—?	
50202					—?		—?	
51294		278		♂ ad.	El Mojon, Costa Rica	Dec. 1, 1867	Dr. A. von Frantzis	José C. Zeledon.
51295		296			do	Dec. 30, 1867	do	Do.
51704		223			Fort Yukon, Alaska		J. McDougall	
54299		257			Orizaba, Mexico		F. Sumichrast	
53204		917		♀ juv.	Upper Humboldt Valley, Nev.	Sept. 10, 1867	Clarence King	R. Ridgway.
54336				♂ ad.	Nulito, Alaska	May 1, 1868	W. H. Dall	
54337				♀ ad.	Yukon River, Alaska	May 1, 1868	do	
54337					Kadiak, Alaska	Mar. 15, 1869	F. Bischoff	
55016		617		♀ juv.	Mazatlan, Mexico	Jan. —, —	Col. A. J. Grayson	
55017		1130		♂ ad.	do	Jan. —, —	do	
57864				♀ juv.	Tehuantepec, Mexico	Jan. 6, —	F. Sumichrast	
58137				♀ juv.	Kadiak, Alaska	Mar. 15, 1869	F. Bischoff	
59055			M.	♂ ad.	Nazareth, Pa.		L. E. Ricksecker	
59262		570			Washington, D. C.		Dr. D. W. Prentiss	
59263		372			do		do	
59501		975			Tehuantepec	Nov. —, 1869	F. Sumichrast	
59502		977		♀ ad.	do	Nov. —, 1869	do	
59942		1074			Fort Tejon, Cal.		J. Xantus	
59943		3979			San José, Lower California.	Feb. —, 1860	do	
59944		1407			Fort Tejon, Cal.		do	
60624		530			Uintah Mountains	Sept. 20, 1870	F. V. Hayden	H. D. Schmidt.
62234		228			Little Geyser Basin, Mont.	Aug. 20, 1872	do	C. H. Merriam.
62235		229			do	Aug. 20, 1872	do	Do.
62809		472			Provo, Utah	Nov. 30, 1872	Lieut. Wheeler	H. W. Henshaw.
63470		284			Beaver, Utah	Sept. 24, 1872	do	Do.
63471		301			Toquerville, Utah	Oct. 15, 1872	do	Do.
63647				♀ ad.	Saticoy, Cal.	Nov. 14, 1872	J. G. Cooper	
63676					Labrador	Sept. —, 1868	W. Brewster	A. Lechavillier.
63677					Labrador?	Oct. —, 1871	do	Do.
65909		378			Somris River, Dak.	Sept. 3, 1873	Dr. E. Cones	
67342		359		♀ juv.	Denver, Col.	May 9, 1873	Lieut. Wheeler	H. W. Henshaw.
67343		875		♂ juv.	Camp Grant, Ariz.	Sept. 24, 1873	do	Do.
67350		914		♀ ad.	Gila River, N. Mex.	Oct. 15, 1873	do	Do.

Other specimens examined.—In mus. Philad. Acad, 14; American Museum, N. Y., 7; Boston Soc., 5; Comp. Zoöl., Cambridge, 9; G. N. Lawrence, 1; O. Salvin, 12; W. S. Brewer, 1; L. Jouy, 3; S. F. Baird, 2; R. Ridgway, 8. Total number of specimens examined, 182.

Measurements.

ADULT MALES.

Catalogue No.	Museum.	Date.	Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Collected by—
59055	U. S.		Nazareth, Pa.	6.80	5.80	0.40	1.90	1.10	L. E. Rickseeker.
11990	do		District of Columbia	6.60	5.70	0.42	2.00	1.20	H. A. Falls.
10089	do		do	6.90	6.00	0.40	2.00	1.18	J. C. McGuire.
2498	R. R.		Long Island, N. Y.	6.80	5.90	0.40	2.00	1.15	J. H. Batty.
629	do	April 26	Fort Resolution, Hudson Bay Territory.	7.00	6.00	0.38	2.00	1.25	
10759	U. S.	May 26	Fort Bridger, Wyo.	6.90	5.90	0.40	1.95	1.15	C. Drexler.
2130	R. R.	Sept. 24	Beaver, Utah	7.00	6.10	0.40	2.00	1.20	H. W. Henshaw.
55017	U. S.	Jan. —	Mazatlan, Western Mexico	7.10	6.00	0.40	1.95	1.18	A. J. Grayson.
2270	O. S.	do	Guatemala (Choctun).	6.90	5.85	0.40	1.95	1.12	O. Salvin.
51294	U. S.	Dec. 1	Costa Rica.	6.70	5.80	0.40	1.90	1.20	J. C. Zeledon.
3705	O. S.		Chiriqui	6.90	5.80		1.95	1.10	E. Arce.
54336	U. S.	May 15	Nulato, Alaska	7.00	6.10	0.40	2.05	1.20	W. H. Dall.
48	L. J.	Mar. —	District of Columbia	7.00	6.10	0.40	1.95	1.18	L. Jouy.

YOUNG MALES.

25940	U. S.			6.70	5.70	0.40	1.95	1.25	
41890	do		Philadelphia.	6.50	5.50	0.40	1.90	1.15	J. Krider.
8632	do		Cape Florida	6.70	5.90	0.38	1.85	1.15	G. Würdemann.
738	S. F. B.	Sept. 21	Carlisle, Pa.	6.40	5.50	0.35	1.85	1.20	S. F. Baird.
2561	R. R.	Dec. 1	District of Columbia	6.80	6.10	0.38	1.95	1.18	E. Coues.
2500	do		Long Island, N. Y.	6.70	6.00	0.35	1.90	1.20	J. H. Batty.
67343	U. S.	Sept. 24	Camp Grant, Ariz.	6.80	6.30	0.35	1.85	1.15	H. W. Henshaw.
21338	do	Oct. —	Yreka, Cal.	6.60	6.00	0.35	1.90	1.20	W. Vuille.
630	R. R.	Oct. 6	do	6.95	6.50	0.40	1.90	....	Do.
41726	U. S.	Mar. 11	Fort Whipple, Ariz.	6.95	5.80	0.38	....	1.15	E. Coues.
5584	do	Aug. 14	Bridger's Pass	6.80	5.90	0.38	2.00	1.25	W. T. Wood.
5990	do	Oct. —	Orange, N. J.	6.70	5.90	0.40	1.85	1.12	J. G. Cooper.
8514	do	Sept. 23	Shoalwater Bay, W. T.	6.65	5.90	0.40	2.05	....	Do.
58137	do	Mar. 10	Kadiak, Alaska.	6.95	6.00	0.38	1.95	1.20	F. Bischoff.
45828	do	Aug. —	Sitka, Alaska	6.90	5.90	0.40	2.00	1.20	Do.
37428	do	Dec. —	Orizaba, Mexico	6.60	6.10	0.40	1.85	1.20	F. Sumichrast.
2265	O. S.	Nov. —	Guatemala (Colon)	6.35	6.00	0.40	1.90	1.15	O. Salvia.
do	do	Oct. 22	Guatemala (Ducñas)	6.55	5.50	0.38	1.85	1.05	Do.
2268	do		do	6.70	5.90	0.38	1.90	1.20	Do.

ADULT FEMALES.

19116	U. S.		Powder River	8.10	7.15	0.48	....	....	E. H. Trook.
2499	R. R.		Long Island	8.30	7.40	0.50	2.10	1.45	J. H. Batty.
49	L. Jouy		District of Columbia	8.20	7.00	0.50	2.20	1.45	L. Jouy.
956	R. R.	Oct. 22	Southern Illinois	7.80	6.70	0.50	2.12	1.30	R. Ridgway.
3134	do	Oct. 5	do	7.80	6.60	0.55	2.20	1.40	J. L. Ridgway.
6954	U. S.	Aug. 11	Black Hills	8.40	7.20	0.50	2.20	1.45	W. S. Wood.
8513	do	Dec. —	Camp Yuma, Cal.	8.00	7.35	0.50	2.10	1.40	A. Schott.
67350	do	Oct. 16	Gila River, N. Mex.	8.10	7.15	0.50	2.25	1.40	H. W. Henshaw.
63471	do	Oct. 15	Toquerville, Utah	8.20	7.30	0.50	2.15	1.40	Do.
63647	do	Nov. 14	Saticoy, Cal.	7.80	6.90	0.48	2.10	1.35	J. G. Cooper.
54337	do	May 1	Yukon River, Alaska	8.20	6.90	0.50	2.20	....	W. H. Dall.
32499	do		Orizaba, Mexico	8.05	7.20	0.50	2.20	1.45	F. Sumichrast.
59502	do	Nov. 3	Tehuantepec, Mexico	8.10	6.90	0.52	2.20	1.40	Do.
2269	O. S.		Guatemala (Ducñas)	8.10	6.90	0.50	2.15	....	O. Salvin.
2271	do	Nov. —	do	8.25	7.00	0.48	2.10	1.35	Do.
2264	do	Jan. —	Guatemala (Choctun)	8.20	7.00	0.50	2.10	1.35	Do.
do	do		Mexico	8.10	7.00	0.50	2.15	1.45	Mr. Le Strange.

Measurements—Continued.

YOUNG FEMALES.

Catalogue No.	Museum.	Date.	Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Collected by—
1175	S. F. B.	Sept. 8	Carlisle, Pa	8.00	7.00	0.50	2.25	1.35	S. F. Baird.
16999	U. S.		East Windsor Hill, Conn	8.10	7.00	0.45	2.15	....	Dr. Wood.
..do	..do	Sept. 3	Souris River, Dak	7.90	7.30	0.50	2.15	1.40	E. Coues.
16757	..do		Hudson's Bay Territory	8.60	7.60	0.50	2.30	1.45	Capt. Blakiston.
631	R. R.	Sept. 13	District of Columbia	8.30	7.30	0.48	2.10	1.35	D. W. Prentiss.
2501	..do		Long Island, N. Y.	7.80	6.5	0.48	2.05	1.30	J. H. Batty.
50	L. J.		District of Columbia	7.90	6.80	0.48	....	....	L. Jony.
45826	U. S.	Sept. —	Sitka, Alaska.	8.00	7.00	0.48	2.25	1.50	F. Bischoff.
5815	..do	Aug. —	Fort Steilacoom, W. T.	8.15	7.00	0.48	2.20	....	G. Suckley.
11791	..do	July 16	Simiahmoo, W. T.	7.85	7.20	0.48	2.30	1.45	C. B. Kennerly.
4198	..do	Winter	San Francisco, Cal.	8.60	7.50	0.50	2.20	1.40	R. D. Cutts.
17210	..do	Oct. —	San Nicolas, Lower Cala	8.00	6.60	0.50	2.25	1.40	J. Xantus.
67312	..do	May 9	Denver, Colo	7.90	7.10	0.50	2.20	1.40	H. W. Henshaw.
55016	..do		Mazatlan, Mexico	8.40	7.20	0.50	2.15	1.45	A. J. Grayson.
57864	..do	Jan. 6	Tehuantepec, Mexico.	8.00	7.00	0.48	2.10	1.35	F. Sumichrast.
	O. S.	Jan. 1	Costa Rica (San José)	8.00	7.00	0.50	2.25	1.40	J. Carmiol,
2266	..do	Dec. —	Guatemala (San Geronimó)	7.80	6.90	0.50	2.12	1.40	O. Salvin.
2270	..do		Guatemala (Dueñas)	7.75	6.50	0.45	2.20	1.40	Do.
19384	U. S.	June 16	Fort Resolution, Hudson's Bay Territory.	....	7.10	0.48	2.20	....	R. Kennicott.
41887	..do		Philadelphia, Pa	8.20	7.00	0.50	2.20	1.40	J. Krider.
41888	..do		..do	8.20	7.10	0.52	2.10	1.40	Do.
41889	..do		..do	7.95	6.80	0.50	2.10	....	Do.
12023	..do		Fort Tejon, Cal	8.50	7.30	0.50	2.30	....	J. Xantus.
12118	..do		"United States"	8.10	6.80	0.50	2.30	....	

Collectors' notes on colors of soft parts, including fresh measurements (National Museum specimens).

No. 5584: length, 11.00; extent, 18.50.

No. 5842: length, 13.00; extent, 25.00.

No. 5844: length, 13.50; extent, 25.50.

No. 5845: length, 13.00; extent, 23.00.

No. 8632: length, 11.50; extent, 21.50; iris gold color; legs yellow; bill black and yellow.

No. 11592: length, 12.25; extent, 21.25.

No. 11990: length, 11.50; extent, 21.75.

No. 13223: length, 13.50; extent, 24.00.

No. 17211: length, 12.50; extent, 17.00.

No. 19383: length, 11.50; extent, 21.85; iris orange-red.

No. 19384: length, —?; extent, —?; iris brown.

No. 41726: length, 11.90; extent, 20.80.

No. 45826: length, 13.50; extent, 25.00.

No. 45827: length, 13.50; extent, 26.00.

No. 45828: length, 11.50; extent, 22.00.

No. 45876: length, 13.50; extent, 25.00.

No. 45877: length, 13.50; extent, 26.00.

No. 45878: length, 11.50; extent, 22.00.

No. 65909: length, 13.50; extent, 25.50.

NISUS FRINGILLOIDES.

Accipiter fringilloides VIG. Zoöl. Journ. iii, 1827, 434.—GRAY, List B. B. M. 1848, 71.—
 BONAP. Consp. i, 1850, 32.—STRICKL. Orn. Synon. i, 1855, 108 (sub *A. fuscus*).—
 BREWER, Pr. Boston Soc. N. H. 1860, p. —.—GRAY, Hand List, i, 1869, 32, No.
 311.—SHARPE, Cat. Acc. Brit. Mus. 1874, 135 (foot-note).

Nisus fringilloides D'ORB. (R. DE LA SAGRA), 1840, 18.—LEMB. Av. de la Isla de Cuba,
 1850, 128.

Nisus fuscus var. *fringilloides* RIDGW. B. B. & R., Hist. N. Am. B. iii, 1874, 223.

Astur fuscus LEMB. Av. Cuba, 1850, 16, lam. iii, fig. 1.

Accipiter fuscus BREWER, Pr. Boston Soc. N. H. 1860, p. —.

Nisus fuscus LEMB. Av. Cuba, 1850, 128.—GUNDEL. Journ. f. Orn. Nov. 1854.

Hab.—Cuba.

Adult male.—"The entire upper plumage is of a bluish slate-color,

darker on the head; the tail brownish, crossed with five bands of blackish-brown, and ending with white; primaries brown; sides of the head and of the neck uniform bright rufous (not of a deep color) and without dark striæ; chin and throat pale rufous-white, unspotted; under plumage white, with narrow transverse bars of pale rufous on the breast; and on the abdomen, sides, and thighs with very faint narrow bars of pale rufous-brown, almost obsolete on the lower parts of the abdomen and thighs; under tail-coverts pure white; bill black, plumbeous at base; legs yellow.

"Length, about $10\frac{1}{2}$ inches; wing, $6\frac{1}{4}$; tail, $4\frac{7}{8}$; tarsus, $1\frac{7}{8}$."

Adult female.—"It is larger than the male and more distinctly barred on the breast, the thighs rather lightly so; it has the unspotted rufous cheeks, and the lower part of the abdomen is white, as in the male."

Young male.—" . . . "Umber-brown above, with the cheeks of a reddish-brown streaked with dusky; the breast blotched with light brown, and bars of darker brown on the abdomen; lower part of the abdomen white, with faint brown transverse markings."

Young female.—" . . . "Pale umber-brown above, the sides of the head and neck having dusky streaks and showing scarcely any coloring of rufous; sagittate blotches on the breast of a pale rufous brown, with narrow transverse waving lines on the abdomen and thighs of a paler brown."

"Another young female . . . has the sides of the head rufous-brown, with dark streaks, and the throat pale rufous; the markings on the lower parts darker and more clearly defined, the thighs more barred than in any of the others."

Mr. Lawrence remarks (*l. c.* p. 10):—"In form, *fringilloides* is smaller and more slender than *fuscus*, but the clear rufous cheeks, nearly white under plumage, especially that of the thighs, are strongly in contrast with the rufous-brown cheeks streaked with dark brown, and the strongly-marked rufous under plumage and thighs of *fuscus*. All specimens of the young under examination have the markings on their under plumage transverse, on the abdomen and thighs being waving and narrow; whereas in the young of *fuscus* these markings are longitudinal, large in size, and more extensively distributed; on the sides they are heart-shaped in form, and guttate on the abdomen and thighs."

Dr. Gundlach remarks (Lawrence, *l. c.*, p. 11) that "the adult male and female have the bill black, with the base of a lead color; cere and feet yellow, or pale orange; iris reddish-gray. The bill in the young is black on the upper part to the extremity, with a bluish base; cere and cheeks yellowish-green; iris pale orange-gray; feet yellow." According to the same gentleman, the fresh measurements were as follows:—*Adult male*.—Length, 0.278; extent, 0.508; tail, 0.135. *Adult female*.—Length, 0.326; extent, 0.618; tail, 0.155.

NISUS ERYTHROCNEMIS.

Falco nisus MAX. Beitr. iii, i, 1830, 111 (not of Linn. 1766.)

Accipiter erythroucmia GRAY, List Acc. B. M. 1848, 70.

A. erythronemius BONAP. Consp. i, 1850, 32.—STRICKL. Orn. Syn. i, 1855, 116.

A. erythrocnemis SCL. P. Z. S. 1855, 134; *ib.* 1860, 76; *ib.* 1866, 303.—LEE, Ibis, 1873, 135 (Arg. Rep.; notes).—SCL. & SALV. Ex. Orn. 1867, pl. xvii; Nom. Neotr. 1873, 120.—SHARPE, Cat. Acc. B. M. 1874, 147.

A. erythrocnemis GRAY, Hand List, i, 1869, 32.

Nisus erythrocnemis KAUP, Contr. Orn. 1850, 64.—SCHL. Mus. P.-B. Rev. Acc. 1873, 70.

N. erythronemius RIDGW. Pr. Boston Soc. N. H. May, 1873, 58.

Nisus fringillarius subsp. *erythrocnemis* KAUP, Wieg. Arch. Bd. i, 1850, 34.

Nisus striatus BURM. Th. Bras. ii, 1856, 71.

Hab.—Brazil, Bolivia, and Argentine Republic.

Wing, 6.25–7.40; tail, 5.40–6.20; culmen, 0.35–0.45; tarsus, 1.55–1.90; middle toe, 1.10–1.20. Fourth to fifth quill longest; first shortest; outer five with inner webs emarginated; tail even.

Adult.—Above, slate-color (varying from bluish to brownish), the pileum slightly darker; the scapulars with large rounded concealed spots, and upper tail-coverts with smaller concealed bars of white; tail narrowly tipped with white and crossed by four to five regular, continuous bands of black and slate-gray; the bands and interspaces of about equal width. Tibiæ plain rufous; rest of lower parts white; the crissum immaculate and the throat variegated only by fine dusky shaft-streaks; auriculars and sides strongly tinged with rufous; breast, abdomen, sides, and flanks marked with narrow transverse bars of rusty-brown, grayish-brown, or rufous.

Young.—Above, grayish-brown, the feathers very conspicuously bordered terminally with rusty; tail grayer, crossed by five regular and continuous bands of dull black, nearly equal in width to the gray interspaces (sometimes wider, sometimes narrower). Tibiæ uniform rufous; other under parts white, sometimes tinged with yellowish-ochraceous (especially on the under side of the wings); the sides tinged with rufous; the breast and sides with rusty-brown markings in the form of sagittate spots; crissum immaculate; throat and cheeks ditto, or with merely fine shaft-streaks of blackish.

In the coloration of the upper parts, bright-rufous auriculars, and in the regularity and narrowness of the bars of the lower parts, as well as in their color, the adult female of this species resembles very closely the adult male of *N. fringillarius* of Europe, but differs in smaller size, uniform rufous tibiæ, and more distinctly-banded tail.

List of specimens in United States National Museum.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
50945				♂ juv.	Brazil.....	.....	Sr. Don F. Albuquerque.	.....
58945					do.....	.....	do.....	.....
61942				♀ juv.	do.....	.....	.....	.....

Other specimens examined.—In Coll. O. Salvin, 3; G. N. Lawrence, 1; Philad. Acad., 3; N. Y. Mus., 1; Mus. Comp. Zool., 1; total, 12.

Measurements.

Catalogue No.	Museum.	Sex and age.	Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Collected by—
7793	M. C. Z.	♂ ad.	Pernambuco.....	6.30	5.60	.....	.....	.....	J. C. Fletcher.
.....	O. S.....	♀ ad.	Bahia.....	7.40	6.20	0.45	1.80	1.20	Wucherer.
.....	O. S.....	♂ juv.	Brazil.....	6.20	6.00	0.35	1.65	1.10	H. Whitely.
.....	O. S.....	♀ juv.	Bahia.....	7.40	6.60	0.45	1.90	.....	Wucherer.

NISUS VENTRALIS.

Accipiter erythrocnemius? SCL. P. Z. S. 1855, 134.—ORTON, Am. Nat. 1871, 624 (Quito Valley).

Accipiter ventralis SCL. P. Z. S. 1866, 303.—SCL. & SALV. Ex. Orn. ii, 1867, 25, pl. xiii; ib. xi, 170; P. Z. S. 1870, 782, 788 (Venezuela); Nom. Neotr. 1873, 120.—GRAY, Hand List, i, 1869, 32.—SHARPE, Cat. Acc. B. M. 1874, 149.

?*Accipiter nigro-plumbeus*; LAW. Ann. N. Y. Lyc. 1869, 270 (Quito Valley, Ecuador=*melanism*?).

Hab.—Venezuela, Colombia, and Ecuador.

Wing, 6.30–8.70; tail, 5.40–7.25; culmen, 0.35–0.55; tarsus, 1.65–2.20; middle toe, 1.10–1.50. Fourth and fifth quills longest; first shortest; outer five with inner webs sinuated. Tail even, or very slightly rounded. Tibiæ uniform deep rufous. Tail dull black, crossed by four narrow continuous bands of slate-gray or brownish-gray, and narrowly tipped with grayish or white. *Adult.*—Above, uniform dark plumbeous except the tail, the scapulars and upper tail-coverts with concealed white spots. Beneath, chiefly rufous, sometimes entirely so, but usually whitish in the crissum and throat, and often broken along the middle line by an indistinct transverse white spotting. *Young.*—Above, dark sepia, the feathers with rusty terminal borders. Lower parts (except tibiæ) white, marked with large, rather longitudinal, sagittate spots of umber.

Sexes alike in color, but differing in size as follows:—

Males:—Wing, 6.60–6.95; tail, 5.70–6.20; culmen, 0.40–0.45; tarsus, 1.90–2.10; middle toe, 1.25–1.30. (Six specimens.)

Females:—Wing, 7.75–8.00; tail, 6.80–7.00; culmen, 0.50–0.55; tarsus, 2.15–2.20; middle toe, 1.40–1.50. (Four specimens.)

There is greater variation in the plumage of this species than in any of its allies, and, contrary to the usual rule, the adults vary more than the young. The darkest example of the latter we have seen is an adult male from Ecuador in Mr. Salvin's collection. In this specimen, every portion of the lower parts is rufous, even the throat, crissum, and lining of the wing being of this color, while the tibiæ and abdomen are so dark and purplish as to border on a chestnut shade. The flanks show narrow, transverse, indistinctly-defined bars of white. An adult male from the interior of New Granada is quite a contrast to this, and represents the light extreme. In this example, the breast is nearly uniform light gray and rufous, the former predominating, while the sides, abdomen, and flanks are barred with white, gray, and rufous, in broad, ragged, not well-defined bars, of which the white ones average the widest, while the rufous and gray are mixed in nearly equal proportion. The crissum and throat are pure white, the latter with dusky shaft-streaks; the lateral feathers of the former with a faint mottling of grayish. An adult male from Venezuela (Merida) has the flanks uniform deep rufous, like the tibiæ; the breast, belly, and sides being light grayish-fulvous, becoming lighter toward the jugulum; the feathers marked with darker grayish bars concealed beneath the surface. Other specimens are variously intermediate between these, there being usually more or less of an indistinct barring of white and grayish along the median line of the abdomen and breast. The young birds vary considerably also, especially in the markings of the lower parts. In the males, these are usually longitudinal on the breast; but in the two females before us, each of these markings spreads anteriorly, so as to form a spot of a widely sagittate form.

Besides the variations noted above, the *N. nigroplumbeus* (Lawrence) may represent a melanism of the adult plumage in this species, since,

except in the uniform dark plumbeous of the lower parts it is exactly like dark Ecuador examples of *N. ventralis*, while the type of the supposed species is from the Quito Valley. In his recent work on the Owls,* Mr. Sharpe mentions (on p. 23) a specimen of *Bubo*, supposed to be *B. virginianus*, in the Salvin-Godman collection, from Ecuador, "which is so black as to suggest the possibility of its being a case of melanism". Should this remarkable bird prove to be indeed a melanism of either *B. virginianus* or *B. magellanicus*, the case will be a unique one in this family, so far as we know; and allowing the probability of this proving to be really its character, it is reasonable to suspect a similar exceptional case in the bird under consideration.

List of specimens in United States National Museum.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
67344			S. ♀ ad.		Ecuador .....	.....	G. B. Goode	
61942			M. ♀ juv.		"South America" .....	.....		

Other specimens examined.—Mus. O. Salvin, 8; G. N. Lawrence, 2; Philad. Acad., 6; total number examined, 18.

Measurements.

Museum No.	Museum.	Sex and age.	Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Collected by—
	O. S.	♂ ad.	Venezuela (Merida)	6.80	5.80	0.40	1.90	1.25	Goering.
	do	♂ ad.	Ecuador	6.75	6.00	0.40	1.90	.....	Higgins.
	do	♂ ad.	New Granada	6.80	6.00	0.45	.....	.....	(Verreaux.)
	do	♂ ad.	New Granada (interior) ..	6.95	5.70	0.40	2.00	1.25	Trübner.
	do	♂ juv.	Ecuador (near Quito)	6.60	6.00	0.40	1.95	1.30	Higgins.
	do	♂ ad.	New Granada (interior) ..	8.00	7.00	0.50	.....	1.40	Trübner.
67344	U. S.	♂ ad.	Ecuador	7.80	7.00	0.50	2.15	1.45	
61942	do	♂ juv.	"South America"	7.80	6.80	0.50	2.20	1.50	
	O. S.	♂ juv.	Colombia (Antioquia) ...	7.75	6.90	0.55	2.15	1.50	T. K. Salmon.
	do	♂ juv.	do	6.80	6.20	0.42	2.10	1.30	Do.

NISUS SALVINI.

Nisus salvini, RIDGW. sp. nov.

Wing, 7.60–7.80; tail, 6.90–7.00; culmen, 0.50; tarsus, 2.15–2.20; middle toe, 1.45–1.50. Fourth and fifth quills longest; first shortest; outer five with inner webs emarginated. Tail nearly even or very slightly rounded (♀).

Adult (female?).—Above, including the auriculars, uniform plumbeous, the scapulars and upper tail-coverts with concealed white spots; tail black, narrowly tipped with pale gray, and crossed by four narrow bands of light brownish-gray. Tibiæ uniform cinnamon-rufous; rest of lower parts white; the feathers with dark-brown shafts, except on the crissum. Wing, 7.60; tail, 6.90. (Coll. O. Salvin.)

Young (female?).—Above, dark sepia; the feathers with distinct terminal borders of rusty. Tail narrowly tipped with white, and crossed

* Catalogue of the Striges, or Nocturnal Birds of Prey, in the Collection of the British Museum. By R. Bowdler Sharpe. London: 1875.

by six bands of dull black, wider than the brownish-gray interspaces. Lower parts as in the adult, but feathers of the breast and sides marked with narrow stripes of dilute brown. Wing, 7.80; tail, 7.00. (Merida, Venezuela, 1873. A. Gøring; coll. O. Salvin.)

At first sight, this new species appears very similar to *N. chionogaster*, especially in the whiteness of the lower parts. A close examination reveals so many important points of difference, however, entirely outside the range of variation in that species, that it seems clearly distinct. Indeed, we consider it more closely related to *N. ventralis*, with which it closely agrees in the color of the tibiae, the narrowness of the light bands on the tail, and in the general aspect of the upper parts. The chief differences from *N. chionogaster* consist in the deep rufous instead of ochraceous tibiae, dusky instead of white auriculars, and much narrower gray bands on the tail, in which respects it agrees with *N. ventralis*; while from the latter it differs in the pure white lower parts of both old and young.

?NISUS NIGROPLUMBEUS.

Accipiter nigro-plumbeus LAW. Ann. N. Y. Lyc. 1869, 270 (Quito Valley, Ecuador).—ORTON, Am. Nat. iv, Feb. 1871, 711.

SP. CH.—*Adult male*:—Wing, 6.75; tail, 6.30; culmen, 0.45; tarsus, 1.95; middle toe, 1.30. Fourth quill longest; fifth scarcely shorter; first shortest; outer five with inner webs sinuated. Tail very slightly rounded, almost even. Prevailing color uniform dark plumbeous, the lower surface somewhat more glaucous and mixed on the abdomen, anal region, and crissum with ferrugineous-rufous; this continuous on the middle of the abdomen and in cloudings on the center of the feathers, and paler in tint on the crissum. Tail narrowly tipped with white and crossed by four bands of black, rather broader than the plumbeous ones, which incline to a slaty-brownish tint. Longer scapulars and tertials showing concealed large roundish spots of pure white; occipital feathers snowy-white beneath the surface; upper tail-coverts with concealed bands of ashy, growing white at the base of the feathers. Lining of the wing about equally clouded with light cinnamon and bluish-plumbeous; inner webs of primaries pure white for basal half and hoary slate for terminal half, the white portion crossed by broad bands of blackish slate, which become gradually obsolete in the slaty portion. Tarsal scutellæ fused into a continuous plate. "Iris orange-yellow; tarsi and toes yellow."

Hab.—"Eastern side of Quito Valley, on slope of Antisóna, altitude 10,000 to 12,000 feet."

The general appearance of this bird strongly suggests the possibility of its being a melanism of *N. ventralis*. The markings of the tail are the same, and the picturæ of the under surface of the wing is similar, only darker. The color of the upper parts in their entirety differs solely in being of a darker shade; while in the size, and in the details of structure, it corresponds exactly with the male of *ventralis*.

NISUS CHIONOGASTER.

Nisus chionogaster KAUP, P. Z. S. 1851, 41 (Guatemala).

Accipiter chionogaster BONAP. Rev. et Mag. Zool. 1854, 53c.—SCL. & SALV. Ex. Orn. ii, 1867, 27, pl. xiv; xi, 170; Nom. Neotr. 1873, 120.—GRAY, Hand List, i, 1869, 32.—SHARPE, Cat. Acc. B. M. 1874, 148.

Accipiter erythrocnemius SCL. & SALV. Ibis, 1859, 218.—SALV. Ibis, 1861, 140.

Hab.—Guatemala.

Wing, 6.80–8.40; tail, 6.00–7.30; culmen, 0.40–0.52; tarsus, 1.90–2.25;

middle toe, 1.30–1.55. Five outer primaries with inner webs emarginated; fourth and fifth quills longest; third next; first shortest. Tail even or very slightly rounded. Lower parts mostly white, without transverse bars, the tibiae pale ochraceous.

Adult male (specimen in Coll. O. Salvin, from Trinidad or Venezuela):—Above, blackish plumbeous, the pileum darkest; longer upper tail-coverts very narrowly tipped with white. Tail light brownish-slate, narrowly tipped with white, and crossed by four broad bands of dull black. These bands, except the subterminal one, rather narrower than the interspaces. Lower parts pure white; the feathers of the throat, cheeks, and breast with fine shaft-streaks of black; tibiae plain pale reddish-ochraceous and lining of wing tinged with the same. Inner webs of primaries white, gradually becoming slate-color terminally, and marked with distinct transverse spots of darker slate, these spots or bars being six in number (counting the distinct ones) on the fourth quill. Loes whitish, with black shafts to the feathers; suborbital region and upper and posterior border of the auriculars plumbeous-black. Occipital feathers pure white beneath surface; scapulars with large concealed spots of white. Wing, 6.80; tail, 6.00; culmen, 0.40; tarsus, 1.90; middle toe, 1.25.

Adult female:—Above slate-color, with a brownish cast; tail light-brownish slate (sometimes with a narrow white tip), crossed by four or five broad bands of dull black. Lower parts as in the male. Wing, 7.85–8.40; tail, 6.60–7.30; culmen, 0.50–0.52; tarsus, 2.10–2.25; middle toe, 1.50–1.55.

Young (both sexes):—Above, dark slate-brown (the pileum nearly black), each feather indistinctly bordered terminally with pale fulvous. Tail light grayish-brown, crossed by four broad bands of dull black. Lower parts as in the adult, but feathers of the breast and sides with faint longitudinal stripes of dilute brown, these wider and more rufous on the sides.

Among the adult females before us, four in number, there is but slight variation to be noticed, three of them being quite alike, while the remaining one, a specimen from San Geronimó, Vera Paz, Guatemala (No. 2272, Mus. Salv. and Godm.), differs in having the lower parts quite extensively tinged with ochraceous, especially on the breast and sides, while the anterior portions are destitute of the usual dusky shaft-streaks.

List and measurements of specimens examined.

Locality.	Sex and age.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Remarks.
a. "Trinidad or Venezuela" [?]	♂ ad.	6.80	6.00	0.40	1.90	1.35	August 22, 1873.
b. Guatemala (Medio Monte) . . .	♂ juv.	7.00	6.10	0.42	2.00	1.30	
c. Guatemala (Vera Paz)	♀ ad.	8.20	7.00	0.50	2.20	1.50	Languin; Mar., 1860; No. 2271.
d. Guatemala (Savana Grande) . . .	♀ ad.	8.15	6.80	0.52	2.15	1.50	Pacific side; No. 2273.
e. Guatemala (Vera Paz)	♀ ad.	8.00	6.50	0.52	2.10	.....	San Geronimo; July, 1862; No. 2272.
f. Guatemala (Vera Paz)	♀ ad.	7.85	6.90	0.50	2.20	1.55	Choctun; Jan., 1860; No. 2275.
g. Guatemala (Volcane Fuego) . . .	♀ juv.	8.40	7.30	0.50	2.25	1.50	Aug., 1873; altitude, 8,000 feet.

SUBGENUS *HIERASPIZIAS*, KAUP?

Hieraspiza KAUP, Class. Säug. u. Vög. 1844, 116. Type, *Falco tinus* LINN.?

"*Jeraspiza* KAUP, 1851" (*vide* Gray).

Teraspiza KAUP, Proc. Zool. Soc. Lond. 1867, 171. Same type?

CHARACTERS.—Four outer primaries with inner webs emarginated; third or fourth quill longest. End of inner toe reaching to or beyond middle of second joint of middle toe.

In the last paper cited above, Kaup includes in his genus "*Teraspiza*" a single American species, *Falco tinus* Linn., and two Old World species, *Falco virgatus* Temm. and *Accipiter rhodogaster* Gurney (*ex* Schlegel). The first of these is probably the type, or, at least, was considered typical, since it was the one selected for illustration of the generic characters. This is the only species of those named at present before us, so we cannot state positively whether the other two are sufficiently similar in the details of form to be properly included in the same subgenus. This is also the case with *Accipiter collaris* Selater; for, although we have examined a specimen in the museum of the Philadelphia Academy, we are not prepared to say that it is strictly congeneric with *A. tinus*, although according to our recollection it is extremely similar in the details of form and in relative proportions. Regarding these species, Mr. Gurney (*Ibis*, 1875, pp. 470–472) speaks as follows:—" *A. collaris* is remarkable in the robust character of its tarsi and feet, and is perhaps not properly referable to any of the subgeneric forms into which the genus *Accipiter*, as used by Mr. Sharpe, may be considered to be divisible, being, in fact, very much *sui generis*. Notwithstanding the great resemblance in the character of the coloration which exists between *A. collaris* and *A. tinus* in their first dress, and, to a certain extent, in their adult plumage also, I am disposed to assign *A. tinus* to a group distinct from *A. collaris*; and in this group I would also include three small African hawks, *A. hartlaubi*, *A. minullus*, and *A. erythropus*. The late Dr. Kaup associated *A. tinus* and *A. minullus* in a distinct subgenus, first under the title *Hieraspiza* and subsequently under that of *Teraspiza*, with *A. virgatus* and *A. rhodogaster*; but I am disposed to consider that the two latter species belong rather to the group of which *A. nisus* is the type, though they are in some respects aberrant members of it." Pending the decision of this question, we include the *N. collaris* provisionally in the subgenus *Hieraspizias*, along with *N. tinus*.

The two American species agree in the following—

COMMON CHARACTERS.—Above plain plumbeous (*adult*), sepia-brown or rusty-rufous (*young*), the pileum abruptly darker. Tail plumbeous, crossed with four to five bands of blackish, about equal in width to the interspaces (*adult*) or brown or bright rufous with six to seven narrow bands of dusky (*young*). Beneath white, with very regular bars of plumbeous (*adult*), or ochraceous, with similar bars of brown or rusty (*young*). They may be distinguished by the following diagnoses:—

1. *H. TINUS*.—Wing, 5.20–6.50; tail, 3.90–5.50; culmen, 0.45–0.55; tarsus, 1.40–1.90; middle toe, 1.00–1.35. No whitish or ochraceous nuchal collar. *Hab.*—Brazil to Guatemala.

2. *H. COLLARIS*.—Wing, 6.75–7.00; tail, 5.00–5.50; culmen, 0.55; tarsus, 1.75–2.00; middle toe, 1.28. A nuchal collar of white or ochraceous the feathers dusky-tipped. *Hab.*—New Granada.

NISUS (? HIERASPIZIAS) SUPERCILIOSUS?

- ? ? *Falco superciliosus* LINN. S. N. i, 1766, 128 (Surinam), (= *jur.*, transition-plumage?).—GMEL. S. N. i, 1788, 282.—LATH. Ind. Orn. i, 1790, 45; Gen. Hist. i, 1821, 294.
Accipiter superciliosus STRICKL. Orn. Syn. i, 1855, 115.
 ??? *Falco tinus* LATH. Ind. Orn. i, 1790, 50; Gen. Hist. i, 1821, 295 (Cayenne).—DAUD. Tr. Orn. ii, 1800, 146.—SHAW, Zool. vii, 1812, 209.
Accipiter tinus, GRAY, List Acc. Br. Mus. 1848, 72; Gen. B. 1849, 29, pl. 10 (adult); Hand List, i, 1869, 33.—SALVIN, P. Z. S. 1867, 158 (remarks on coloration).—BONAP. Consp. i, 1850, 32.—PELZ. Orn. Bras. 1871, 8, 399.—SCL. & SALV. Nom. Neotr. 1873, 120.—SHARPE, Cat. Acc. Br. Mus. 1874, 139.
Hieraspidia tinus KAUP, Contr. Orn. 1850, 63.
Ieraspiza tinus BONAP. Rev. et Mag. Zool. 1854, 538.
Nisus tinus BURM. Th. Bras. ii, 1855, 70.—SCL. Mus. P.-B. Astures, 1862, 33; Rev. Acc. 1873, 77.—RIDGW. Pr. Boston Soc. May, N. H. 1873, 59.
Teraspiza tinus KAUP, P. Z. S. 1867, 171.
Sparvius subuiger VIEILL. Nouv. Dict. 1817, 319.—PUCHERAN, Rev. Zool. 1850, 92.
Sparvius minutus VIEILL. N. D. x, 1817, 328, Enc. Méth. iii, 1823, 1267.—PUCHER. R. Z. 1850, 93.
Nisus malfini LESS. Tr. 1831, 58.—PUCHER. R. Z. 1850, 209.
Ieraspiza fontanieri BONAP. Rev. et Mag. de Zool. 1854, 538.

Hab.—Brazil to Guatemala.

Wing, 5.20–6.50; tail, 3.90–5.50; culmen, 0.45–0.55; tarsus, 1.40–1.90; middle toe, 1.00–1.35. Third or fourth quill longest; first shortest; inner web of outer four distinctly emarginated. Lower parts, except throat (and sometimes the anal region), with distinct transverse bars of rufous, brown, or plumbeous, on an ochraceous or white ground.

Adult.—Above dusky, the pileum nearly black, and the back with a decided plumbeous cast. Tail with four to five bands of blackish and plumbeous or brownish-slate (the two colors in nearly equal proportion,) and sometimes with a narrow terminal margin of white. Ear-coverts and sides of nape plumbeous, the former usually somewhat broken by a faint, whitish, indistinct barring. Lower parts white, the entire surface covered with numerous, regular, transverse bars of light slate or plumbeous, these bars usually wider on the sides than along the median portion, widest apart on the crissum, and most numerous and dense on the tibiæ; axillars and lining of the wing similarly barred. Inner webs of primaries with transverse spots of dusky slate from base to end. Gular region white, without bars.

Young.—*Brown phase* :—Above, sepia-brown, the pileum nearly black; the feathers with or without rusty borders. Tail lighter, and crossed by six to seven bands of dusky black. Lower parts white or pale ochraceous, barred as in the adult, but with rusty-brown or umber, instead of slate or plumbeous. *Rufous phase* :—Above, bright rusty-rufous, brightest on the tail, more dusky on the pileum. Tail with six to seven narrow bands of black, these sometimes not reaching from the shaft to the edge of the feathers. Lower parts pale ochraceous or rufescent white (the tibia quite rusty), barred as in other stages, but with deep rufous or rusty-brown.

That the rufous plumage of this species is not a progressive stage, but a mere individual phase, is proven by the examination of individuals in the transition-state. One of this character in Mr. Salvin's collection, from Veragua, originally an extreme example of the rufescent phase, was moulting directly into the adult plumage described above, as numerous new feathers in all parts of its plumage plainly show. Another, in the same collection, from Bahia, is an adult in somewhat worn plumage, still retaining a few bright-rufous feathers among the axillars. On the other hand, specimens which are in the sepia-brown plumage, usually regarded as an intermediate stage between the rufous

and plumbeous plumages, show rusty borders to the feathers of the upper parts, while besides the texture of their plumage leaves no doubt that they are very young birds in their first dress.

Both adult and young exhibit the usual individual variation; the former varying in the greater or less bluish cast to the back and the bars underneath, the degree of blackness in the color of the pileum, and the former exhibiting tints variously intermediate between the rufous and brown phases. There appears to be no well-marked sexual difference in plumage at any age, though the adult males seem to be rather more plumbeous than the females.

The proper specific name for this species is involved in considerable doubt. Strickland is, we believe, the only one who has identified it with the *Falco superciliosus* of Linnæus; other authors having, for some reason, we know not what, discarded this name, and taken that of *Falco tinus* Latham, as the first designation of the species. So far as the original descriptions are concerned, both of those quoted are extremely inaccurate, and disagree in very important respects with the characters of the bird under consideration; but if there is no other clue to what species were meant by these authors than their diagnoses, Latham's description is much more inapplicable than that of Linnæus. It is as follows, the points of disagreement being italicized:—

“*F. pedibus flavis, corpore cinereo-fusco, subtus albido fasciis nigricantibus, vertice albido.* Tiny Falcon, Lath. Synop. sup. p. 39. Habitat in Cayana; inter minimos numerandus; ab apice rostri ad basin caudæ uncias sex tantum impleus.”

This is at best a very poor diagnosis of the species under consideration; since, if this were the bird described, it is difficult to see why a bird which invariably has a uniform black or dusky vertex should have this portion described as white!

Linnæus describes his *F. superciliosus* as follows:—

“*F. cera pedibus palpebrisque luteis, corpore fusco albido undulato, remigibus ferrugineis nigrofasciatus.* Habitat in Surinamo. Dahlberg. Magnitudo Picæ. Corpus supra fuscum, subtus totum etiam femoribus confertim nigro undulatum. Remiges ferruginæ fasciis nigris pluribus; sed secundariæ margine posteriore albido. Cauda nigra fasciis duabus latis & apice cinereis. Crissum album, strigis aliquot nigris. *Uropygium albo nigroque varium.* Supercilia subtus nuda, prominula. Lora setis nigris patentibus. Rostrum & ungues nigri. Tectrices alarum inferiores albæ lineolis tenuissimis nigris.”

This description is, in the main, a sufficiently accurate diagnosis of the present species in the transition-stage, or in moulting from the ferruginous plumage, which sometimes characterizes the young, into the adult plumbeous stage, remnants of the first dress being the ferruginous remiges, as described. But the clause “rump varied with black and white” is manifestly not a character of the present species, in which this part is uniform slaty, with, however, an indistinct white spotting beneath the surface, to be seen only upon disturbing the feathers. But this discrepancy is trifling compared with that in Latham's description of his *Falco tinus*, and, unless there is a better reason than we know of, we cannot see why Linnæus' name *superciliosus* should not be preferred.

In case both these names be rejected on account of the reasons stated, *Sparvius subniger* Vieillot would be unobjectionable, since the type has been fully identified with this species by Pucheran.

Measurements.

Museum.	Sex and age.	Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Collected by—
R. R.	♂ ? ad..	Demerara.....	5.70	4.50	0.45	1.60	1.10	
O. S.	♀ ? ad..	Bahia.....	6.30	4.90	0.50	1.90	1.30	Wucherer.
Do.	♂ ? ad..	do.....	5.50	4.10	0.45	1.55	.....	Do.
Do.	♂ ? ad..	Venezuela (San Estaban).....	6.50	4.80	0.50	1.80	1.30	Göering.
Do.	juv.	New Granada.....	5.40	4.20	0.45	1.50	1.10	(Verreaux.)
Do.	juv.	Veragua (Santiago).....	6.10	4.90	0.50	1.80	1.25	E. Arce.
Do.	juv.	Rio Janeiro.....	6.10	5.30	0.50	1.90	1.35	
Do.	juv.	do.....	6.35	5.50	0.52	1.85	1.35	

List of specimens examined.—In Mus. O. Salvin, 7; G. N. Lawrence, 2 (*Panama*); Philad. Acad., 3 (*Cayenne*); Boston Soc., 2 (*Brazil, Venezuela, Cayenne*); American Mus., New York, 3; R. Ridgway, 1 (*Demerara*); total, 18.

NISUS (?HIERASPIZIAS) COLLARIS.

Micronisus collaris KAUP, MS. in Mus. Brit., undè—

Accipiter collaris SCL. Ibis, ii, 1860, 148, pl. vi (adult and young).—LAWRENCE, ANN.

Lyc. N. Y. 1862, 8 (*New Granada*).—GRAY, Hand List, i, 1869, 33.—SCL. & SALV.

Nom. Neotr. 1873, 120.—SHARPE, Cat. Acc. B. M. 1874, 144.—SALV. Ibis, iv, 1874, 321.

Nisus collaris GIEBEL, Thes. Orn. 1872, 263.

Hab.—New Granada.

SP. CH.—Wing, 6.75–7.00; tail, 5.00–5.50; culmen, 0.55; tarsus, 1.75–2.00; middle toe, 1.28. Fourth quill longest; first shortest; outer four with inner webs sinuated. Tail even. *Adult*(?):—Above dark vandyke-brown, becoming blackish on the pileum; a nuchal collar of white, with the tips of the feathers dusky. Tail brownish-slate, crossed by five bands of black, about equal in width to the slaty bands. Lower parts white, marked everywhere, except on throat, with very regular, sharply-defined broad bars of vandyke-brown, averaging nearly or quite as wide as the white interspaces. *Young*:—The dark brown of the adult (?) replaced by ferruginous, this brightest on the tail, which has six instead of five black bands. Lower parts “cinnamomeous-white”, the tibiae more rusty, the sides barred, as in the adult. (*Fide* Selater, Ibis, 1860, p. 149.)

We are not satisfied as to whether the above description of the supposed adult is really the mature stage or the brown phase of the young. Our description is taken from the specimen in the museum of the Philadelphia Academy of Natural Sciences, which came from Bogota.

APPENDIX.

Regarding *Falco poliogaster* Temminck and *Astur pectoralis* Bonaparte, mentioned on page 91, we have, as yet, seen no specimens. We strongly incline to the belief that they will be found different from the true *Nisi*, and each sufficiently peculiar in details of form to constitute a subgenus by itself.

Regarding *F. poliogaster*, Mr. Garney writes us that it is more like *Leucopternis* in its generic characters than typical *Nisus*; and we regard the remarkable coloration of *A. pectoralis* is a sufficient cause for suspecting the impropriety of referring the latter species to either section of the genus *Nisus* as defined in our monograph. (See Selater, Ibis, 1861, pp. 313–314, pl. x).

The synonymy and specific characters of these two aberrant species are as follows:—

NISUS (?) POLIOGASTER.

Falco poliogaster TEMM. Pl. Col. i, 1824, pl. 264 (ex Natterer M. S.).

Astur poliogaster VIG. Zoöl. Journ. i, 1824, 338.—STEPH. Zoöl. xiii, pt. 2, 1826, 29.—LESS. Man. i, 1831, 93.—CUV. Règ. An. ed. 2, i, 1829, 332.—GRAY, Gen. B. i, 1849, 27.—STRICKL. Orn. Syn. i, 1855, 121.—SHARPE, Cat. Acc. B. M. 1874, 120.

Nisus poliogaster LESS. Tr. 1831, 62.—SCHL. Mus. P.-B. Astures, 1862, 43; Rev. Acc. 1873, 96.

Asturina poliogastra KAUP, Isis, 1847, 198; Contr. Orn. 1850, 67.—BONAP. Consp. i, 1850, 30.

Cooperastur poliogaster BONAP. Rev. et Mag. Zool. 1854, 538.

Accipiter poliogaster GRAY, Hand List, i, 1869, 33.—PELZ. Orn. Bras. 1871, 8.

Hab.—Brazil.

“*Adult male* (type of species): Above dark leaden grey, the ear-coverts and sides of the neck uniform with the crown, which is slightly darker than the back, as also are the wing-coverts; upper tail-coverts tipped with clear ashy-grey; quills brown, with rufous brown shafts, the secondaries leaden grey like the back; the quills barred with darker brown, these bars showing more plainly underneath, where the lower surface of the wing is ashy white, inclining to pure white near the base of inner web; tail black, tipped with whitish and crossed with three narrow bars of clear ashy grey, a little rufescent near the shafts; entire under surface, including the under tail-currents, pale grey, the throat and under wing-coverts whiter, the shafts darker, showing a hair-like stripe. Total length 17 inches, culmen 0.85, wing 9.8, tail 7.8, tarsus 2.15, middle toe 1.4. (*Mus. Lugd.*)”—(SHARPE, *l. c.*)

Regarding this very rare species, of which we have seen no examples, Mr. Gurney writes me as follows:—“This species, which Schlegel calls a ‘*Nisus*,’ and Gray a ‘*Cooperastur*’, seemed to me, when I examined it at Leyden in 1869, to be a *Leucopternis*. At first sight its appearance is a good deal like *Micrastur mirandollei*,* but from that species it is evidently generically distinct. The type-specimen at Leyden is the only one I have seen. The bird figured by Temminck as the young of this species is said by Schlegel to be the young of *Cooperastur pileatus*.” (*Vide Mus. Pays-Bas, Astures, p. 43.*)†

NISUS (?) PECTORALIS.

Astur pectoralis BONAP. Rev. et Mag. Zool. 1850, 490.—SCHL. Mus. P.-B. Astures, 1862, 18.—PELZ. Orn. Bras. 1871, 6, 398; Rev. Acc. 1873, 63.—SHARPE, Cat. Acc. B. M. 1874, 121.

Cooperastur pectoralis BONAP. Rev. et Mag. Zool. 1854, 538.

Accipiter pectoralis SCH. Ibis, iii, 1861, 313, pl. x; Ibis, iv, 1862, 194.—GRAY, Hand List, i, 1869, 33.—SCH. & SALV. Ex. Orn. xi, 1869, 170; Nom. Neotr. 1873, 120.—SALVIN, Ibis, 1874, 321 (Specimen in Mus. Philad. Acad).

Hab.—Brazil (Ypenema and Borba; NATTERER).

“*Female, not quite adult.*—Above brown, with tips of rather paler brown to the feathers of the middle back, scapulars, and secondaries; the greater part of the wing-coverts, the interscapular region, and the lower back, rump, and upper tail-coverts black, with white tips; crown of head crested, pure black; ear-coverts and sides of neck rich rufous, forming a broad collar round the back of the latter; feathers below the eye and a faintly-indicated moustachial streak black; throat white, a

* This resemblance is so very close that we have seen specimens of the *Micrastur* labeled “*M. poliogaster* Temm.”

† Notwithstanding Professor Schlegel’s conclusion, we judge from Temminck’s plate that the bird figured is really the young of *N. poliogaster*, since it agrees with this species in its stout form, and presents conspicuous points of difference both in form and coloration from the young of *N. pileatus*.

central streak and a few feathers on the lower part black; fore neck and chest rufous, like the hind neck, the center varied with black and white; rest of under surface white, with very broad and distinct bars of jet-black on the flanks and thighs, smaller and less distinct in the center of the body; under wing-coverts and axillaries white like the breast, and similarly barred with black; quills brown, barred above with darker brown, the under surface ashy white, with a few greyish-black cross-bars; tail ashy brown, with four broad black bars, equally distinct on the under surface, which is ashy white; bill horn-brown, yellowish at base; feet yellow. Total length 19 inches, culmen 1.3, wing 11, tail, 8.5, tarsus 2.4. (*Mus. Lugd.*)"—(SHARPE, *l. c.*)

According to Selater (*Ibis* iv, 1862, p. 194), the iris is dirty gamboge-yellow; ring round eye and lores dark yellow, verging toward olive-green; superciliary shield olive-green; cere grayish-green; bill grayish-blue and black; tarsi and toes dirty gamboge-yellow; claws black. (*Fide* PELZELN.)

Mr. Gurney gives some very interesting notes on this species in the *Ibis*, vol. v, 1875, pp. 356-7, which we reproduce here:—"As the Leyden specimen, of which the measurements are given by Mr. Sharpe, and that at Antwerp, of which the dimensions were recorded by Dr. Selater in 'The Ibis' for 1861, appear by their size to be both female birds, I add the following particulars of the supposed male which is preserved in Norwich:—wing from carpal joint 9.1 inches; tarsus 2.1; middle toe, s. u. 1.3; culmen from anterior margin of cere 5. It will be seen by these measurements of the culmen and middle toe, that, according to the rule given by Mr. Sharpe at p. 47 of his 'Catalogue,' this species comes rather under his genus *Accipiter* than under that of *Astur*; its natural position appears to me to be intermediate between the Asturine subgenus *Lophospizias* and the Accipitrine subgenus *Cooperastur*, to which it was referred (and, on the whole, I think rightly) by Bonaparte in the *Rev. et Mag. de Zool.* for 1854, p. 538."

GENUS GERANOÆTUS, KAUP

Geranoætus KAUP, Class. Säug. Vög. 1844, 122. Type, *Spizaëtus melanoleucus* VIEILL.
Geranoætus AGASS.

Heteroætus KAUP, 1845.—Contr. Orn. 1850, 74.—SUND. Disp. Acc. Hemeroharp. 1874, 27.
Heteraëtus KAUP, Isis, 1847 (*vide* Sundevall).—REICHENB. 1850.

CH.—Form intermediate between that of *Buteo* and *Haliaëtus*. Wings very long, the primaries rigid, and tail very short and graduated. Bill much as in *Haliaëtus*, the culmen being arched above the horizontal, but slightly convex, upper outline of the cere, the superior tomium doubly sinuated, and the tip well produced and sharp. Nostril obliquely horizontal. Feet typically buteonine; tarsus, about one and a fourth times the middle toe; outer toe much longer than the inner; posterior toe much shorter than the inner. Tarsus with the anterior and posterior series of transverse scutellæ very continuous and perfect; web between the outer and middle toes well developed. Wing large and pointed; third or fourth quill longest; first shorter than seventh; outer five with their inner webs deeply emarginated. Tail less than half the wing, graduated, the feathers very rigid. Feathers of the head and neck cuneate, approaching lanceolate; tibial plumes well developed; secondaries, 17.

Somewhat intermediate between *Buteo* and *Haliaëtus*, this genus is nevertheless very distinct from either. It is, perhaps, most like the latter, with which it agrees in short, graduated tail, with rigid feathers, deep emargination of the five outer primaries, general form of the bill, and lanceolate form of the feathers of the head and neck. The feet, however, are much more like those of *Buteo*, there being a well-developed web between the outer and middle toes, of which not a trace is seen in *Haliaëtus*, while the scutellation is also that of the typical *Buteones*.

But one species is at present known.

GERANOÆTUS MELANOLEUCUS.

Spizaëtus melanoleucus VIEILL. N. D. xxxii, 1819, 57.

Haliaëtus melanoleucus D'ORB. & LAFR. Syn. Av. 1838, 3.—D'ORB. Voy. Am. Mérid. Ois. 1847, 76.—BURM. Th. Bras. ii, 1855, 54.—GRAY, Hand List, i, 1869, 17.

Pontoætus melanoleucus GRAY, Gen. i, 1845, 18.

Cuncuma melanoleucus GRAY, List Acc. B. M. 1848, 25.

Geranoætus melanoleucus STRICKL. Orn. Syn. i, 1855, 55.—BURM. Reise La Plata St. ii, 1861, 425.—PELZ. Orn. Nov. 1865, 7 (Chile); Orn. Bras. 1871, 49, 397.—ORTON, Am. Nat. 1871, 624 (Quito Valley).—HUDSON, P. Z. S. 1872, 534 (Rio Negro, Patag.).—LEE, Ibis, 1873, 131, 136 (Arg. Rep.).—SCL. & SALV. Ibis, 1869, 284 (Cape Negro, Str. Magellan, Nov. 29); P. Z. S. 1869, 155 (Tungasuca, Peru); Nom. Neotr. 1873, 119.—RIGW. Pr. Boston Soc. N. H. May, 1873, 68.—SCL. & SALV. Nom. Neotr. 1873, 119.

Asturina melanoleuca SCHL. Mus. P.-B. Asturinae, 1862, 5; Rev. Acc. 1873, 102.

Buteo melanoleucus SHARPE, Cat. Acc. B. M. 1874, 168.

Spizaëtus fuscescens VIEILL. N. D. xxxii, 1819, 55.

Falco aquia TEMM. Pl. Col. i, 1824, pl. 302.

Haliaëtus aquia CUV. Règ. An. i, 1829, 327.—LESS. Tr. 1831, 42.

Geranoætus aquia KAUP, Contr. Orn. 1850, 74.—BONAP. Consp. i, 1850, 15.

Buteo aquia CABAN. & TSCHUDI, Arch. f. Naturg. 1844, 264; Fauna Per. 1844, 89.—SUND. Av. Tent. 1873, 107.

Heteroætus aquia KAUP, Contr. Orn. 1850, 74.

Aquila obscura y blanca AZARA, Pax. Par. i, 1802, 61.

Aquila parda AZARA, l. c. 65.

Hab.—Mountainous districts of Western and Southern South America, from Patagonia northward to New Granada and Southern Brazil.

Wing, 18.25–23.70 ; tail, 8.70–13.00 ; culmen, 1.20–1.60 ; tarsus, 3.25–4.30 ; middle toe, 2.40–3.30. *Adult*:—General color deep black, the lower parts posterior to the breast (including lining of the wing) pure white, and the lesser and middle wing-coverts ash-gray; the white and ashy portions narrowly and closely barred with dusky slate or blackish; chin, throat, and cheeks pale grayish with black shaft-streaks; feathers of the neck and breast, also the upper tail-coverts and the rectrices, sometimes minutely tipped with white or grayish. *Young*:—Above chiefly black, the wing-coverts barred with grayish and ochraceous-white (in older specimens), or irregularly mottled with black and ochraceous (in younger individuals). Head streaked with black and ochraceous-white, lower parts mixed black and ochraceous, the relative amount of the two colors, and the depth of the ochraceous tint varying with the individual, but the ochraceous usually predominating posteriorly, the former being mostly in large suffused spots, chiefly on the breast and sides. Tibiæ usually immaculate, but sometimes narrowly barred with blackish.

Mr. Sharpe describes the tail of the “young male” as “ashy gray, mottled with black, more distinctly toward the apex, which is entirely black”; but we have seen no specimens in which the tail is not entirely black, even to the extreme base, except a narrow grayish terminal margin, present in most specimens. A young specimen from Brazil (No. 50,929, Sr. Don Fred. Albuquerque) is nearly uniform black beneath as far back as the tibiæ and crissum, which are deep yellowish ochraceous, with irregular black bars on the former, and zigzag spots of the same on the latter. In this specimen, the wing-coverts are pale gray, nearly white anteriorly, everywhere barred with dusky, with but little admixture of ochraceous; the pileum and nape are also nearly uniform black, nearly all the white or ochraceous being beneath the surface.

An adult from Bogota (No. 66,323) differs from Chilian examples of the same stage in having a glaucous or chalky cast to the black portions of the plumage, especially on the head, neck, back, and jugulum ; the slaty bars of the abdomen, etc., are also narrower and fainter, those of the crissum being much broader and darker than elsewhere.

The tail and upper coverts are more often tipped with grayish than with white.

In an adult specimen, the bill was “black at the tip, yellowish-green at the base; eye light hazel; legs and toes chrome-yellow; claws black. Total length, 18½ inches.”—(Sci. & Salv. P. Z. S. 1869, p. 155.)

List of specimens in United States National Museum.

Catalogue No.	Original No.	Condition of specimen.	Sex and age.	Locality.	Date.	From whom received.
13832	.....	M.	♀ ad.	Chili.....	.....	Lieutenant Gilliss.
13909	.....	M.	♂ ad.	do .....	.....	Do.
48816	11	S.	♀ ad.	do	May —, 1863	National Museum, Chile.
48817	11	S.	— ad.	Chili (Santiago)	July —, 1864	Do.
50929	.....	S.	— juv.	Brazil .....	.....	Señor Don F. Albuquerque.
50932	.....	S.	— juv.	do .....	.....	Do.
66323	.....	S.	— ad.	Bogota, New Granada.....	.....	Mr. Hurlbart.

Other specimens examined.—Mus. Boston Soc. N. H., 6; Philad. Acad. N. S., 11; Am. Mus., N. Y., 4; G. N. Lawrence, 1: total, 29.

The sexes compare in measurements as follows:—

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. specimens.
♂♂	18.25-18.50	8.70- 9.50	1.25-1.40	3.80-4.10	2.15	3
	19.75-23.00	9.50-13.50	1.20-1.25	4.00-4.30	2.40-2.60	5

GENUS ONYCHOTES, RIDGWAY.

Onychotes, RIDGWAY, Pr. Acad. Nat. Sci. Philad. Dec. 1870, 142; type, *O. gruberi*, nov. sp.—RIDGW. B. B. & R. Hist. N. Am. Birds, iii, 1874, 252 (outlines of generic characters).

CHARACTERS.—General form and size most similar to that of species of *Rupornis* and *Asturina*. Bill very short, the tip unusually obtuse; cere very large and broad on top, its length almost equal to the chord of the culmen, and its greatest breadth equal to its length. Superior tomium slightly lobed; gonys slightly convex. Nostril nearly circular, or properly semi-circular or broadly ovate, its upper outline being less curved than the lower, more horizontal, its direction nearly parallel with the commissure of the bill; a cartilaginous tubercle is seen within the nostril in its upper portion. Outstretched feet reaching to or beyond end of the tail; tarsus long and slender, nearly twice the length of the middle toe; outer toe decidedly longer than the inner, which reaches the second phalangeal articulation of the middle toe; hind toe shorter than the inner. Scutellation of the tarsi and toes as in the typical *Buteones*, there being a continuous single series of transverse plates on the posterior face of the former; those on the anterior face number 11–12. Claws proportionally large, those of the first and second toes considerably exceeding their digits in length; they are much graduated in size to the outer, which is only half the length of the posterior one; their shape is normally buteonine. A well-developed web between outer and middle toes. Wing short and much rounded, reaching to about the middle of the tail, which is slightly rounded, and more than half as long as the wing. Remiges, 24; rectrices, 12. Third, fourth, and fifth quills longest, and nearly equal; first shortest; second about equal to sixth; outer five with inner webs emarginated. Plumage generally dense and rather compact; tibial plumes short, reaching but little below the joint; upper third of the tarsus densely feathered in front and on sides. Lores quite densely covered with strong black bristles, these extending forward so as to cover the entire cere beneath the nostrils. Superciliary shield bare and prominent.

This buteonine form has no very near relative among the American *Falconidae*, nor, indeed, among those of the Old World; and the several striking peculiarities of detail in its external structure, besides the existing uncertainty regarding its precise habitat, and the unknown history of the only two specimens known to exist in collections, render this bird one of extreme interest. The general aspect of this peculiar hawk is that of the smaller short-winged *Buteones* of tropical America: it agreeing very nearly in size with "*Buteola*" *minuta* and *B. brachyura*. The fuliginous plumage resembles also that of several species of the genus *Buteo*, so much so, in fact, that the original specimen was labeled "*Buteo fuliginosus* Selater"; while in the normal, or lighter phase, there is a somewhat close resemblance to the plumage of the latter of the two species above mentioned. There are very many striking peculiarities of external structure, however, which mark it as one of the most strongly-characterized genera in the group to which it belongs, notably the densely-bristled lores and lower jaw, the broad, high cere, short, obtuse bill, and very long claws. In the latter feature, there is a close approach to the genus *Rostrhamus*, in which, however, the feet are much weaker, and the tarsus conspicuously shorter, while otherwise the bird is extremely different.

But one species is as yet known, and of this only two specimens, both of unknown history, exist in museums. The two specimens in question form part of the collection of the United States National Museum, and are supposed to have come from California.

ONYCHOTES GRUBERI.

Onychotes gruberi, RIDGWAY, Pr. Ac. Nat. Sci. Phila. Dec. 1870, 149 (description of fuliginous phase); B. B. & R. Hist. N. Am. Birds, iii, 1874, 254 (figure of fuliginous phase); Rod and Gun, vol. 6, No. 5, May 1, 1875, 65 (first description of white-breasted phase).

Onychotes gruberi, SHARPE, Cat. Acc. Brit. Mus. 1874, 158 (foot-note).

Hab.—California? (F. Gruber).

Wing, 10.10–11.50; tail, 6.50–7.30; culmen, about 0.80; tarsus, 2.70–2.80; middle toe, 1.45–1.60; posterior claw, 1.00; its digit, 0.80.

Adult.—Tail brownish-gray, the feathers with a hoary cast near the shaft, not paler at the tip, and crossed by a rather indefinite number (apparently from 9 to 11) of narrow and rather indistinct bars of dusky brown, these becoming gradually obsolete basally; the inner webs but little paler, becoming white only toward edges. *Light phase* (No. 62168, Nat. Mus.):—Above, chiefly dusky grayish-brown, beneath ochraceous white, deeper ochraceous on the middle of the breast and abdomen. Pileum and nape striped with blackish-brown and ochraceous-white, the former prevailing, the latter on the edges of the feathers; cheeks and sides of the neck with finer and fainter streaks; sides of the breast with narrow irregularly-lanceolate streaks of grayish-brown; sides with broader, ragged stripes, or longitudinal cloudings of the same, and tibial plumes with dusky shaft-streaks and faint grayish mottlings; longer lower tail-coverts with an irregular large spot of brownish-gray near the end. Lining of the wing deep creamy-buff, whiter along the outer edge, with a few scattered small spots of grayish-brown; under primary coverts pale grayish for the terminal portion, where marked with two or three narrow bars of darker. Inner webs of primaries entirely white to the emarginations, beyond which they are plain grayish, darker toward edges; no transverse bars are observable except on the inner quills. Axillars mostly white, irregularly spotted, and brokenly barred with brown, mixed with rusty, the brown predominating toward the end of the feathers. Upper parts slightly variegated, chiefly by whitish and dusky bars on the basal portion of the feathers; lesser wing-coverts faintly spotted with rusty; outer webs of secondaries and inner primaries with very indistinct darker bars. Wing, 11.50; tail, 7.30; tarsus, 2.80; middle toe, 1.60. *Fuliginous phase* (No. 41703, Nat. Mus.; *adult?*):—Everywhere dark grayish-brown, the feathers with darker shafts; feathers of the neck all round broadly edged with dull rusty; lining of the wing and tibial plumes dull cinnamon-rusty; flanks and crissum tinged with the same. Remiges as in the normal phase, but without trace of darker bars on outer webs, while those on the inner webs are more distinctly indicated. Tail as in the light phase. Wing, 10.10; tail, 6.50; culmen, about 0.80; tarsus, 2.70; middle toe, 1.45; posterior claw, 1.00; its digit, 0.80.

GENUS HERPETOTHERES, VIEILLOT.

"? *Physeta* VIEILLOT, 1816 (suppressed in 1818)." [Fide G. R. Gray.]

Herpetotheres VIEILL. Nouv. Dict. d'Hist. Nat. xviii, 1817, 317 (type *Falco cachinnans* Linn.).

Cachinna FLEM. Phil. Zoöl. ii, 1822, 236 (same type).

Macagua LESS. Traité d'Orn. 1831, 68 (same type).

Osteology.—Scapular process of the coracoid produced forward so as to meet the clavicle. Nasal bones almost completely ossified, leaving only a small circular nasal orifice with a firm bony rim and inclosed bony tubercle. Inferior surface of the supramaxillary with a median angular ridge. Superciliary process of the lachrymal greatly developed, consisting of a single broad piece extending nearly across the orbit. Posterior margin of the sternum truncated, entire, without foramina. General appearance and size of the skull exceedingly like that of *Falco communis*, but the supero-frontal width much greater, and the palatine surface correspondingly narrower; interorbital width of the frontal bone more than half the length of the skull from the base of the maxillary; width of the superciliary processes more than one-third their length; width of the conjoined palatines less than twice the width of the superciliary process, and less than half their own length; tomium of the supramaxillary without tooth or notch; nostril opening against the anterior edge of the cere, its bony rim much elevated on the posterior side. Mandible very broad and strong, with a large, longitudinal, oblong-ovate vacuity. Keel of the sternum about equal in length to the scapula, much longer than the coracoids and furcula; greatest width of the sternum about two-thirds its length.*

General external features.—Bill much compressed, very short and deep, its height through the base being about equal to the chord of the culmen, whose curve forms about one-third the circumference of a circle; gonys very convex, ascending abruptly terminally; superior tomium very slightly sinuated; end of the lower mandible divided frontally by an angular notch. Cere short, almost concealed by the rigid bristles of the lores and forehead. Nostril large, circular, against the anterior edge of the cere, its bony rim much elevated superiorly and posteriorly, and its bony tubercle not prominently exposed. Feet very robust; tarsus longer than the middle toe; lateral toes nearly equal, but the outer appreciably the longer; membrane between middle and outer toes well developed. Covering of tarsus and toes consisting of irregularly hexagonal, roughly imbricated, small scales, with no tendency to larger size on any part; terminal joint of the toes with three broad scutellæ. Claws normal, of moderate length and curve, the edges unusually sharp.

Pterylosis.—Distribution of the tracts much as in *Falco*, but with the dorsal stem of the spinal tract enlarged on all sides, undivided, and sparsely feathered. Lumbar tracts distinct, but short and separated from the crural tracts. Inferior tract narrow in all its parts, inner branch indistinct at the end of the gular portion; outer branch completely separated from the pectoral stem, somewhat broader than the narrow main stem itself, and distinct from it; ventral portion of the main stem removed far outward, running along the margin, and terminating laterally in front of the anus.—(NITZSCH.)

Plumage full and soft, except about the head; feathers of the crown developed into a full depressed crest of lanceolate feathers with very rigid shafts; orbital region with scattered hairs; eyelids strongly

* There are no other bones of this remarkable form accessible for examination.

bristled; lores densely bristled; loreal and frontal bristles invading the cere so as to almost cover it, especially on the upper surface, where they grow to the anterior edge; superciliary shield bare. Wing moderate, rounded, but the primaries straight; the primaries soft and obtuse; fourth quill longest; first about equal to the ninth; inner webs of the outer four distinctly sinuated, the sinuation disappearing on the sixth. Tail a little shorter than the wing, much rounded, the feathers soft and appreciably tapering toward the rounded ends.

Relationships.—From its external appearance, this curious hawk conveys no suspicion of near affinity with the *Falcones*, except in the peculiar shape of its nostrils. The plumage has the softness of that of the weaker forms of the *Buteoninae* (notably the genus *Harpagus* and the group *Pernes*), while the scutellation of the feet calls at once to mind the genus *Circaetus*, to which *Herpetotheres* bears the closest resemblance in its general aspect. Yet with this ignoble appearance when in death or when at rest, this species exhibits, when aroused, an irritability and spirit said to exceed even that of the true falcons. The bony structure of this form shows at once its very close affinity with the *Falcones*, the osteology presenting only very slight differences, the most important of which is the greater elongation of the hallux compared with the length of the lateral toes.

This form is of arboreal habits, and subsists chiefly on reptiles. Only one species is known, the Laughing Falcon of the older authors (*Falco cachinnans* Linné).

HERPETOTHERES CACHINNANS.

LAUGHING FALCON.

Falco cachinnans LINN. Syst. Nat. i, 1766, 123.

Astur cachinnans CUV. Règ. An. i, 1817, 320.—SPIX, Av. Bras. i, 1824, 8, tab. iii a.—SCHLEG. Mus. Pays-Bas, Astures, 1862, 26; Rev. Acc. 1873, 68.

Herpetotheres cachinnans VIEILL. Nouv. Diet. xviii, 1817, 317.—VIEILL. & OUD, Gal. Ois. i, 1825, 47, pl. 19.—CASSIN, Pr. Ac. Nat. Sci. Phila. iv, 1848, 87 (Vera Cruz).—BONAP. Consp. Av. i, 1850, 30.—STRICKL. Orn. Syn. i, 1855, 75.—BURM. Th. Bras. ii, 1855, 90.—SCLATER, Proc. Zool. Soc. Lond. 1857, 201 (Jalapa); *ib.* 1863, 629 (Venezuela).—LAWR. Ann. Lye. N. Y. ix, 1863, 132 (Costa Rica); Mem. Bost. Soc. N. H. ii, 1874, 300 (Mazatlan; biographical notes).—SUMICHR. *ib.* i, iv, 1869, 560 (Vera Cruz; hot region).—GRAY, Hand List, i, 1869, 31.—SALVIN, P. Z. S. 1870, 214 (Veragua).—SCL. & SALV. *ib.* 838, (coast Honduras); Nom. Neotr. 1873, 122.—PELZ. Orn. Bras. 1871, 7, 393.—RIDGW. Pr. Bost. Soc. N. H. 1873, 52.—SHARPE, Cat. Acc. Brit. Mus. 1874, 278.

Cachinna cachinnans FLEMING, Phil. Zool. ii, 1822, 236.

Dadalion cachinnans VIGORS, Zool. Journ. i, 1824, 338.

Macagua cachinnans LESSON, Traité Orn. 1831, 63.

Circaetus cachinnans KAUP, Mus. Senck. iii, 1845, 260.

Cachinna herpetotheres GRAY, Gen. B. i, 1845, 15, pl. 7, fig. 4.

Macaguá AZARA, Pax. Par. i, 1802, 81.—HARTL. Ind. Azara, 1847, 2.

Hab.—Entire intertropical region, from Mazatlan, Tehuantepec, and Vera Cruz to Bolivia and Paraguay. Not recorded from the Andean district.

Wing, 10.60–11.80; tail, 8.50–10.00; culmen, 0.85–1.00; tarsus, 2.15–2.60; middle toe, 1.60–1.90. Third to fifth quill longest; first equal to or longer than the ninth. *Adult*:—Head, neck, entire lower parts, and longer upper tail-coverts pale ochraceous or ochraceous-white; feathers of the pileum with black shaft-streaks. A broad patch or “spectacle” of black on the side of the head, involving the posterior half of the lores, the orbital region, cheeks, and auriculars, and extending thence around the upper part of the nape in a broad, abruptly-defined collar, leaving an equally well-defined nuchal collar of ochraceous or whitish below it. Upper surface, in general, blackish-brown, the primaries much varie-

gated on their basal half (or more) with ochraceous. Tail deep black, crossed by six to eight sharply-defined bands of clear, pale ochraceous, these bands being narrower on the middle feathers, but wider on the outer, than the black ones; the terminal ochraceous band much narrower than the others. "Iris brown; cere yellow; feet dull white" (Sumichrast, mss.). *Young?* (No. 67884, ♂, Nat. Mus. Costa Rica Prof. Wm. M. Gabb):—As described above, but the ochraceous deeper, and having everywhere, except along the median line below, delicate shaft-streaks of rusty-brown; the longer scapulars and tertials irregularly bordered and indented with rusty-rufous; the bands on the tail are only six in number, including the terminal one, and consist of transverse spots, which on the middle feathers do not touch the edges. Bill black; cere and base of lower mandible lemon-yellow; orbital space dusky; tarsi and toes dull brownish-gray; claws dusky black.

Biographical notes.

"This remarkable species is only to be met with in the thick forests of the warmer regions. I found it equally as common in the locality of Tehuantepec as that of Mazatlan; northward its range stops in the densely wooded districts of the western and southern parts of Sonora. It is one of the most peculiar and easily identified hawks of this region, not only from its well-defined markings, its large and broadly crested head, but its well-known scream of guaco (pronounced *waco*), which is often repeated for an hour or so at a time, either late in the evening or early in the morning. When heard at twilight amid the solemn and eternal woods of these latitudes a feeling of melancholy is produced upon the weary traveler, far from his native land, as he threads some dark and intricate path, crowded on all sides with impenetrable undergrowth, and overhung with the arched branches of trees of immense size and strange forms. This hawk is often found in pairs, and the answer to each other's call makes, at times, a singular medley of talking and laughing together. It is seldom seen in an open country, or soaring at any great height. Its flight is a quick successive movement of the wings, passing through the woods or across an opening with rapid ease. It subsists almost entirely upon reptiles and rodents, which its stout claws are well adapted for holding, and its rough, scaly legs are armored against their bites. It sometimes, however, preys upon birds."—(GRAYSON, "Birds of Western and Northwestern Mexico."—Mem. Boston Soc. Nat. Hist. vol. ii, part iii, number ii, p. 300.)

List of specimens in United States National Museum.

Catalogue No.	Corresponding No. of—	Original No.	Nature of specimen.	Sex and age.	Locality.	When collected.	From whom received.	Collected by—
16526					Brazil .....	.....	Capt. T. T. Page, U. S. N.	
30410					Costa Rica	Aug. —, —	Dr. A. von Frantzius	
39081		3	.....	.....	do	Aug. 18, 1864	do	
50770		612	.....	.....	Mazatlan .....	.....	Col. A. J. Grayson	
51026					Panama .....	.....	J. McLeannan	
57843		209	.....	♂ ad.	Tehuantepec	Dec. 15, 1868	Prof. F. Sumichrast	
59513		914	.....	.....	do	Oct. —, 1869	do	
62131		2572	.....	.....	Calobre, Veragua	Oct. —, 1869	O. Salvin	
62689		66	.....	Ad.	Tehuantepec .....	.....	Dr. Speer	
67884		231	.....	♂ ad.	Talamanca, Costa Rica .....	.....	Prof. W. M. Gabb	

Other specimens examined.—Mus. Philad. Acad. N. S., 6; mus. Boston Soc., N. H., 3; Mus. Comp. Zoöl., 1; G. N. Lawrence, 2; other sources, 1; total, 23.

GENUS HETEROSPIZIAS, SHARPE.

Urubitinga AUCT. (nec LAFRESNAYE).

Spizigeranus GRAY, Hand List, i, 1869, 9 (nec KAUP, 1844).

Heterospizias SHARPE, Cat. Acc. B. M. 1874, 160. Type *Falco meridionalis* Gm.

CH.—Similar to *Urubitinga*, but wings larger proportionally, reaching to or beyond the end of the comparatively short tail. Tibial plumes better developed, and feathers of the pileum longer and more lanceolate. Plumage more variegated, rufous prevailing. Five outer primaries with inner webs sinuated; third, fourth, and fifth quills nearly equal and longest, the fourth usually exceeding the rest; first shorter than the seventh. Tail more than half as long as the wing, slightly, but decidedly, emarginated, the lateral pair being longest.* Tarsus much more than twice as long as middle toe; outer toe nearly as long as the middle; inner much shorter; hind toe a little shorter than the inner. Claws moderate in size, of normal form, decidedly graduated, the outer being only about half the length of the posterior, which is equal to its digit. Toes with large transverse plates in an uninterrupted series, and tarsus with continuous frontal and posterior series of similar scutellæ. A well-developed web between outer and middle toes. Less than one-third the upper portion of the tarsus feathered in front. Bill rather small, exactly as in *Urubitinga anthracina*.

With a general correspondence to *Urubitinga* in most of the external features of form, this genus, or more properly subgenus, differs sufficiently in the greater development of the remiges and tibial plumes, the more lanceolate form of the feathers of the pileum, and the strikingly different coloration.

HETEROSPIZIAS MERIDIONALIS.

Falco meridionalis LATH. Ind. Orn. i, 1790, 36.

Rupornis meridionalis KAUP, Contr. Orn. 1850, 68.

Buteogallus meridionalis SCL. P. Z. S. 1860, 228.

Buteo meridionalis SCHL. Mus. P.-B. Buteones, 1862, 17; Rev. Acc. 1873, 110.—GRAY, Hand List, i, 1869, 9.

Urubitinga meridionalis SCL. & SALV. P. Z. S. 1867, 589; 1869, 252 (Plains of Valencia, Venezuela); *ib.* 634 (Arg. Rep.); Nom. Neotr. 1873, 119.—WYATT, Ibis, 1871, 332.—PELZ. Orn. Bras. 1871, 7, 394.—LEE, Ibis, 1873, 136 (Arg. Rep.).

Urubitinga (Spizigeranus) meridionalis RIDGW. Pr. Boston Soc. N. H., May, 1873, 63.

Heterospizias meridionalis SHARPE, Cat. Acc. B. M. 1874, 160.

Circus rufulus VIEILL. N. D. iv, 1816, 466.

Astur rufulus STRICKL. Orn. Syn. i, 1855, 422.

Falco rutilans LICHT. Verz. Doubl. 1823, 60.—TEMM. Pl. Col. i, 1824, pl. 25.

Buteo rutilans STEPH. Gen. Zool. xiii, 1826, 43.

Buteo rutilans LESS. Man. i, 1828, 104.

Hypomorphnus rutilans CABAN. Arch. f. Naturg. 1814, 264; Tschudi Fauna Per. 1844, 17, 84.

Asturina rutilans BURM. Th. Bras. ii, 1856, 80.

Aquila buzzo SPIX, Av. Bras. i, 1824, 6.

Rufous-headed Falcon LATH. Gen. Synop. Suppl. 1787, 33.

Garilan de estero Acanelada AZARA, Pax. Par. i, 1802, 72.—HARTL. Ind. Azara, 1847, 1.

Hab.—South America, from New Granada to Paraguay and Buenos Ayres.

Wing, 15.10–18.50; tail, 8.00–11.00; culmen, 1.00–1.10; tarsus, 3.80–4.50; middle toe, 1.65–1.85. *Adult*:—General color pale cinna-

* Remiges 25. Pterylosis as in *Buteo*, but external branch of the pectoral stem of the inferior tract only half free, as in *Haliaetus*.—(NITZSCH.)

mon, deepening into bright rufous on the alulae, primary coverts, primaries, and tibiae, and narrowly barred (except on the wings*) with dusky. Greater and middle wing-coverts and dorsal region generally grayish-dusky, inclining to black on the wing-coverts; terminal portion (about the exposed one-fourth) of the secondaries and primaries deep black. Tail deep black, broadly tipped with grayish-white, and crossed about the middle by a broad zone of the same; upper tail-coverts black, tipped with white. Head and neck pale cinnamon, like the lower parts, the head without transverse bars, but the feathers with dusky shaft-streaks; auriculars and cheeks tinged with cinereous. *Young*:—Head, neck, and breast pale ochraceous (varying to white) with shaft-streaks of dark brown, the breast with large longitudinal spots or patches of the same. Tail dusky, transversely mottled, or narrowly and irregularly barred, with dull grayish, tinged with reddish.

List of specimens in United States National Museum.

Catalogue No.	Condition of specimen.	Sex and age.	Locality.	From whom received.
32968	♂.	+♂ ad.	New Granada.....	Verreaux.
36666	♂.	— ad.	Brazil (Para).....	Nat. Hist. Museum of Rio.
50930	♂.	— ad.	do.....	Sr. Don F. Albuquerque.
50931	♂.	— ad.	do.....	Do.
59006	♂.	— ad.	Argentine Republic (Corrientes).....	Capt. T. J. Page, U. S. N.

Other specimens examined.—In mus. Philad. Acad., 7; Am. Mus., N. Y., 2; Boston Soc 3; total, 17.

In measurements, the sexes differ as follows, according to identifications of sex on labels:—

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. specimens measured.
+♂	15.10–15.16 17.25–18.00	8.00–8.30 9.50–11.00	1.00 1.00–1.10	3.80–4.25 4.35–4.50	1.65 1.80–1.85	6 3

* Where there are, however, sparse and more indistinct bars on the lesser-covert region.

GENUS BUTEOGALLUS, LESSON.

Bateogallus LESSON, *Traité Orn.* 1831, 83. Type, *Falco æquinoctialis* GMELIN.

CH.—Extremely similar to *Urubitinga*, the main difference being in the coloration; but differing somewhat also in the relative proportion of the lateral toes and the degree of development of the loreal bristles. The latter are almost entirely wanting, and the outer toe is not appreciably longer than the inner.

It is extremely doubtful whether this form should be allowed more than subgeneric rank, the resemblance in most respects to *Urubitinga* being so exceedingly close. The points of difference* pointed out above are indeed trifling, though characteristic; and although the adult plumage is strikingly different from that of any of the species of *Urubitinga*, the young stage is quite similar to that of *U. anthracina*.

BUTEOGALLUS ÆQUINOCTIALIS.

Falco æquinoctialis GM. S. N. i, 1788, 265.

Buteo æquinoctialis GRAY, *List Acc. B. M.* 1848, 37; *Hand List*, i, 1869, 9.—STRICKL. *Orn. Syn.* i, 1855, 42.—SCHL. *Mus. P.-B. Buteones*, 1862, 13.

Morphnus æquinoctialis GRAY, *Gen.* iii, App. 1849, 1.

Hypomorphnus æquinoctialis SUND. *Crit. om Levaill.* 1858, 25.

Urubitinga (Buteogallus) æquinoctialis RIDGW. *Pr. Boston Soc. N. H.*, May, 1873, 63.

Buteogallus æquinoctialis SCL. & SALV. *Nom. Neotr.* 1873, 119.—SHARPE, *Cat. Acc. B. M.* 1874, 212.

Falco buson DAUD. *Tr.* ii, 1800, 163.

Buteo buson VIG. *Zoöl. Journ.* i, 1824, 340.

Buteogallus buson GRAY, *List Gen.* 1840, 2.—BONAP. *Consp.* i, 1850, 17.

Daptrius buson GRAY, *List Acc. B. M.* 1844, 14.

Morphnus buson GRAY, *Gen.* i, 1845, 15.

Le Buson LEVAILL. *Ois. d'Afr.* i, 1799, 86, pl. 21.—SUND. *Crit. om Levaill.* 1858, 25.

Hab.—Northern South America. Columbia (SHARPE); Demerara (BR. MUS., *vide* SHARPE); Cayenne (MUS. BOSTON SOC.).

Wing, 12.25–13.40; tail, 7.00–7.50; culmen, 1.00–1.05; tarsus, 2.80–3.00; middle toe, 1.50–1.70. Third quill longest;* first longer than ninth. Tail even, or slightly emarginate. *Adult*:—Head, neck, and upper parts generally blackish-brown; lower parts, secondaries (except a broad terminal band), and broad borders to the larger scapulars lateritious-rufous, or brick-red, the lower parts barred transversely with dusky. Tail deep black, narrowly tipped with white, and crossed about the middle portion by a narrow band (generally interrupted) of pale grayish. *Young*:—Above plain dull grayish-brown, the primaries black. Feathers of the head, neck, and back narrowly edged with dull ochraceous; secondaries obscurely barred with dusky and wing-coverts sometimes bordered with ochraceous. Beneath, pale ochraceous (or ochraceous-white), with a collar of dusky spots across the lower part of the throat; breast and abdomen nearly immaculate; tibiae plain, or faintly spotted transversely with dusky. Tail grayish-brown, mixed on the basal half of the outer, and on nearly the whole extent of the inner, webs with ochraceous, and narrowly and obscurely barred toward the base with dusky.

Seven specimens examined, in mus. Philadelphia Academy.

* *B. æquinoctialis* agrees with *U. anthracina* in the following important external details: Remiges 24; outer four primaries with inner webs shallowly sinuated, the sinuation just appreciable on the fourth. Tail even or slightly emarginated.

GENUS BUSARELLUS, LAFRESNAYE.

Busarellus LAFR. D'Orb. Dict. d'Hist. Nat. ii, 1842, 735-6. Type, *Falco nigricollis* LATHAM.

Ichthyoborus KAUP, Contr. Orn. 1850, 76. Same type.

CH.—General form and appearance of *Buteogallus æquinoctialis*. Bill, feet, and claws very strong; wings large (but primaries short), and outstretched feet reaching beyond the end of the rather short, nearly even tail. Bill, cere, and nostril very similar to that of *Pandion*, but the culmen less arched, and the top of the cere elevated instead of depressed. Tarsus nearly twice the middle toe, with a frontal and posterior series of transverse scutellæ, these sometimes fused into continuous plates. Lateral toes nearly equal (but the outer perceptibly the longer), the posterior a very little shorter than the inner, and the middle one only the distance of its terminal joint longer. Inferior surface of the toes with acute papillæ, as in *Pandion*. Claws very strong, of normal shape, considerably graduated, and deeply grooved beneath. No trace of a web between the toes. Head normally feathered; the feathers, as well as those of the neck, lanceolate, the occipital ones somewhat elongated. Secondaries much developed, and very broad, fifteen in number. Primaries but little longer than the secondaries; third, fourth, or fifth longest, first shorter than the eighth; outer six with their inner webs very shallowly sinuated. Tail less than half the wing, even, or very slightly rounded. Plumes of the outer face of the tibiæ short and close, as in *Onychotes*.

This strongly-characterized and very remarkable genus exhibits a striking analogy to *Pandion* in the very strong and slightly-graduated claws, the close feathering of the tibiæ, the general form of the bill, and the sharp spicules of the toe-pads. It is said to be piscatorial in its habits, hence these modifications. It differs very essentially from *Pandion*, however, in the deep grooving of the claws, the soft texture of the plumage, the buteonine scutellation of the tarsi and toes, and indeed in all essential features. It is much more nearly related to the haliaëtine group, especially to the remarkable Australian genus *Gypoictinia*, from which, however, it is widely distinct, as it is from all American genera. But one species is thus far known.

BUSARELLUS NIGRICOLLIS.

Falco nigricollis LATH. Ind. Orn. i, 1790, 35.

Buteo nigricollis VIEILL. N. D. iv, 1816, 437.—GRAY, Gen. i, 1845, 15; Hand List, i, 1869, 9.—PUCHER. Rev. et Mag. Zool. 1850, 85.—BURM. Th. Bras. ii, 1856, 47.—SCHL. Mns. P.-B. Buteones, 1862, 17.—LAWR. Mem. Boston Soc. N. H. 1874, 302 (N. W. Mexico; biography).

Morphnus nigricollis GRAY, Gen. iii, App. 1849, 1.

Ichthyoborus nigricollis KAUP, Contr. Orn. 1850, 76.—PELZ. Orn. Bras. 1871, 3, 394.—RIDGW. Pr. Boston Soc. N. H., May, 1873, 69.

Buteogallus nigricollis STRICKL. Orn. Syn. i, 1855, 43.—CASSIN, Pr. Ac. Nat. Sci. 1860, — (Truando, N. G.) — SCH. & SALV. Nom. Neotr. 1873, 119.

Busarellus nigricollis SHARPE, Cat. Acc. B. M. 1874, 211.

Falco busarellus DAUD. Tr. ii, 1800, 168 (ex Levaill.)

Circus busarellus VIEILL. Enc. Méth. iii, 1823, 1212.

Buteo busarellus VIG. Zoöl. Journ. i, 1824, 340.—GRAY, Gen. i, 1845, 15.

Buteogallus busarellus BONAP. Consp. i, 1850, 17.

Falco melanobronchos SHAW, Gen. Zoöl. vii, 1809, 167.

Circus leucocephalus VIEILL. N. D. iv, 1816, 465.

* Second and fourth just appreciably shorter.

Aquila milroides SPIX, Av. Bras. i, 1824, pl. 1d.

Morphnus milroides CUV. Règ. An. i, 1829, 330.

Haliaëtus milroides GRAY, List. Acc. B. M. 1844, 12; Gen. i, 1845, 17.

Busard roux de Cayenne MAUD. Enc. Méth. 1784, 543.

Black-necked Falcon LATH. Gen. Synop. Suppl. i, 1787, 30.

Le Buserai LEVALL. Ois. d'Afr. i, 1799, 84, pl. 20.—SUND. Crit. om Levaill. 20 1853, 25.

Buzzaret LATH. Gen. Syn. Suppl. ii, 1801, 32.

Cabeza blanca AZARA, Pax. Par., i, 1802, 78.

Hab.—Tropical America, south to Paraguay, north to Mazatlan, Western Mexico.

Wing, 15.00–17.50; tail, 7.30–8.50; culmen, 1.10–1.30; tarsus, 3.00–3.50; middle toe, 1.75–2.20. *Adult*:—General color deep rufous, becoming white on the head; a transverse jugular patch, secondaries, primaries, and terminal half of the tail black. Feathers of the upper surface, including the pileum and nape, with shaft-streaks of black, these widening into stripes on the scapulars. Basal half of the tail usually more or less barred with black (especially on the inner webs), and the tip sometimes narrowly rufous. *Young*:—Head, neck, tail, and primaries as in the adult. Whole breast blackish; tibiae and crissum barred with black. Upper parts thickly barred with black, which prevails on the dorsal region. A dusky stripe from the eye across the auriculars.

Mexican specimens are larger and lighter-colored than those from South America.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Condition of specimen.	Sex and age.	Locality.	Date.	From whom received.
16528	.....	.....	ad.	Brazil .....	.....	Capt. T. J. Page.
17783	78	.....	ad.	Truando, New Granada.....	.....	Arthur Schott.
17784	78	.....	ad.	do .....	.....	Do.
32964	.....	.....	ad.	Amazonia .....	.....	Verreaux.
52762	897	.....	ad.	Mazatlan, Mexico.....	— —, 1868	Col. A. J. Grayson.
59007	108	.....	ad.	Paraguay	Aug. 28, —	Captain Page.

Other specimens examined.—In mus. Philad. Acad., 6; Am. Mus., N. Y., 2; Boston Soc., 4; total, 18.

The sexes compare in measurements as follows:—

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. specimens.
♂	15.00–15.50	7.50–7.80	1.10	3.15–3.20	1.80–1.85	2
♀	17.00	8.50	1.30	3.30	2.20	1

Biographical notes. •

“No locality that I have ever visited in my researches for the objects pertaining to ornithology equals that where the Mazatlan River forms an expansive valley near the sea-coast, for the great numbers and varieties of hawks there met with. They seem to assemble in this favorite spot from far and near, and almost all the known species are

represented here during the dry season. This may be accounted for from the fact that this extensive region is diversified with rudely-cultivated farms, old fields overgrown with brambles and weeds, impenetrable thorny woods and forests of large trees, interspersed here and there with stagnant lagoons and lakes, through the center of which wind the clear waters of the Rio Mazatlan; there abounds animal life in great abundance; the old neglected fields, overgrown with matted vegetation, harbor innumerable field-mice and other rodents; here various species of lizards and snakes dart through the thickets when scared from their sunny beds. The lagoons furnish other reptiles; swarms of ducks and various kinds of water-fowl resort to their slimy waters; the woods are enlivened with great numbers of birds, all of which furnish to the different species of hawks their favorite prey.

“The remarkable species which heads this article I discovered in this locality; it is entirely new to me, and I have not yet seen it mentioned in any volume at my command; the specimen has been sent to the National Institution at Washington for identification. The flight of this hawk seems rather heavy, resembling somewhat the common fish-hawk, the wings appearing very broad and the tail remarkably short. Upon examining the contents of the stomach, after skinning it, I found only the remains of fish, one of which had been but freshly devoured; it was a species of perch found in the lagoons and rivers of this region.”—[Col. A. J. Grayson, in Mem. Boston Soc. Nat. Hist. 1874, p. 302.]

GENUS THRASAËTUS, GRAY.

Harpia VIEILLOT, Analyse, 1816, 24. Type, *Falco harpyia* LINN. (not of OSCHESN. 1810).

Harpia CUVIER, 1817. Same type.

Thrasaëtus GRAY, P. Z. S. 1837, 108. Same type.

Nethrophrontes GLOGER, Handb. Naturg. 1842, 219. Same type.

Anopaia HALDEMAN, Pr. Ac. Nat. Sci. Philad. 1842, 188. Same type.

CH.—Form that of *Spizaëtus*, but organization more robust throughout, and tarsi almost entirely bare. Bill robust (similar to that of *Spizaëtus coronatus*); arch of the culmen forming about one-third the circumference of a circle, but the terminal curve rather abrupt, the tip inclining backward; upper tomium moderately lobed. Nostril oval, obliquely vertical, beveled off anteriorly to the edge of the cere. Feet exceedingly robust and powerful; tarsus less than twice the length of the middle toe; lateral toes nearly equal, the outer not appreciably longer than the inner, and very conspicuously weaker; middle toe exceeding the lateral toes by the length of its terminal phalanx; hind toe robust and powerful, nearly equal to the inner. Claws large, powerful, but rather obtuse, greatly graduated in size, the outer being scarcely more than one-third the inner in length; inner and posterior claws equal to their digits. Web between outer and middle toes well developed. Scutellæ of tarsi and toes rough, and very irregular; they are generally of irregular hexagonal shape, and small, but they enlarge into transverse plates on the toes (except the basal phalanx), and on the front of the tarsus, where they form a short series of about ten broad scutellæ; those of the posterior face are much larger, but very irregular both in size and arrangement, but they form a somewhat interrupted, and sometimes double series, which twists to the outer side toward the lower portion. Plumage generally full, the feathers broad and soft, with gently convex tips. Lores scantily bristled; tibiæ clothed with close, compact, very short feathers, extending in front over the upper half of the tarsus. Feathers of the posterior portions of the head and neck greatly developed, the occipital plumes much elongated, forming a broad, depressed crest, erectile at pleasure, those of the sides and hinder part of the neck forming when erected a broad ruff. Wing very short; primaries not reaching beyond the secondaries. Fifth, sixth, or seventh primaries longest; first shortest; outer seven with their inner webs very shallowly sinuated, the sinuation being perceptible on the last. Tail very long, nearly equal to the wing, even, the feathers strong and broad.

THRASAËTUS HARPYIA.

HARPY EAGLE.

?*Aquila cristata* BRISSON, Orn. 1760, 446.

Fultur harpyia LINN. S. N. i, 1766, 446 (Adult.)

Falco harpyia GM. S. N. i, 1783, 251.

Gypaëtus harpyia DAUD. Tr. ii, 1800, 27.

Thrasaëtus harpyia GRAY, P. Z. S. 1837, 108: Gen. i, 1845, 15, Hand List, i, 1869, 16.

—BONAP. Cons. i, 1850, 29.—STRICKL. Orn. Syn. i, 1855, 26.—LAWR. Ann. Lye.

N. Y. 1862, 7 (New Granada).—SCH. & SALV. P. Z. S. 1864, 368 (Isth. Panama);

Nom. Neotr. 1873, 120.—SHARPE, Cat. Acc. B. M. 1874, 224.

Morphnus harpyia CAB. & TSCHUDI, Arch. f. Naturg. 1844, 96, 265.—PELZ. Orn. Bras. 1871, 4, 397.

Astur harpyia SCHL. Mus. P.-B., Astures, 1862, 25.

Morphnus (*Thrasaëtus*) *harpyia* RIDGW. Proc. Boston Soc. Nat. Hist. 1873, 72.

Fultur coronatus JACQ. Beitr. 1784, 15.

Gypaëtus coronatus DAUD. Tr. ii, 1800, 23.

Falco jacquini GM. S. N. i, 1788, 251.

Falco cristatus GM. l. c. 260.

Falco destructor DAUD. Tr. ii, 1800, 60.—TEMME. Pl. Col. i, 1824, pl. 14.

Harpyia destructor CUV. Règ. An. i, 1817, 317.—HALLOWELL, Pr. Ac. Nat. Sci. Philad. 1846, 84–88 (anatomy and osteology).—D'ORB. Voy. Am. Mérid. Ois. 1847, 81.—BURM. Th. Bras. ii, 1856, 59.

Nothrophrontes destructor GLOG. Handb. Naturg. 1842, 219.

Morphnus destructor LICHT. Nomencl. 1854, 2.

Falco imperialis SHAW, Gen. Zoöl. vii, 1809, 52, pl. 15.

Harpyia imperialis STEPH. Zoöl. xiii, 1826, 17.

Falco regalis SHAW, l. c. 56.

Falco caracca SHAW, l. c. 64.

Falco calquin MOLINA, St. Chile, 1810, 220.

Harpyia maxima VIEILL. Enc. Méth. iii, 1823, 1249.

Harpyia ferox LESS. Tr. 1831, 50.

L'Aigle hupé du Brésil BRISS. Orn. i, 1760, 446.

Caracca Falcon LATH. Gen. Synop. i, 1781, 81.

Crested Eagle LATHAM, Synop. i, pt. i, 1781, 6, 7 (in part).

Crested Falcon DILLON, Trav. Spain, 1782, 80, pl. 3.

Grand Aigle de la Guiane MAUD. Enc. Méth. iii, 1784, 1250.

Crowned Vulture LATHAM, Syn. Supp. 1787, 5.

L'Ouira ouassou SONN. ed. Buffon N. H. xxxviii, 1806, 47, pl. 7, fig. 1.

Hab.—The whole of tropical America, south to Bolivia and Paraguay and north to Middle Mexico; Mirador and Tehuantepec, Mexico (NAT. MUS.); Costa Rica (NAT. MUS.); British Guiana (BR. MUS. *vide* SHARPE).

Wing, 21.00–24.50; tail, 16.00–18.50; culmen, 1.80–2.20; tarsus, 4.50–5.00; middle toe, 2.85–3.80; hind claw, 2.25–3.00; outer claw, 1.10–1.30.

Adult:—Entire upper parts and jugulum plain brownish-black, the jugular patch abruptly terminated posteriorly, with a convex outline, and sharply defined against the white of the remaining lower parts. Tibiæ barred with black—elsewhere beneath usually immaculate. Head and neck uniform ashy, paler on the throat, darker on the crest. Tail crossed by about four bands of mottled ashy, nearly as wide as the black ones.

Young:—Above light ash, marbled with blackish. Tail deep ash, marbled with black—this disposed into about five broken bands on the middle feathers, but confused on the others; secondaries and primaries mottled with dusky. Head, neck, and lower parts white, the long crest-feathers and the breast tinged with pale ashy.

A young male from the Isthmus of Tehuantepec (No. 54,224, Nat. Mus., October 8, 1868; F. Sumichrast) differs from the description of the young as above in the following particulars. Only the middle pair of tail-feathers are colored as described, they having five bands each of dark ashy and black, the bands of the two colors about equal in width, the former terminal. The other tail-feathers are wholly gray, less glaucous than the intermediæ, very indistinctly mottled with darker, and without trace of transverse bands, except an approximation to a sub-terminal one in the presence of a blackish spot next to the shaft near the end of each feather. The bird is evidently in transition-plumage, so that the intermediæ probably represent the adult dress, and the other rectrices the first plumage; traces of the coming adult livery are seen in the admixture of numerous black feathers among the lesser wing-coverts and scapulars, the longer crest-feathers, and across the jugulum, portions which are entirely black in the adult. Some of the feathers of the lower parts are tinged with ochraceous, but whether this is natural or caused by the stain of ochreous earth, is doubtful. According to Professor Sumichrast's notes on the original label, the iris is dark brown, cere and bill black, and the feet yellowish-white.

List of specimens examined.—National Museum, 4; Philad. Acad., 2; Mus. G. N. Lawrence, 1; Boston Soc., 2; total number of specimens examined, 9.

GENUS MORPHNUS, CUVIER.

Morphnus CUVIER, Règ. An. 1817, 318. Type, *Falco guianensis* DAUDIN.

"*Morphinus* FLEMING, 1822", *vide* GRAY.

CH.—Form similar to that of *Thrasaëtus*, but weaker and more slender. Tarsus more than twice the length of the middle toe; toes very short, the lateral ones about equal in length (the outer not appreciably longer), the hind toe decidedly shorter than the inner. Claws large, but greatly graduated in size, that of the hind toe exceeding its digit, the outer much less than half its length. Scutellation of the feet much more distinct and regular than in *Thrasaëtus*, the tarsus having distinct and continuous frontal and posterior rows of broad, regular, transverse scutellæ, and those of the toes uninterrupted nearly to the base; those on the outer side of the tarsus, between the frontal and posterior series, are larger than those on the inner side. Wings and tail as in *Thrasaëtus*, but the latter longer and more rounded. Plumage generally the same, but occipital crest composed of narrower feathers.

The genera *Thrasaëtus* and *Morphnus* have so many characters in common, while in the same they differ so much from all the *Falconidae* more nearly related to them in other respects, that they may be considered as forming a group by themselves, which may be designated by the term *Morphni*. They are very closely related to the *Spizaëti*, to which *Thrasaëtus* exhibits a very close approach through the equally large and powerful African species *S. bellicosus* and *S. coronatus*, which, with the present bird, constitute the largest and most powerful eagles in the world. It is a question whether the African species just named are not in reality more nearly related to *Thrasaëtus* than to the smaller *Spizaëti*; but this we cannot decide at present, having no specimens of either at hand. The two genera under consideration differ, however, from all the *Spizaëti*, including the species above named, in the nudity of the tarsus, which, instead of being densely feathered all round, as in *Aquila*, is feathered only on the upper portion in front, the rest being roughly scaled, with larger scutellæ before and behind. The "group *Morphni*," composed of these two genera alone, may be characterized as follows:—

CH.—Tarsus naked, except for the upper half, or less, of the frontal portion, roughly scaled, the smaller scutellæ being irregularly hexagonal, the larger forming a frontal and a posterior series; those behind often irregularly twisted or contorted. Toes very short, the middle one less than two-thirds the tarsus, the lateral ones shorter and equal; posterior and inner toes short and very robust, armed with powerful claws equal to or exceeding their digits in length, and outer toe very weak, with a claw less than half the length of the posterior one. Nostril broadly oval, obliquely vertical, the anterior side gradually beveled off to the edge of the cere.* Primaries very short, scarcely exceeding the greatly-developed and broad secondaries; fourth or fifth quills longest, first shortest; their inner webs very slightly sinuated, the sinuation being perceptible on the sixth, or seventh, or even the eighth quill. Tail very long, three-fourths or four-fifths the wing, even, or slightly rounded. Feathers of the occiput elongated into a conspicuous depressed crest of broad round-tipped feathers, and feathers of the neck developed into an

* It is our impression that the nostril is similarly formed in "*Spizaëtus*" *coronatus* and *S. bellicosus*; but we have no specimens for examination, and therefore cannot be positive.

erectile ruff. Contour-feathers without distinct aftershafts, but having merely a scarcely perceptible small tuft of minute fibrillæ instead.

The plumage of these birds is characterized by the broadness of the feathers, and the colors by their coarse mottlings or marblings of gray and black on the upper parts, and plain (in young) or barred (in adult) white beneath, with (in adult) or without (in young) a black pectoral area; the primaries and tail broadly banded.

The only bones of either of these genera we have been able to examine are a sternum, with the attached bones, of *Thrasaëtus*, and a very imperfect skull of *Morphnus*. The former almost exactly combines the characters of the sterna of *Aquila* and *Haliaëtus*, being much like the latter in all its outlines, the posterior margin projecting farthest back in the middle portion, and the keel very high, but the posterior outline is more distinctly sinuated, while the lateral outlines converge very rapidly anteriorly, instead of being nearly parallel for their whole length. The only resemblance to the sternum of *Aquila* (*canadensis*) is seen in the broader margin of the keel and its more distinct definition posteriorly, and in the pair of very large oval foramina near the posterior end. In size it agrees with the larger specimens of *Haliaëtus leucocephalus*, but its length is proportionally rather less. It is very different from that of *Spizaëtus ornatus*. The skull of *Morphnus* is more like that of *Aquila* than any other with which we have been able to compare it,* in nearly all the details of contour. The entire palatal surface is wanting, however, in the imperfect specimen before us, and it is probable that greater differences may exist in this portion of the skull than in the outlines.

The two genera composing the group *Morphni* may be distinguished by the following characters:—

1. *THRASAËTUS*.—Tail about three-fourths the wing. Tarsus less than twice the middle toe, with the frontal and posterior series of large scutellæ somewhat interrupted by occasional “dovetailing” of adjoining scales, the posterior series strongly twisted to the outside at the lower portion. Crest-plumes very broad.

2. *MORPHNUS*.—Tail about equal to the wing. Tarsus more than twice the middle toe, the frontal and posterior series of large scutellæ forming each a regular uninterrupted row of broad plates, that behind not twisted to the outside. Crest plumes narrow.

The *Thrasaëtus harpyia* is the most specialized form of the aquiline type, possessing in the most exaggerated degree the distinguishing features of the group.

Its distinguishing features are, abbreviated primaries and greatly-developed supernumerary secondaries; the latter, 18 in number (!), reaching to the end of the primaries. *Morphnus guianensis* comes next, with similarly naked tarsi, and the same form of wing and tail as in *Thrasaëtus*, but the crest is more like that of *Spizaëtus*, and the form also less robust. *Spizaëtus* resembles *Morphnus*, but has feathered tarsi like *Aquila*—in fact, the whole foot-structure is almost typically aquiline. The genus differs from *Aquila*, however, in short wing, occipital crest, and elongated tail. *Aquila* comes next in the series, having the foot and bill of *Spizaëtus*; but the feathering of the head is peculiar (occipital and nuchal feathers distinctly lanceolate and occiput destitute of a crest†); while the much developed rigid primaries, and shorter tail, approximate this genus more closely to the buteonine series.

* We have not been able to examine a skull of *Spizaëtus*.

† We believe the crest is present, however, in some Old World species.

MORPHNUS GUIANENSIS.

Petit Aigle de Guiane MAUDUYT, Enc. Méth. 1784, 1257.

Falco guianensis DAUD. Traité Orn. ii, 1800, 78 (ex Mauduyt), (juv.).

Morphnus guianensis CUVIER, Règ. An. i, 1817, 318.—GRAY, Gen. B. i, 1845, 15; Hand List, i, 1869, 16.—BONAP. Consp. Av. i, 1850, 30.—STRICKL. Orn. Syn. i, 1855, 24.—BURM. Th. Bras. ii, 1856, 66.—PELZ. Orn. Bras. 1871, 4, 397.—SCL. & SALV. Nom. Neotr. 1873, 120.—RIDGW. Pr. Boston Soc. 1873, 71.—SHARPE, Cat. Acc. Brit. Mus. 1874, 222.

Harpyia guianensis SWAINS. Classif. B. ii, 1837, 208.

Thrasaëtus guianensis KAUP, Mus. Senck. iii, 1845, 260.

Astur guianensis SCHLEG. Mus. Pays-Bas, Astures, 1862, 25.

Falco sonnini SHAW, Gen. Zoöl. vii, 1809, 67.

Morphnus sonnini STEPH. Gen. Zoöl. xiii, 1825, 18.

Falco delicatus SHAW, l. c. 1809, 67.

Spizaëtus variegatus VIEILL. Enc. Méth. iii, 1823, 1257.

Morphnus cristatus LESS. Tr. 1831, 51, t. ii, f. 2.

Hab.—Northern South America; Br. Guiana (SCHOMB.); Peruvian Andes (BARTLETT); Upper Amazon (WALLACE); New Granada (NAT. MUS.); Panama (*vide* SHARPE).

Wing, 17.50–20.25; tail, 15.00–18.00; culmen, 1.35–1.40; tarsus, 4.00–4.60; middle toe, 1.80–2.10. *Adult*:—(I.) Prevailing color brownish-black, uniform above, the lower parts everywhere transversely banded with white, the bars about 0.25 wide, and about equal in width to the black ones. Secondaries and primaries with indistinct broad bands of lighter brownish-dusky. Tail black, crossed by about five bands of mottled grayish,* and narrowly tipped with white. Upper tail-coverts tipped with white (No. 17781, ♂, Nat. Mus. Truando, New Granada; Dr. Schott). (II.) Generally similar, but head, neck, and breast uniform brownish-ash, the crest-feathers black subterminally. Beneath white, with more or less distinct and continuous bars of rufous, chiefly on the tibiae, abdomen, and crissum. Tail with only three gray bands (exclusive of the narrower terminal one), these sometimes nearly equal in width to the black ones. (III.) Similar, but white of the lower parts without any trace of bars. *Young*.—Head, neck, and lower parts uniform white; wing-coverts finely mottled with light ash, and the whole upper surface much variegated with the same. Tail more confusedly and narrowly banded, the black and ashy bands about equal in width.

List of specimens in United States National Museum.

Catalogue-number.	Sex and age.	Locality.	From whom received.
17781	♂ ad.	New Granada (Truando)	Arthur Schott.

Other specimens examined.—In mus. Philad. Acad., 3; Boston Soc., 3; total number examined, 7.

* These bands growing gradually broader terminally.

GENUS GAMPSONYX, VIGORS.

Gampsonyx VIGORS, Zoöl. Journ. ii, 1825, p. 69. Type, *G. swainsoni* Vig.
Chondrohierax LESS. (fide SHARPE, Cat. Acc. Brit. Mus. 1874, 340).

CH.—Similar to *Elanus*, but much smaller, and differing in relative proportions of different parts. Colors more varied. Tail more than two-thirds as long as the wing; scales of the feet larger, the upper surface of the toes having transverse scutellæ to their bases.

This genus is very closely related to *Elanus*, so much so in fact that it may be questioned whether it is not merely subgenerically distinct, since they have so many features in common. These two genera also agree with the genus *Naclerus* of Africa in so many points in which all three differ from other *Falconidæ* that they seem to form a very well-defined group, which may be termed the *Elani*, and which may be characterized by the following peculiar features common to the three genera.

Group ELANI.

CH.—Claws not grooved beneath, their under surface being merely flattened, or even rounded.* Two, or none, of the outer quills with their inner webs sinuated.† Tarsus without any transverse scutellæ, being covered nearly uniformly with small roundish or hexagonal scales. Outer toe appreciably shorter than the inner (*qu.* in *Naclerus*?). Nostril broadly ovate, nearly horizontal, situated in the middle of the cere.

The three genera differ from each other as follows:—

- A. Tomia without indentations. Tarsus about equal to, or just appreciably longer than, the middle toe; second or third quill longest outer two with inner webs sinuated near their end. Tail much shorter than the wing, double rounded.
 - a. Tail less than two-thirds the wing. Scales of the feet very minute, there being transverse scutellæ only on the terminal phalanx of the toes *Elanus*.
 - b. Tail more than two-thirds the wing. Scales of the feet larger, the transverse scutellæ of the toes extending nearly to their base. *Gampsonyx*.
- B. Tomia distinctly indented. Tarsus considerably longer than the middle toe. First quill longest; none sinuated.‡ Tail nearly equal to the wing, excessively forked, the outer feather about twice as long as the inner, and much attenuated. Scales of the feet rough, hexagonal; transverse scutellæ only on the terminal phalanx of the toes *Naclerus*.§

* *Pandion* is the only genus which shares this feature, but in it the claws are contracted in thickness toward the under side, which is not the case in the *Elani*, while all the claws are of equal length.

† Excepting certain *Pernes*, as *Elanoides* and *Baza*, no other *Buteoninæ* have less than three primaries with their inner webs sinuated. The *Pernes* differ from the *Elani*, however, very essentially, in their bony structure, lacking the superciliary shield or accessory piece to the lachrymal, which is simple and almost rudimentary, as in *Pandion*.

‡ The only instance, to our knowledge, in the entire family.

§ The synonymy and characters of this remarkable genus are as follows:—
Naclerus VIGORS, Zoöl. Journ. ii, 1825, 386. Type, *Elanoides riocouri* VIEILL.
Chelietinia LESSON, 1843 (teste GRAY, ubi?). Same type.
Chelidopteryx KAUP, Mus. Senck. iii, 1845, 258. Same type.
Cypselopteryx KAUP, Weigm. Archiv, xvi, 1850, 31.

CH.—Bill much as in *Ictinia*, but less robust; nostril unusually large, oval, obliquely

GAMPSONYX SWAINSONI.

- Gampsonyx swainsoni* VIG. Zoöl. Journ. ii, 1825, 69; Isis. 1850, 840.—STEPH. Zoöl. xiii 1826.—LESS. Man. i, 1828, pt. 2, 36.—SWAINS. Classif. B. i, 1837, 301; ii, 210.—GRAY, Gen. 1st ed. 4; 2d ed. 5; fol. i, 1845, 26, pl. 9, fig. 4; List B. Brit. Mus. 1844, 46; Gen. & Subgen. 1855, 6; Hand List, i, 1869, 28.—CABAN. Schomb. Reis. Br. Guian. iii, 1848, 735.—BONAP. Consp. i, 1850, 21.—STRICKL. Orn. Syn. i, 1855, 137.—BURM. Th. Bras. ii, 1856, 114.—LEOT. Ois. Trinidad, 1866, 41.—SCL. & SALV. P. Z. S. 1869, 252 (Maruria, Venez.).—FINSCH, P. Z. S. 1870, p. — (Trinidad).—PELZ. Orn. Bras. 1871, 6, 398.—SCL. & SALV. Nom. Neotr. 1873, 121.—SHARPE Cat. Acc. B. M. 1874, 340.
- Elanus (Gampsonyx) swainsoni* RIDGWAY, Pr. Boston Soc. N. H., 1873, 54.
- Elanus swainsoni* KAUP, Contr. Orn. 1850, 59.—SCHL. Mus. P.-B. Milvi, 1862, 9.
- Nertus rufifrons* BOIE, Isis, 1828, 314.
- Falco rufifrons* MAX. Beitr. Orn. Bras. iii, 1830, 123.
- Chondrohierax rufifrons* LESS. (teste SHARPE).
- Elanus torquatus* LESS. Tr. 1831, 72.—PUCHER. R. Z. 1850, 14.

Wing, 5.50–6.30; tail, 3.50–4.30; culmen, 0.45–0.50; tarsus, 0.85–0.95; middle toe, 0.75–0.80. *Adult*:—Forehead and auriculars straw-yellow; lower parts white, with a yellowish wash, most pronounced on the sides where there is frequently a tinge of rufous; tibiæ, axillars, and lining of the wing ochraceous. A patch covering the crown and occiput, and surrounding the eyes, a spot on each side of the breast, with the entire upper parts brownish-black or dusky-plumbeous; nuchal collar, sides, and flanks chestnut-rufous, the former with a white one above it, below the dusky of the occiput. *Young*:—Similar, but nuchal collar entirely white, and feathers of the upper parts usually with rusty borders.

List of specimens in United States National Museum.

Catalogue-number.	Condition of specimen.	Sex and age.	Locality.	From whom received.
13654	M.	— ad.	New Granada (Savanilla).....	J. Akhurst.

Other specimens examined.—In mus. Philad. Acad., 4; Boston Soc., 3; Mus. Comp. Zoöl., 2; G. N. Lawrence, 1; total, 11.

vertical; cere very narrow and compressed on top. Tarsus considerably longer than middle toe; web between outer and middle toes just appreciable. Tarsus and toes covered uniformly with rough or granular scales of hexagonal or nearly square form; only the terminal joint of the toes with transverse scutellæ; claws rounded beneath. Wing very long, swallow-like, the first primary much the longest, and none sinuated on either web. Tail tern-like, nearly equal to wing, forked to about one-half its length, the outer feathers much attenuated. Colors, ashy above, white beneath.

GENUS LEPTODON, SUNDEVALL.

Cymindis CUVIER, Règ. An. i, 1817, 319. Type, *Falco cayennensis* GMEL. (Not of LATR. 1806.)

Leptodon SUNDEVALL, K. Vet. Akad. Handl. 1835, 114. Same type.

Odontriorchis KAUP, Mus. Senck. iii, 1845, 262. Same type.

CH.—Bill strong, swollen laterally, much hooked, the upper outline of the cere gradually ascending, and moderately arched; superior tomium with a more or less distinct tooth behind the strong, but rather short, hooked tip. Membrane of the cere somewhat tumid, the nostril narrow, oblique, slit-like, nearly covered by a tumid membrane, and touching the anterior edge of the cere. Lores and eyelids naked, but uniformly bristled. Feet small but robust, the tarsus about equal to the middle toe. Top of the toes with regular transverse scutellæ; tarsus covered with rather large hexagonal scales. Claws rather small, very broad, and slightly hollowed beneath, the edges sharp and prominent. Feathers of the crown and occiput distinct, rather lengthened, nearly cuneate, but with rounded tips. Secondaries much developed, reaching nearly to the end of the primaries. Third to fifth quill longest; first shorter than seventh, sometimes shorter than the ninth. Inner webs of outer four to six very slightly sinuated. Tail lengthened, about two-thirds as long as the wing, rounded, the feathers very broad.

This subgenus is so very similar to *Aricida* that there is considerable doubt as to the propriety of separating the two; the only difference is in the proportionate development of the primaries and secondaries, in the slightly more rounded tail, and in the less developed crest and larger size of *Leptodon*. These two genera, along with *Baza*, *Pernis*, and *Regerhinus*, form a most natural group, which may be termed the *Pernes*, and to which we are doubtfully inclined to refer the genus *Elaanoides* as an aberrant member.

This group may be characterized as follows:—

Group PERNES.

CH.—Superciliary process of the lachrymal simple and much abbreviated, as in *Pandion*, but (as in the *Polybori*), not ankylosed with the frontal bone. Outer toe not reversible, and the claws normal (*i. e.* graduated in size, and flattened, or slightly concave beneath). Feet small, the tarsus very short, scarcely exceeding the middle toe; outer and middle toes not united at the base by a membrane. Tarsus covered with irregular, usually hexagonal, scales—never scutellate; middle claw with its inner edge much produced, convex, sharp, sometimes with rudimentary pectinations. Plumage soft, full; sides of the head densely feathered close up to the eyelids, the eyes prominent, and not protected by a superciliary shield.

The more strongly-marked genera of the group may be characterized as follows:—

A. Cere tumid, the nostril slit-like, overhung by a soft membrane. Tail even or rounded, much shorter than the wing. Inner webs of outer two to six primaries with inner webs sinuated; third to fifth quill longest; first shorter than seventh.

a. Bill only moderately hooked and not conspicuously compressed. Feathers of the pileum rather firm, distinctly defined; several of those on the occiput more elongated, forming more or less of a crest.

- Loral feathers very compact, imbricated, and without bristly tips. Tomia not toothed.....*Pernis*.
 Loral feathers moderately compact, or even scattered, not imbricated, and with bristly tips. Tomia toothed.
 §. Four outer primaries with inner webs sinuated....*Leptodon*.
 §. Two outer primaries with inner webs sinuated.....*Baza*.
 b. Bill greatly hooked, and much compressed. Feathers of the pileum soft and blended, without tendency to greater elongation on the occiput. Lores naked, crossed by a narrow line of fine bristles from the anterior angle of the eye to the forehead.....*Rogerhinus*.
 B. Cere not tumid, the nostril broad oval, without overhanging membrane. Tail excessively forked, about equal to the wing. Inner webs of only two outer quills sinuated. Tomia without indentations. Lores densely feathered.....*Elanoides*.

The transition from *Leptodon* to *Baza*, through *Aricida*, may be expressed by the following tabulation of the main characters of the three genera:

- A. Five outer primaries with inner webs sinuated.
 a. Tail much rounded. Primaries but little longer than secondaries. Lores scantily feathered. Indentations of the tomia a simple tooth and notch. Occipital crest rudimentary.....*Leptodon*.
 b. Tail nearly even. Primaries considerably longer than the secondaries. Lores scantily or compactly feathered. Indentations of the tomia simple or double. Occipital crest rudimentary or moderately developed.....*Aricida*.*
 B. Two outer primaries with their inner webs sinuated. Loral feathers very compact. Indentations of the tomia double. Occipital crest very long.....*Baza*.

The apparently wide difference between *Leptodon* and *Pernis* in the feathering of the lores is most perfectly made up by the varying character of the species in the genus (or subgenus) *Aricida*, the three species we have been able to examine varying as follows:—

A. suberistata.—Loral feathers compact. Indentations of the tomia double.

A. verreauxi.—Loral feathers scant. Indentations of the tomia double.

A. cuculoides.—Loral feathers scant. Indentations of the tomia simple.

Thus, in *A. suberistata*, the loral feathers are only a little less compact than in *Baza*, in which they are rather less dense than in *Pernis*. In the other two species they are still less dense, though more so than in *Leptodon* (as most restricted); while one of the species of *Aricida* agrees with *Leptodon* in the simple indentations of the tomia. Nearly all of these birds, including *Pernis*, have more or less of a tendency in a few of the occipital feathers to form a crest, which in *Leptodon* is constantly rudimentary, and in the species of *Aricida* and *Pernis* frequently so.

LEPTODON CAYENNENSIS.

Falco cayennensis GMELIN, Syst. Nat. i, 1788, 269 (not of p. 263!), (adult).—LATH. Index Orn. i, 1790, 28; Gen. Hist. i, 1824, 269.—DAUD. Tr. Orn. ii, 1800, 74.—SHAW, Zoöl. vii, 161.—TEMM. Pl. Col. i, 1824, pl. 270; Tab. Méth. 4.

Aricida SWAINSON, Birds W. Africa, i, 1837, 104. Type, *A. cuculoides* SWAINS.

This genus includes also *A. suberistatus* (Gould) and *A. verreauxi* Lafr., and probably others, since Mr. Sharpe includes in the genus "*Baza*" ten species, of which we cannot state positively that more than one, *B. lophotes*, is a true *Baza*, not having seen most of the species described.

Cymindis cayennensis CUVIER, Règ. An. i, 1817, 319; *ib.* ed. 2, 331.—VIG. Zoöl. Journ. i, 182—, 323, 337.—STEPHENS, Zoöl. xiii, pt. 2, 18—, 18.—LESSON, Man. i, 1828, 91; Tr. Orn. 1831, 55, pl. 13, fig. 2.—LAFRESN. Mag. Zoöl. pl. 22.—KAUP, Class. Säug. n. Vög. 1844, 123.—GRAY, Gen. B. 1845, 25; Hand List, i, 1869, 27.—BONAP. Consp. Av. i, 1850, 20.—V. D. HOEV. Handb. Dierk. 1855, 809.—STRICKL. Orn. Syn. i, 1855, 128.—BURM. Th. Bras. ii, 1856, 107.—LAWR. Ann. Lye. N. Y. 1861, p. — (New Granada); *ib.* 1868, 134 (Gulf of Nicoya, Costa Rica).—SCHLEG. Mus. Pays-Bas, Pernes, 1862, 9; Rev. Acc. 1873, 136.—LÉOT. Ois. Trinidad, 1866, 34.—SCLATER, P. Z. S. 1868, 629 (Venezuela).—SCL. & SALV. P. Z. S. 1870, 215 (Veragua); *ib.* 838, (coast Honduras); Nom. Neotr. 1873, 122.—FINSCH, P. Z. S. 1870, p. — (Trinidad).—PELZ. Orn. Bras. 1871, 5, 398.—RIDGW. Pr. Bost. Soc. N. H. 1873, 53.

Astur cayennensis SPIX, Av. Bras. i, 1824, pl. 8c.

Buteo cayennensis LESS. Man. Orn. i, 1828, 103.

Odontriorchis cayennensis KAUP, Class. Säug. n. Vög. 1844, 124; Contr. Orn. 1850, 78.

Leptodon cayennensis SHARPE, Cat. Acc. B. M. 1874, 333.

Asturina cyanopus VIEILL. Enc. Méth. iii, 1823, 1261.

Falco palliatus MAX. in Temm. Pl. Col. i, 1823, pl. 204 (juv.); Beitr. iii, 1830, 148.

Buteo palliatus LESS. Man. Orn. i, 1828, 103.

Cymindis buteonides LESS. Tr. Orn. 1831, 55.

Cayenne Falcon LATH. Syn. i, 1781, 59.

Petit Antour de Cayenne BUFF. Pl. Enl. i, 473.

Hab.—Tropical America, on the Atlantic side, from Brazil to Mirador, Mexico. West Indies? (SHARPE).

Wing, 11.25–13.60; tail, 9.70–10.50; culmen, 0.80–1.05; tarsus, 1.40–1.75; middle toe, 1.50–1.75. Fourth, fifth, or sixth quill longest; first shorter than the ninth. Lower parts usually entirely white, but sometimes with narrow dusky streaks on the breast and sides, and occasionally (in melanistic young birds) with broad stripes or longitudinal spots of blackish over entire lower surface. Above plain plumbeous, plumbeous-black, brownish-black or blackish-brown (the latter color usually in the younger stage and variegated with ochraceous,) the head usually lighter (generally pale ash-gray or pure white), but sometimes (in those individuals which are heavily striped beneath) almost wholly black. Tail broadly banded with black and gray or black and brown. *Adult*:—Above very dark bluish-plumbeous, approaching black anteriorly, with a faint reflection of bottle-green in certain lights; remiges indistinctly banded with lighter plumbeous. Head and neck plain fine bluish-plumbeous or pearl-gray, darker on the pileum and fading into white on the throat. Beneath entirely immaculate pure white. Tail deep black, narrowly tipped with white, and crossed by three rather narrow bands of bluish-gray. *Young*.—*Light phase*:—Above dusky brown, approaching black anteriorly, the remiges indistinctly banded with dusky. Head and neck usually almost wholly pure white, the pileum more or less spotted with blackish-brown. Lower parts white. Tail brownish-gray or brownish-white, crossed by three bands of black.* *Dark phase (Melanistic?)*:—Upper parts as in the last, but lower parts striped more or less broadly with blackish, and the head and neck (except the throat) uniform blackish like the back.

A young specimen from Panama in Mr. Lawrence's collection, agreeing with stage III of the above diagnosis, calls to mind Temminck's Pl. Col. 270; but it is not so dark beneath as the plate referred to, has no rufous on the nape, and has white streaks on the throat.

*Another phase (younger?) is similar, but the lesser wing-coverts are much mixed with white, and all the feathers of the upper parts are tipped with pale buff or fulvous. The black bands of the tail only about half as wide as the interspaces, and the head pure white, with only a few touches of dusky on the occiput.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	Date.	From whom received.
32973	42630	.....	Amazonia .....	.....	Verreaux.
33533	145	.....	Mirador, East Mexico.....	Oct. —, 1864	Dr. C. Sartorius.
44730	310	.....	do .....	.....	Do.
64932	636	♂ ad.	Costa Rica .....	.....	Prof. W. M. Gabb.
66332	.....	♂ ad.	Costa Rica (Old Harbor).....	.....	Do.
67280	56	♂ ad.	Tehuantepec.....	Feb. 13, 1872	Prof. F. Sumichrast.
67859	255	♂ ad.	Costa Rica (Talamanca) .....	.....	Prof. Gabb.

Other specimens examined.—In mus. Philad. Acad., 7; Am. Mus., N. Y., 1; Boston Soc., 4; Mus. Comp. Zool., 1; G. N. Lawrence, 2; other specimens, 2; total, 24.

The sexes compare in measurements as follows:—

Sex.	Wing.	Tail.	Culmen	Tarsus.	Middle toe.	No. specimens.
♂	11. 90–12. 50	9. 80–10. 00	1. 00	1. 40–1. 55	1. 50–1. 60	3
♀	11. 25–13. 75	9. 80–11. 00	1. 00–1. 05	1. 50–1. 70	1. 50–1. 60	5

“Iris dark purplish-gray or brownish-plumbeous; cere, orbits, lores, and feet light ashy-blue or dirty grayish-white.”—(SUMICHRIST, MSS. on labels.)

GENUS REGERHINUS, KAUP.

Regerhinus KAUP, Mus. Senck. iii, 1845, 262. Type, *Falco uncinatus* ILLIG.
Cymindis SWAINS. 1837, et AUCT. (nec. CUV. 1817).

CH.*—Form very light; the feet very weak (almost *Steatornithine*); bill very large, greatly hooked, and much compressed; wings and tail large, the latter slightly rounded. Tomia without indentations or perceptible sinuations; gonys nearly straight; tomium of the lower mandible very convex. Nostril very small, slit-like, narrower, and more horizontal than in *Leptodon*. Tarsus about equal to the middle toe, covered with large, irregular, hexagonal scutellæ (as in *Leptodon* and *Elanoides*); toes and claws compressed; middle claw with its inner edge much produced, as in *Elanoides*. Remiges and rectrices greatly developed, very broad, and of a soft texture. Contour-feathers of the inferior surface remarkably broad, their tips nearly truncated; feathers of the pileum soft and blended, with no tendency to an occipital crest. Secondaries very long and broad, about three-fourths as long as the primaries; third, fourth, or fifth quills longest; first shortest; outer six with inner webs faintly sinuated. Tail large, but much shorter than the wing, slightly rounded, the feathers broad and soft. Lore wholly naked, with a narrow strip of bristles extending from the anterior angle of the eye to the anterior part of the frontal feathers, which extend forward so as to almost cover the top of the cere. After-shafts better developed than in *Leptodon*.

This genus is so very distinct from *Leptodon* that it is a matter of surprise why it should ever have been considered synonymous. The form of the bill is entirely different and strikingly distinctive, while there are very conspicuous differences throughout its external structure. The feet are weaker than in any of the allied genera, the toes and claws being more compressed. In its pterylosis, it is more like *Aricida subcristata* than any other species of the group, the contour-feathers of the lower surface having that same remarkable breadth and nearly truncated termination, while the wings and tail are quite similar. There is also considerable resemblance in the colors and markings. In *Aricida*, however, the lore is feathered, the occipital feathers are pointed and crest-like, and the bill more like that of *Leptodon*.

The species of this genus present so many phases of plumage that they are in a state of great confusion. We do not pretend to have made any progress toward elucidating them, but present our views so far as they have resulted from the examination of the material available.

REGERHINUS UNCINATUS.

Falco uncinatus TEMM. Pl. Col. 1824, pls. 103, 104, 115.

Cymindis uncinatus LESSON, Man. Orn. i, 1828, 91; Tr. Orn. 1831, 55.—VIG. Zoöl. Journ. i, 337.—STEPHENS, Zoöl. xiii, 22.—GRAY, Gen. B. 1845, 25, pl. 9, fig. 7; Hand List, i, 1869, 136.—KAUP, Class. Säug. u. Vög. 1844, 124.—BONAP. Consp. Av. i, 1850, 21.—BURM. Th. Bras. ii, 1856, 108.—SCL. & SALV. P. Z. S. 1864, 369 (Isth. Panama); Nom. Neotr. 1873, 122.—LÉOT. Ois. Trinidad, 1866, 36.—LAWR. Ann. Lyc. N. Y. ix, 1868, 134 (San José, Costa Rica).—FINSCH, P. Z. 1870, 557 (Trinidad).—S. PELZ. Orn. Bras. 1871, 5, 398.—SCHLEG. Rev. Acc. 1873, 136.—SHARPE, P. Z. S. 1873, 419.

* I have been unable to obtain bones of this genus, but the osteological characters are probably very similar to those of *Leptodon* and *Elanoides*. Nitzsch mentions nothing peculiar in the pterylosis.

Regerhinus uncinatus KAUP, Mus. Senek. 1845, 262; in Jard. Contr. Orn. 1850, 77.—

R. SCHOMB. Reise Guiana, 1848, 736.

Rostrhamus uncinatus STRICKL. Orn. Syn. i, 1855, 136.

Leptodon uncinatus SHARPE, Cat. Acc. B. M. 1874, 330.

Falco vitticaudus MAX. Beitr. iii, 1830, 178.

Cymindis vitticaudus PELZ. Orn. Bras. 1871, 6, 398.

Cymindis cuculoides SWAINS. Class. B. i, 1837, 311; ii, 209.

? *Cymindis pucherani* LÉOT. Ois. Trinid. 1866, 40.—GRAY, Hand List, i, 1869, 25.—

FINSCH, P. Z. S. 1870, 557.

? *Cymindis boliviensis* BURM. P. Z. S. 1868, 635 —GRAY, Hand List, i, 1869, 28.

Cymindis (Regerhinus) boliviensis GRAY, Hand List, i, 1869, 28, No. 257.

Culmen forming a curve of one-fourth to one-third the circumference of a circle; horizontal diameter of the upper mandible considerably greater through the tomia than nearer the culmen. Wing, 10.70–12.25; tail, 8.00–9.00; culmen, 1.00–1.45; tarsus, 1.40–1.50; middle toe, 1.15–1.25. Fourth to fifth quills longest; first shortest.

a. Light phase.

Adult:—(I.) Uniform dark plumbeous or plumbeous-black, the occiput with much basal white; tail deeper black, narrowly tipped with white or ash, and crossed about the middle by a broad zone of white, this sometimes tinged with ash.* (II.) Similar, but paler plumbeous beneath, the crissum pale ochraceous or ochraceous-white (sometimes with distant bars), and the entire lower surface barred narrowly with white. Primaries with distant indistinct bands of black, especially on inner webs. Upper tail-coverts tipped and barred with pale ash or white. Tail with an additional narrower band at the end of the upper coverts,† the light bars (which are more or less tinged with ash) passing into pale cream-color or white on the webs. Inner webs of the primaries sometimes banded (about equally) with white and plumbeous.‡ *Young*:—(III.) Above blackish-brown or brownish-plumbeous, approaching black anteriorly, and interrupted by a broad and continuous nuchal collar of deep ochraceous or bright rufous. Tail with three about equal zones of black and grayish, and narrowly tipped with the latter. Auriculars and forehead bluish-ashy; pileum like the back. Beneath white or ochraceous-white (more ochraceous on the crissum), with broad nearly equal transverse bars of ferruginous over the whole surface, except sometimes on the crissum. Inner webs of primaries white, distantly banded with black. Inner primaries tinged with rufous. (IV.) *Younger*? :—Generally similar, but feathers of upper parts more or less bordered with rufous; secondaries, tertails, and primaries narrowly tipped with white or ochraceous, and very obscurely banded with darker. Nuchal collar white and sometimes badly defined. Tail crossed with four nearly equal bands of black and grayish, and narrowly tipped with white. Auriculars and forehead blackish-brown, like the back and pileum. Lower parts barred with dark umber instead of rufous, the bars sometimes almost wholly absent.§ (V.) *Youngest*? :—Similar to the last, but the rufous borders to the feathers of the upper parts broader, very conspicuous on the tertials, secondaries, and primaries. Auriculars and broad nuchal collar pale ochraceous. Beneath distantly and irregularly barred with ferruginous over the whole surface except the throat.

*Occasionally, as in No. 3054H, "North Coast Central America," and a Guatemalan skin in Mr. Lawrence's collection, there is another narrower band anterior to this, just at the end of the upper coverts, or concealed by them.

†The tail-pattern of this stage is that seen in occasional individuals in the more uniformly plumbeous dress, noticed above.

‡Specimens of this plumage retain traces of stage III.

§Some examples of this stage retain traces of stage V.

b. Melanistic phase.

Adult? (VI): Uniform brownish black. Tail deep black, narrowly tipped with white, and crossed by two bands of gray, which change to white or cream-color on the inner webs (= *C. boliviensis* BURM. and *C. pucherani* LÉOT.). *Young* (VII): Similar to the above, but the feathers of the upper surface with narrow terminal margins of rusty, and those of the crissum with white tips.

The black plumage described above, and upon which *Cymindis boliviensis* of Burmeister and *C. pucherani* of Léotaud were based, is almost certainly merely a melanism of the common *R. uncinatus*. We have seen two specimens—an adult in the museum of the Boston Society of Natural History and a young female in the American Musum of New York. They agree entirely with Burmeister's description referred to above, which is as follows:—

DIAG.—“*C. fusco-nigra, remigibus rectricibusque subtus albo-fasciatis; cera pedibusque croceis: long 18*”.

“We have of this species one specimen in our museum, which was killed near Santa Cruz de la Sierra, in the woody plains of the interior of Bolivia. As I can find no description of this bird in the works fallen under my inspection, I describe it as a new species.

“In size and figure, entirely like the common Brazilian species *Cym. uncinata*. The bill not stronger, and of the same form, but rather longer; the upper mandible black, the lower mandible whitish. The sides of the face, from the beak to the eyes, naked, with some black bristles in a row from the eye to the nostrils. Iris dark brown. The whole plumage blackish-brown, but the bases of the feathers of the vertex from the front to the occiput white; the nuchal feathers elongated, broad, rounded. First primary short, not longer than the secondaries; the second somewhat longer than the fifth; the third somewhat longer than the same; and the fourth the longest of all; every one with four or five white bands on the inside, of which the exterior is somewhat grayish. Secondaries of nearly equal size, every one with five or six whitish bands on the inside, which are only clear white in the middle of the plume. Tail only two inches longer than the wings in position, black, with two large gray bands on the upper side, and the same white on the under side, and a similar margin at the ends of the rectrices. Legs yellow, with black claws, the outer toe the same length as the inner; the tarsus covered in front with small hexagonal scales.

“Whole length, from the tip of the beak to the end of the tail, 18 inches; beak, 1 inch; wing, 10 inches; tail, 7 inches; tarsus, 1½ inch; middle claw [toe] without the nail, 14 lines, the nail, 8 lines.”

With Burmeister's description of his *Cymindis boliviensis*, as quoted above, a specimen in the collection of the Boston Society of Natural History;* while another in the New York Museum agrees very closely but has the feathers of the upper surface narrowly bordered terminally with rusty, and the lower tail-coverts with white. Tail deep black, narrowly tipped with white, and crossed by two zones of gray, which change to white or cream-color on the inner webs. The specimen in the New York Museum is marked “♀ *juv.* Brazil”, and, judging from the rusty borders to the feathers, is undoubtedly an immature bird. The other specimen is marked simply “South America”.

* This specimen is No. 1411 on p. 53 of “Catalogue of the Falconidæ in the museum of the Society” (Proceedings, May 21, 1873).

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	From whom received.
30541	.....	— ad.	Central America	Captain J. M. Dow.
33203	160	— ad.	Costa Rica	Dr. A. von Frantzius.
34605	.....	— juv.	Panama	J. H. Reeves.

Other specimens examined.—In mus. Philad. Acad., 9; Am. Mus., N. Y., 6; Boston Soc., 6; G. N. Lawrence, 5; total, 29.

REGERHINUS WILSONI.

Cymindis wilsonii CASS. Journ. Ac. N. S. Philad. n. ser. i, 1847, 21, pl. 7.—GRAY, Gen. B. fol. App. 2; Hand List, i, 1869, 23.—BOXAP. Consp. 1850, 21.—STRICKL. Orn. Syn. i, 1855, 129.—LAWR. Ann. Lyc. N. Y. vii, 1860, 257.—SCL. & SALV. Nom. Neotrop. 1873, 122.

Regerhinus wilsonii KAUP, Arch. f. Naturg. 1850, 40.—BREWER, Pr. Boston Soc. N. H. 1860, 305.—GUNDL. Journ. f. O. 1872, 360.

Leptodon wilsoni SHARPE, Cat. Acc. Brit. Mus. 1874, 333.

Regerhinus uncinatus CABAN. Journ. f. Orn. 1854, lxxx (not of Temm.).

Cymindis uncinatus BREWER, Pr. Boston Soc. N. H. 1860, 305.

Hab.—Cuba.

Culmen forming a curve of nearly one-half the circumference of a circle; horizontal diameter of the upper mandible scarcely greater through the tomia than near the culmen. Wing, 9.70–10.50; tail, 7.50–8.00; culmen, 1.50; tarsus, 1.15–1.25; middle toe, 1.05–1.10. Fifth quill longest; first about equal to the tenth. *Adult*:—Above, including nape and head all round, bluish-slate, paler and more bluish-ashy on cephalic portions; primaries darker. Tail black, crossed by four light bands, the two anterior ones white, the others light ash-gray, the subterminal one much the widest, the terminal one about equal to the others. Beneath white, barred everywhere, except on the crissum, with pale gray anteriorly and umber posteriorly, these bars nearly as wide as the white interspaces. Crissum with the longer feathers narrowly and distantly barred. Under surface of the primaries plain white, anterior to their situation the terminal portion ashy, with about three distant bands, those on the white being dilute rufous, and those on the gray blackish. *Young*:—(I.) Above umber, more or less tinged with ferruginous on the wings, the inner primaries being mostly of this color. Tail brownish-gray, crossed by three distant bands of blackish, these broader and more distinct terminally, the tip being quite broadly and regularly of the ground-color. Near the base are two to three more or less distinct narrow and interrupted bands of white. Lower parts, including a collar round the nape, white, the whole surface broadly (more narrowly on the neck, all round, and on the lining of the wing) barred with ferruginous. II. (*very young*):—Above brownish-gray, the feathers bordered terminally with pale rusty; remiges indistinctly banded with darker. Tail ash-gray, becoming gradually white at the extreme base, narrowly tipped with the same, and crossed by six narrow bands of dull black. Head plain pale ashy, becoming gradually white on the throat. Beneath white, distinctly barred, except on the crissum, with narrow lunules of brown.

List of specimens in United States National Museum.

Catalogue No.	Sex and age.	Locality.	From whom received.
23550	♂ juv.	Monte Verde, Cuba	Charles Wright.

Other specimens examined.—In Mus. Philad. Acad., 2.

REGERHINUS MEGARHYNCHUS.

Regerhinus megarhynchus DES MURS, Casteln. Voy. Zool. Ois. 1855, 9, pl. 1.

Cymindis megarhynchus GRAY, Hand List, i, 1869, 23.—SCL. & SALV. Nom. Neotrop. 1873, 122.

Leptodon megarhynchus SHARPE, Cat. Acc. Br. Mus. 1874, 332.

Hab.—Peru and Bolivia (Sharpe).

“*Nearly adult.*—Above slaty blue. Clearer on the head and darker on the back; wing-coverts brown, margined with deep ocher (evidently the remains of young plumage); quills brown, shaded externally with ashy, the secondaries clearer brown, with rufous-white tips; under surface of wings white at base, greyish-white for the apical half, all the quills barred above and below with dark brown; lower back, rump, and upper tail-coverts blackish-brown, the latter barred near the base and tipped with white; tail alternately banded with black and ashy-brown, and tipped with white, the black bands being much the broadest, and between them and the ashy bands a faint indication of a white line; throat slaty-blue, like the sides of the face; rest of the under surface slaty-blue, banded narrowly with white; under wing- and tail-coverts white, with only a few nearly obsolete indications of narrow brownish cross-bars; bill dark horn-black, yellowish on under mandible; feet deep yellow, nails black. Total length 19 inches, culmen 2.5, wing 12.3, tail 9.2, tarsus 1.6.”—(SHARPE, *l. c.*)

This species we have not seen. It is apparently more like *R. wilsoni* than *R. uncinatus*, but is evidently very distinct from both.

GENUS ANTENOR, RIDGWAY.

"*Craxirex* GOULD", CASSIN, Birds N. Am. 1858, 46, et AUCT. (not of GOULD, 1841).

Antenor RIDGWAY, Proc. Boston Soc. Nat. Hist. May, 1873, 63. Type, *Falco unicinctus* TEMM.

"*Parabuteo* RIDGWAY", B. B. & R. Hist. N. Am. Birds, iii, Jan. 1874, 248. Same type.*
Erythrocnema SHARPE, Cat. Acc. Brit. Mus. July, 1874, 84. Same type.

CH.—Similar to *Buteo*, but five, instead of three or four, outer primaries, with inner webs emarginated. Bill as in *Buteo*, but superior tomium rather more distinctly lobed, and upper outline rather more ascending basally. Tarsus about twice the length of the middle toe; outer toe slightly longer than the inner, which very slightly exceeds the posterior toe; claws strong, well curved, typically buteonine, the posterior equal to or longer than its digit; scutellation typically buteonine; number of transverse plates in front varying from 11 to 12; upper portion of the tarsus feathered in front for nearly half its length. Wing moderately long, the third, fourth, or fifth quills longest; first shorter than the eighth; outer five with their inner webs emarginated, the cutting being very indistinct, however, on the fifth. Tail long, about two-thirds the wing, even, or very slightly rounded. Lore very scantily feathered, the bristles being very fine and scattered.

The more closely we have examined this form, the more difficult it has become to appreciate *constant* characters separating it from *Buteo*, with the more compactly built members of which, as *B. borealis* and its allies, it agrees very closely in the details of external form. The main differences consist in the longer tail, more scantily-bristled lores, and the emargination of the fifth primary. It is far less closely related to *Urubitinga*, though we had previously hinted at such a relationship, the latter genus differing in much shorter, more rounded wing, with the inner webs of the primaries very shallowly sinuated. To *Astur*, it is far more remotely allied, the osteological as well as external differences being very striking.

The cranium of *Antenor* is very similar to that of *Buteo borealis*, the details of structure being exactly the same, the only differences being slight ones of contour. Its upper portion is more depressed, presenting in this respect a closer resemblance to that of *Asturina*.

ANTENOR UNICINCTUS.

a. unicinctus, Temminck.

Falco unicinctus TEMM. Pl. Col. i, 1824, pl. 313.

Morphnus unicinctus LESS. Man. i, 1828, 90.

Astur unicinctus CUV. Règ. An. i, 1829, 322.—GRAY, Gen. i, 1849, 27.—KAUP, Contr. Orn. 1850, 66.—STRICKL. Orn. Syn. i, 1855, 221 (in part).

Nisus unicinctus LESS. Traité, 1831, 61.

Buteo unicinctus GRAY, List Acc. B. M. 1844, 18; Hand List, i, 1869, 7.

Hypomorphnus unicinctus CABAN. Arch. f. Naturg. 1844, 263; Faun. Per. 1844, 17, 85.

Spizagerauus unicinctus KAUP, Mus. Senck. iii, 1845, 260.—SCHL. P. Z. S. 1860, 288.

Craxirex unicinctus BONAP. Rev. et Mag. Zool. 1854, 537.—ORTON, Am. Nat. 1871, 624 (Quito Valley).

Asturina unicincta BURM. Th. Bras. ii, 1855, 82; Reis. La Plata-St. ii, 1861, 436.—SCHL. Mus. P.-B. Asturinae, 1862, 2.

Urubitinga unicincta LAFR. R. Z. 1849, 99.—SCHL. P. Z. S. 1858, 150.—PELZ. Orn. Bras. i, 1868, 3. No. 10: iv, 1871, 2, 394.—SCHL. & SALV. P. Z. S. 1868, 143 (Buenos Ayres); *ib.* 175, 570 (Peru); Nom. Neotr. 1873, 119 (part).

* The publication of this name was the result of an unfortunate oversight of the printers in correcting from the last revised proof-sheets.—R. R.

Urubitinga (Autenor) unciuncta RIDGW. Pr. Boston Soc. N. H. May, 1873, 93.

Parabuteo unciunctus RIDGW. B. B. & R. Hist. N. Am. B. iii, 1874, 249, 250.

Erythrocuema unciuncta SHARPE, Cat. Acc. B. M. 1874, 85.

Polyborus tenuis TSCHUDI, Arch. f. Naturg. 1844, 263; Fauna Per. 1844, pl. 1.

Hab.—South America generally, south to Chili and Buenos Ayres.

β. harrisi, Aud.

Falco harrisi AUD. B. Am. 1831, pl. cccxcii; Orn. Biog. v, 1849, 30.

Butco harrisi BONAP. Comp. List, 1838, 3.—AUD. Synop. 1839, 5.—DE KAY Zool. N. Y. ii, 1844, 11.

Craxirex harrisi COUES, Pr. A. N. S. Phil. 1866, 49.—COOPER, Orn. Cal. i, 1870, 493.

Buteo unciunctus var. *harrisi* RIDGW. Coues' Key, 1872, 215.—COUES, Check List N. Am. B. 1873, 69, No. 348.—LAWR. Mem. Boston Soc. N. H. ii, 1874, 302 (N. W. Mexico).

Autenor unciunctus var. *harrisi* RIDGW. B. B. & R. Hist. N. Am. B. iii, 1874, 250.

Parabuteo unciunctus var. *harrisi* RIDGW. B. B. & R. Hist. N. Am. B. iii, 1874, 250.

Craxirex unciunctus CASS. B. N. Am. 1858, 46 (not of Bonap. 1854, ex Temm. 1820).—BAIRD, Cat. N. Am. B. 1859, No. 46.—DRESSER, Ibis, 1865, 329.—COUES, Pr. A. N. S. Phil. 1866, 13.—SALVIN, P. Z. S. 1867, 158 (Veragua).

Erythrocuema unciuncta SHARPE, Cat. Acc. B. M. 1874, 85 (in part).

Hab.—Middle America, from the southern border of the United States (Louisiana to Lower California) south to Panama (?).

Wing, 11.65–14.60; tail, 9.00–11.00; culmen, 0.82–1.10; tarsus, 2.78–3.75; middle toe, 1.52–2.00. *Adult*:—General color brownish-black or blackish-brown, uniform or slightly variegated by light spotting; the lesser wing-coverts and tibiae deep rufous or chestnut. Tail black; the end and base white, as are also the tail-coverts. *Young*:—Plumage greatly variegated. Above blackish-brown, the feathers edged with rusty; head and neck streaked with pale ochraceous. Lower parts pale ochraceous or yellowish-white, the breast and abdomen with longitudinal ovoid spots of blackish; tibiae with transverse bars of dark rusty; lower tail-coverts with black shaft-streaks. Lesser wing-covert region only washed with rufous. Tail grayish-brown, whitish at the tip, and crossed by narrow bands of dusky.

α. unciunctus.

Adult with the blackish more or less broken up by lighter spotting or streaking; tibiae barred rufous and ochraceous. Wing, 11.65–14.60; tail, 9.00–10.50; culmen, 0.82–1.02; tarsus, 2.78–3.40; middle toe, 1.52–1.85. *Adult (?) female* (No. 48814, Santiago, Chile):—Prevailing color brownish-black, broken by white streaks on the cheeks and throat, white borders and concealed spots on the abdomen, and ochraceous edges to feathers of the central portion of the breast. Remiges with a narrow terminal border of white. Wing-coverts mostly deep ferruginous-rufous, nearly uniform and almost chestnut in tint on the lesser coverts, which have dusky shaft-streaks, but much broken by a dusky spotting on the middle and greater coverts, where the central portion of each feather is uniform blackish. Lining of the wing mostly ferruginous, but this broken by white and dusky spotting. Tibiae ochraceous, irregularly barred with rusty-rufous, these bars suffused into a nearly continuous wash of the latter color on the outer surface. Upper tail-coverts and crissum immaculate white. Tail uniform black, the extreme base and a sharply-defined terminal band, about one inch broad, pure white; the inner webs of the feathers more or less mottled with grayish-brown, the white at the base extending farther from the roots of the feathers. Inner webs of primaries white anterior to their emargination, relieved by indications of dusky bars, the remaining portion grayish-dusky, with irregular or broken blackish bars. *Young* (No.

48815, ♀, Santiago, Chile):—Above chiefly brownish-black, but this broken by a reddish-fulvous streaking on the head, neck, and back, and by a coarse irregular spotting of the same on the greater wing-coverts; all other feathers more or less tipped or margined with the same. Remiges dusky grayish-brown, with indistinct narrow bars of dusky. Upper tail-coverts immaculate white. Tail dusky grayish-brown, the extreme base pure white, and the tip fulvous-white, crossed by very numerous (about nineteen) narrow indistinct bars of dusky; their inner webs more whitish, with the bars better defined. Lower parts ochraceous, the throat, jugulum, breast, sides, and abdomen with longitudinally ovate or tear-shaped spots of brownish-black, largest on the breast. Tibiæ marked with faint, small, and irregular bars of brown. Crissum immaculate white.

An adult from Guayaquil (No. 54935) has the blackish more continuous, but still conspicuously streaked with white on the throat; the tibiæ are pale ochraceous, thickly barred with rusty; the terminal band of the tail is less than an inch wide, and is tinged with gray. Nos. 13907, female, and 13908, male, from Chile, differ in having the black much broken, both above and below, but chiefly on the lower surface, with white spottings and streaks; the throat and cheeks white, streaked with dusky. These two specimens correspond quite closely with Temminck's plate of the adult.

β. harrisi.

Adult with the blackish continuous and uniform. Wing, 12.35–14.50; tail, 9.80–11.00; culmen, 0.90–1.10; tarsus, 3.15–3.75; middle toe, 1.65–2.00. *Adult female* (No. 12230, Cape St. Lucas, Lower California):—Prevailing color uniform sooty-black, deepest on the tail, the rump somewhat tinged with chestnut. Lesser wing-coverts, lining of the wing, and the tibiæ plain, unbroken, rich chestnut-rufous, middle wing-coverts similar, the middle portion of each feather blackish; greater coverts of the under side with black shaft-streaks. *Under surface of primaries* (inner webs) *plain sooty-black*. Upper tail-coverts and crissum pure white, the former with blackish shaft-streaks. Tail deep black, the extreme base and a broad terminal band pure white. Wing, 14.50; tail, 10.00; tarsus, 3.25; middle toe, 2.00. [No. 42559, Iztlan, W. Mexico, is similar to the preceding but not so black, the dark color inclining to a deep dark sepia, unbroken however, and the rump chestnut, with the feathers dusky centrally. White of upper tail-coverts without dusky shaft-streaks. Wing, 14.60; tail, 10.30; tarsus, 3.25; middle toe, 1.95.] *Immature male* (No. 50763, Tepic, W. Mexico):—Above similar to the adult but less uniform, the nape and back relieved by rusty-fulvous edges to the feathers, the sides of the head and neck more thickly streaked with the same. Lower parts ochraceous, the throat thickly streaked with black; the breast, sides, and abdomen with longitudinally ovate or tear-shaped spots of black, largest on the breast. Tibiæ marked with narrow bars of dusky brown and rusty; crissum paler, relieved only by blackish shaft-streaks. Wings as in the adult, but the rufous more broken, and the remiges more brownish. Tail as in the adult, but the terminal white narrower, less purely white and less sharply defined, the inner webs more or less distinctly barred with white, blackish, and grayish brown. “Iris chestnut-brown; cere, chin, and skin round the eye yellow.” *Immature female* (No. 15260, Fort Buchanan, New Mexico):—Similar to the preceding, but black beneath more prevalent, though irregularly broken by whitish edgings and spottings of the feathers; tibiæ more distinctly barred with rusty.

White at the base of the tail more extended and broken, next the dusky portion, with a confused mottling or spotting of grayish and dusky.

There is considerable variation in the plumage of this bird at all ages; but the variations are chiefly in details of coloration, the general style characteristic of the stage being preserved in all cases. In the adult plumage, the chief variation is in the proportionate amount of rufous on the rump, some specimens having the rump as uniformly rufous as the tibiae or lesser wing-coverts, while in others there is only a strong tinge or spotting of this color; the usual condition is to have the two colors mixed in about equal amount. The only conspicuous variation noticeable in the series under examination is in the markings of the tail-feathers, a single specimen, No. 9134, having the white of the tip extending on some feathers along the edge and thus connected with the basal white. This condition is so entirely exceptional, however, that we are led to believe that it is purely individual, and outside the normal variations which the species ordinarily presents. In the perfect adult plumage of this form, there are no white or ochraceous streaks on the throat or cheeks, nor any white other than that described above, except a faint white sprinkling, seen in some individuals, on the inner webs of the primaries.

We still separate the northern birds of this species from the southern ones, notwithstanding Mr. Sharpe and other prominent authorities unite them, for the reason that we have yet to see a single South American specimen in which the dusky and rufous of the plumage assumes that uniformity characteristic of the adult specimens from Mexico and adjoining provinces. The Chilean specimen described above is the blackest example we have seen of the former, while Temminck's plate, cited above (Pl. Col. 313), represents about the average style. The adult plumage of the South American bird seems, therefore, to correspond with the immature stage of the northern form, or that stage in which the tail is uniform black on the upper surface, with the characteristic basal and terminal white bands, the black, especially that of the lower surface, much broken by whitish edgings and spottings, and the tibiae merely barred with ferruginous. It is barely possible that we have not seen the most perfect plumage which the adult of the South American bird attains, but Mr. J. H. Gurney, than whom there is not a more competent authority, in commenting on our statement to this effect in *History of North American Birds* (vol. iii, p. 249), says that so far as he has had an opportunity of examining specimens, our observation is correct. (Cf. *Ibis*, April, 1875, p. 235.)

List of specimens in United States National Museum.

a. UNICINCTUS.

Catalogue No.	Sex and age.	Locality.	Date.	Donor.
13907	♀ ad.	Chili .....	.....	Lieutenant Gilliss.
13908	♂ ad.	do .....	.....	Do.
16572	— juv.	Bogota .....	.....	W. Evans.
32971	♀	Chili .....	.....	Verreaux.
32972	♂ juv.	do .....	.....	Do.
36667	— juv.	Amazonia .....	.....	N. H. Mus. Rio.
48813	♂	Chili (Santiago)	June, 1864	Nat. Mus. Chili.
48814	♀	do	do	Do.
48815	♀ juv.	do	July, 1864	Do.
49507	♀ juv.	Conchitas, Buenos Ayres	May, 1867	W. H. Hudson.
51111	♂ juv.	Guayaquil, Ecuador .....	.....	J. F. Reeves.
54935	— ad.	do .....	.....	Dr. Destruge.

Other specimens examined.—In mus. Philad. Acad., 9; Am. Mus., N. Y., 1; Boston Sec. 4; total, 26.

Measurements.

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. of specimens.
♂	11.65-13.15	9.00-10.10	0.82-1.00	2.78-3.40	1.52-1.75	8
	12.50-14.60	9.20-10.50	0.90-1.02	3.10-3.40	1.60-1.85	6

 β HARRIS.

Catalogue No.	Original No.	Sex and age.	Locality.	Date.	Donor.	Remarks.
4123	.....	—	Brownsville, Texas	Sept. —, 1853	Lieut. Couch	
9134	179	♂ juv.	New Mexico	Feb. 27, 1854	Lieut. Whipple	Transition pl.
9135	.....	— ad.	Oyster Point, Texas	Sept. —, 1853	Major Emory	
16929	.....	♂	Cape St. Lucas		J. Xantus	
17230	2499	—	do	Jan. 14, 1859	do	
17231	2450	♂ juv.	do	Nov. 11, 1859	do	Transition pl.
17232	3218	♀	do	Sept. 8, 1859	do	
17233	3452	♂	San José, Lower California	Dec. 18, 1859	do	
18260	.....	♀ juv.	Fort Buchanan, New Mexico		Dr. Irwin	
35059	2277	♂ ad.	Rio de Coahuylana, W. Mexico	Oct. —, —	J. Xantus	
35120	.....	♂	do	Sept. —, 1863	do	
40951	.....	♀ ad.	Chimandega, Nicaragua		F. Hicks	
40952	.....	— juv.	do		do	Transition pl.
42559	.....	— ad.	Istlan, Western Mexico		Colonel Grayson	
50763	435	♂ juv.	Tepic, Western Mexico		do	
51311	.....	♀ ad.	Mazatlan, Western Mexico	Feb. —, 1863	F. Bischoff	
51312	.....	—	do	Feb. —, 1863	do	
51313	.....	♂	do	Mar. —, 1867	do	
51314	.....	♂	do	Jan. —, 1863	do	
51315	.....	♂	do	Jan. —, 1863	do	
51316	.....	♂	do	Dec. —, 1867	do	
52327	497	♀ ad.	do		Colonel Grayson	
59507	925	—	Tehuantepec	Oct. —, 1869	Prof. Sumichrast	
59508	891	—	do	Oct. —, 1869	do	
59509	897	—	do	Oct. —, 1869	do	

Other specimens examined.—In mus. Philad. Acad., 3; G. N. Lawrence, 2; R. Ridgway, 1; total number of specimens examined, 31.

Collector's notes on United States National Museum specimens.

No. 4123: length, 17.50; extent, 37.50; eye dark brown; feet yellow; bill bluish.

No. 9134: length, 19; extent, 37.00; eye dark yellow.

No. 16929: length, 23.40; extent, 49.00.

No. 17230: length, 22.00; extent, 45.50.

No. 17231: length, 24.00; extent, 45.00.

No. 17232: length, 21.00; extent, 44.00.

No. 17233: length, 21.40; extent, 40.00.

No. 35120: length, 23.00.

No. 51311: eye brown.

Measurements.

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. of specimens.
♂	12.35-13.75	9.80-10.20	0.90-0.95	3.15-3.20	1.65-1.70	8
	14.25-14.50	10.80-11.00	1.05-1.10	3.40-3.75	1.90-2.00	6

GENUS SPIZIASTUR, LESSON.

"*Spizastur* LESS.", GRAY, List Gen. Subgen. 1843, 3. Type, *Falco atricapillus* TEMM.
S. melanoleucus (VIEILL). *Spiziasur* KAUP, 1851.—SHARPE, Cat. Acc. Brit. Mus.
 1874, 258.

CH.—Similar to *Spizaëtus*, but primaries longer, bill more compressed, toes and claws much longer, and head without an occipital crest. Bill much compressed, the tomia without distinct sinuations; anterior outline of the cere simply convex. Nostril oval, vertical, near the middle of the cere. Tarsus about one and a half times the length of the middle toe; lateral toes nearly equal, but the outer perceptibly the longer, reaching to about the middle of the subterminal phalanx of the middle toe; posterior toe longer than the outer. Claws excessively graduated, the first and second being extremely long, exceeding their digits, the outer small, less than two-thirds its digit, the third being intermediate in length; their form normal. A distinct web between outer and middle toes. Tarsi densely feathered all round, only the lower joint exposed. Lores densely clothed with short, stiff bristles. Primaries exceeding the secondaries by about one-fourth the length of the wing; third, fourth, fifth, and sixth quills nearly equal, and longest, but the fourth and fifth usually exceeding the others; first shortest; inner webs of the outer five distinctly emarginated, the sixth faintly sinuated; secondaries, 14. Tail long, about two-thirds the wing, even, or very slightly rounded; composed of 12 feathers, the basal half overlaid by the coverts.

SPIZIASTUR MELANOLEUCUS.

Buteo melanoleucus VIEILL. N. D. iv, 1816, 42.—CUVIER, Règ. An. 1817, 336.—VIEILL. & OUD. Gal. Ois. 1825, pl. 14.

Spizaëtus melanoleucus BONAP. Consp. i, 1850, 28; Rev. Zool. 1850, 448.—STRICKL. Orn. Syn. i, 1855, 73.—SCHL. Mus. P.-B. Astures, 1862, 14.—LAWR. Ann. Lyc. N. Y. ix, 1868, 132 (Costa Rica).—GRAY, Hand List, i, 1869, 12.—SCHL. & SALV. P. Z. S. 1864, 369 (Isth. Panama); Nom. Neotr. 1873, 120.

Spizaëtus (*Spizastur*) *melanoleucus* RIDGW. Pr. Boston Soc. N. H. 1873, 71.

Spizastur melanoleucus SHARPE, Cat. Acc. B. M. 1874, 258.

Falco atricapillus TEMM. Pl. Col. i, 1823, pl. 79.

Morphnus? *atricapillus* VIG. Zoöl. Journ. i, 1824, 325.—STEPHENS, Zoölogy, xiii, 20.

Astur atricapillus LESS. Man. i, 1828, 93.

Spizastur atricapillus GRAY, List Gen. 1841, 3.—KAUP. Mus. Senck. iii, 1845, 259.

Spizaëtus atricapillus GRAY, Gen. 1845, 14.—BONAP. Consp. Av. i, 1850, 28.—BURM. Th. Bras. 1856, 65.—PELZ. Orn. Bras. 1871, 4.

"*Spizastur atriceps* KAUP, Mus. Senck. iii, 1845, 259" (*vide* STRICKLAND, l. c.).

Hab.—Central Tropical America, south to Brazil, north to Guatemala. Guiana (MUS. BOSTON SOC.); Costa Rica (NAT. MUS.).

Wing, 14.30–16.40; tail, 9.50–11.00; culmen, 0.95–1.20; tarsus, 2.65–3.25; middle toe, 1.95–2.25. *Adult*:—Upper parts uniform deep black; tail deep black, crossed by four broad bands of brownish-gray, and narrowly tipped with paler. Head, neck, and entire lower parts pure white; lores and eyelids deep black, and occiput spotted with the same. Tibiæ sometimes sparsely barred with black. Cere and rictus deep orange-red in life; bill black.

List of specimens examined.—In Nat. Mus., 1 (No. 51302, La Palma, Costa Rica, Aug. 10, 1867: José C. Zeledon); Mus. Philad. Acad., 3; Boston Soc. N. H., 2; G. N. Lawrence, 1: total, 7.

GENUS URUBITINGA, LESSON.

Urubitinga LESSON, Rev. Zool. 1839, 132. No type!—LAFRESNAYE, D'Orb. Dict. d'Hist. Nat. ii, 1842, 786. Type, *Falco urubitinga* GMEL.

Hypomorphnus CABANIS, Weigun. Archiv, 1844, 263. Type, *H. gundlachi* CABAN.

Hypomorphnus GRAY, 1845. Same type.

CH.—Outstretched feet reaching to or beyond the end of the tail; tarsus more than twice the middle toe, which is not conspicuously longer than the lateral toes, the scutellation buteonine. Secondaries greatly developed, reaching nearly or quite to the end of the longest primaries. Remiges 24–25; rectrices 12. Superior tomium of the bill with a distinct lobe; anterior outline of the cere doubly curved, convex above, concave or straight and oblique below. Nostril very broadly oval, or nearly circular (if the former, of horizontal direction), showing, normally, a distinct cartilaginous tubercle. Outer toe more than three-fourths as long as the middle one, and decidedly, though not conspicuously, longer than the inner; posterior toe decidedly shorter than the inner. Claws normal in shape and graduation, the longest one (first) not longer than its digit. Tarsal scutellæ arranged in continuous single series of large transverse plates on the front and posterior faces, and those of the toes uninterrupted nearly or quite to the base. Plumage generally full, the remiges well developed, especially the secondaries, which extend nearly or quite to the ends of the primaries. Under surface of the wing very concave; inner webs of the primaries very shallowly sinuated, the number on which the cutting is apparent rather indefinite, but apparently varying from six to seven. Third, fourth, fifth, and sixth quills longest, the fourth or fifth usually exceeding the others. Tail moderate, more than half the wing, even, or very slightly rounded.

The characters of this genus are quite difficult to define, but consist chiefly in those enumerated above. The genus is most closely related to *Leucopternis*, which, however, we consider distinct, at least subgenerically, on account of important differences to be noticed under the head of that genus. The pterylosis of *Urubitinga* presents many points of resemblance to that of the *Morphni* (*Thrasaëtus* and *Morphnus*), and it is likely that the genus is in other respects intermediate between the latter group and the true *Buteones*; the resemblance is especially great in the wings, the secondaries having a similar excessive development, while the shallow sinuation of an indefinite number of primaries is another point of agreement. According to Nitzsch, the pterylosis is peculiar on account of the narrowness of all the tracts; the jugular portion of the inferior tract with a very narrow inner branch, and united to the pectoral stem by a single row of feathers, the outer branch quite free, but narrow, with a hook of a single row of feathers at its extremity; the main stem somewhat dilated at its extremity. The lumbar tract is perceptible.

Besides the *Falco urubitinga* of Gmelin and the *Falco anthracinus* of Lichtenstein, the *Asturina schistacea* of Sundevall may be regarded as a typical member of this genus. There are also two other species which probably belong here, viz, *Hypomorphnus gundlachi* Cabanis and *Leucopternis plumbea* Salvin; but, as we have seen neither of these species, we include them here provisionally only. The former of these is almost certainly a true *Urubitinga*, since it is so nearly related to *U. anthracina* that Mr. Sharpe considers them identical specifically.

URUBITINGA ZONURA.

Aquila brasiliensis BRISS. Orn. i, 1760, 445.

Urubitinga brasiliensis BONAP. Consp. 29.—PELZ. Orn. Bras. 1871, 2, 393.

Morphnus brasiliensis STRICKL. Orn. Syn. i, 1855, 24.

Falco urubitinga GMEL. S. N. 1788, 265.—LATH. Ind. Orn. 22; Gen. Hist. i, 236.—DAUD. Tr. Orn. ii, 57.—SHAW, Zoöl. vii, 63.—TEMN. Pl. Col. i, 1825, pl. 55.

Aquila urubitinga SPIX, Av. Bras. i, 1824, pl. 1^b.

Morphnus urubitinga CUV. Règ. An. ed. 2, i, 1829, 330.—VIG. Z. J. i, 323, 327.—

STEPH. Zoöl. xiii, pt. 2, 17.—LESS. Man. i, 90; Tr. 51.—NITZSCH. Pterylog. 87.—

GRAY, Gen. 2; ed. 2, i, 1845, 3; fol. sp. 1, pl. 7, f. 6; List B. Brit. Mus. 21.—

D'ORB. Voy. Am. MÉR. Ois. 1847, 84.—SCL. P. Z. S. 1857, 226 (S. Mexico).

Hypomorphnus urubitinga CABAN. & TSCH. Consp. Av. Weigm. Ar. 1844, 263; Fauna

Per. 1844, 16, 84.—LAFR. R. Z. 1849, 99.—R. SCHOM. Brit. Guian. 1848, 740.—

BURM. Thiere Bras. ii, 1856, 42; P. Z. S. 1863, 633 (Mendoza, Buenos Ayres).

Harpyia urubitinga SWAINS. Class. ii, 1837, 208.

Asturina urubitinga SCHLEG. Mus. P.-R. Asturinae, 1862, 6; Revue, 1873, 103.

Aquila picata SPIX, Av. Bras. i, 1824, pl. 1^b (juv.).

Falco zonurus SHAW, Zoöl. vii, 1809, 62.

Urubitinga zonura SCL. Trans. Zoöl. Soc. 1858, 262.—SHARPE. Cat. Acc. Brit. Mus.

1874, 213.—LAWR. Ann. Lyc. N. Y. vii, 1861, p. — (New Granada); Mem. Bost.

Soc. N. H. ii, 1874, 302 (Mazatlan; biog. notes).—RIDGW. Pr. Boston Soc. N. H. 1873, 62.

Falco longipes ILLIG. in Mus. Berl. undc—

Urubitinga longipes BON. Consp. i, 1850, 29.

Pandion fulvus VIEILL. N. D. iii, 1816, 163.

Spizaetus niger VIEILL. N. D. xxxii, 1819, 57.

Spizaetus ater VIEILL. *ib.* 58.

Urubitinga MARCGR. Hist. Bras. 1648, 214.

L'Aigle du Brésil BRISS. Orn. i, 1760, 445.

Del Chorreado, Del Pintado, and Del Negro AZARA, Pax. Par. i, 1802, 88, 92, 93.

Aigle noir huppé d'Amérique BUFF. Ois. ed. Sonn. ii, 29, pl. 6.

Brazilian Eagle LATH. Synop. i, 1781, 41, sp. 20.

Hab.—Tropical America, south to Paraguay and the Argentine Republic, north to Vera Cruz and Mazatlan.

Wing, 15.00–18.00; tail, 10.50–12.00; culmen, 1.10–1.35; tarsus, 2.45–4.80; middle toe, 1.70–2.10. Bill elongated and compressed, the tip well produced; upper outline of the cere nearly parallel with the lower. Primaries decidedly longer than the secondaries, the inner webs of the outer five or six slightly sinuated; fourth or fifth quill longest; first shorter than the ninth. Tail nearly even, but the lateral pair slightly shortest. *Upper tail-coverts white.* *Adult*:—Uniform black, with more or less of a plumbeous cast, especially on the neck, jugulum, and back; remiges indistinctly banded with dark plumbeous. Upper tail-coverts, end of tail, and one or two wide bands across the tail, pure white; tibiae and lining of the wing sometimes barred with white. “Iris brown; cere, lores, and feet yellow.” *Young*:—Above blackish-brown or brownish-black, variegated with broad ochraceous edgings to some of the scapulars. Wings dusky brown, all the larger coverts and the remiges indistinctly banded with black. Head, neck, and lower parts light ochraceous, each feather with a sharply-defined medial streak of black; these streaks lanceolate on the head and neck, more cuneate on the jugulum, and on the abdomen and side sometimes suffused into a prevalent irregular spotting. Tibiae transversely barred with black and light ochraceous. On the head, the dark streaks are very minute, or nearly absent, in a conspicuous, broad, superciliary stripe, and on the cheeks and throat; while they blend from the posterior angle of the eye back along the upper edge of the auriculars, thence down the side of the neck, and across the jugulum, forming an interrupted collar of cuneate streaks. Under surface of the remiges trans-

versely banded with ochraceous. (I.) Tail black, tipped with whitish, and crossed by eight to ten narrow bands of clouded ashy and ochraceous, the former prevailing on the outer, and the latter on the inner webs (II.) Prevailing color of the tail white, with a grayish-brown, mostly longitudinal, mottling, crossed near the end by a broad zone of black about 2.00–2.50 wide, the tip again white. The whitish portion crossed by five or six irregular, narrow, zigzag bands of black, these often so irregular as to hardly appear as bands when the tail is closed.

Hab.—South and Middle America, from Buenos Ayres and Paraguay to Mazatlan and Vera Cruz.

The South American and Middle American specimens of this species are so easily distinguished that they seem to be separable as well-marked geographical races, characterized as follows:—

- α. Tail white, with a basal narrow band and wide subterminal zone of black. Tibiæ and lining of wing without white bars. Wing, 16.50–18.00; tail, 11.75–12.00; culmen, 1.30; tarsus, 4.90–5.00; middle toe, 1.90–2.10. *Hab.*—Eastern South America, south to Buenos Ayres and Paraguay α. *zonura*.
- β. Tail black, with a medial zone and terminal and basal narrow bands of white. Tibiæ and lining of the wing with conspicuous white bars. Wing, 15.15–16.50; tail, 10.50–11.50; culmen, 1.10–1.35; tarsus, 4.30–4.85; middle toe, 1.60–1.90 *Hab.*—Middle America, north to Vera Cruz, Tehuantepec, and Mazatlan.....β. ———?

In the northern form, the black appears to be constantly of a more plumbeous cast, the neck, back, and jugulum decidedly glaucous; the bill is also not so deep, its length being about the same; the plumbeous bands on the remiges are also more distinct. The subterminal black zone of the tail is from 3 to 4 inches in width, the white one just anterior to it 1.50 to 1.80; the next black one about the same width; and the basal or sub-basal white one a little wider than the terminal band of about half an inch in width. In the southern form, the terminal white and subterminal black are about the same widths as in the northern style, but the white zone across the middle is 4.00 to 4.50, instead of only 1.50 to 1.80 in breadth, while the black just preceding it is narrow and either basal or merely mottled with whitish at the roots.

There are no young specimens of the southern race in the National collection.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	Date.	Donor.
20931	41	.....	Vermejo River, Arg. Rep. ....	.....	Capt. T. J. Page, U. S. N.
29304	.....	♂ —	Colima, Western Mexico	Feb. —, 1864	J. Xantus.
30239	.....	♂ juv.	Mirador, Eastern Mexico	Nov. —, 1864	Dr. C. Sartorius.
30900	.....	.....	Rio Tupila, Western Mexico....	Apr. —, —	J. Xantus.
32969	.....	.....	Guatemala .....	.....	Verreaux.
33204	24	♂ —	Costa Rica (San José)	Jan. 28, 1864	J. Carmiol.
34062	.....	.....	Realejo, Central America	Feb. —, —	Capt. J. M. Dow.
37870	153	♂ —	Yucatan (Merida)	Feb. 8, 1865	Dr. A. Schott.
42137	.....	.....	Tehuantepec (Protrero)	Feb. —, 1866	Prof. F. Sumichrast.
50767	759	.....	Mazatlan Western Mexico .....	.....	Col. A. J. Grayson.
52764	.....	.....	do .....	.....	Do.
59002	10	— ad.	Paraguay .....	.....	Capt. Page.
66328	20	— juv.	Costa Rica (Lipurio)	— —, 1873	Prof. W. M. Gabb.
67282	11 ^c	.....	Tehuantepec	Sept. —, 1872	Prof. F. Sumichrast.
57859	552	— juv.	do	Feb. 2, 1869	Do.
59510	923	♂ ad.	do	Oct. —, 1869	Do.

Other specimens examined.—In mus. Philad. Acad., 9; Boston Soc., 4; Am. Mus., N. Y., 1; G. N. Lawrence, 3; total, 32.

Measurements.

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. of specimens.
♂	15.00-16.30	10.50-11.00	1.25	4.40-4.60	1.90-1.95	6
♀	16.00-17.50	11.10-12.00	1.20	4.60-4.70	1.85-2.10	4

URUBITINGA ANTHRACINA.

"*Falco anthracinus* LICHT.", NITZSCH, Pterylography, 1840, 83.—LAFR. Rev. Zool, 1848, 240
Morphnus anthracinus STRICKL. Orn. Syn. i, 1855, 25.—SCL. P. Z. S. 1857, 210 (Orizaba).

Urubitinga anthracina LAFR. Rev. Zool. 1848, 241.—SCL. Trans. Zoöl. Soc. 1858, 262; P. Z. S. 1858, 294 (Oaxaca); *ib.* 1868, 629 (Venezuela); *ib.* 1870, 838 (coast of Honduras).—SCL. & SALV. Ibis, 1859, 216; P. Z. S. 1864, 369 (Panama); Nom. Neotr. 1873, 119.—LAWRENCE, Ann. Lyc. N. Y. vii, 1861, p. — (New Granada); *ib.* viii, 1865, 185 (Nicaragua); *ib.* ix, 1868, 133 (Costa Rica); Mem. Boston Soc. N. H. ii, 1874, 302 (Mazatlan; biog. notes).—SALVIN, P. Z. S. 1870, 215, (Veragua); *ib.* 838 (Honduras).—PELZ. Orn. Bras. 1871, 394.—RIDGW. Pr. Boston Soc. N. H. 1873, 63.—SHARPE, Cat. Acc. Brit. Mus. 1874, 215.

Asturina anthracina SCHLEG. Mus. Pays-Bas. Asturinæ, 1862, 8.

Buteo anthracinus GRAY, Hand List, i, 1869, 9.

Morphnus mexicanus DU BUS, Bull. Ac. Brux. xiv, 1847, pt. 2, 102.—GRAY, Gen. App. 1.—LAFR. Rev. Zool. 1848, 239.

Urubitinga mexicana BONAP. Rev. Zool. 1850, 488.—CASSIN, Pr. Ac. Nat. Sc. Philad. xii, 1860, p. — (Panama).

Hab.—Tropical America, from Brazil, Guiana, and New Granada northward as far as the southern border of the western United States. Arizona (breeding) BENDIRE and HENSHAW.

Wing, 13.15-15.80; tail, 7.90-11.00; culmen, 1.00-1.10; tarsus, 3.00-3.50; middle toe, 1.60-1.80. Third and fifth quills longest, the first intermediate between the eighth and tenth; outer four with the inner webs slightly sinuated. Tail very slightly rounded, the outer pair of feathers just appreciably the shortest. *Uppertail-coverts black, barred with white.* *Adult*:—General color uniform black, with a strong glaucous cast on the back, neck, and breast; upper tail-coverts narrowly tipped with white; tail deep black, narrowly tipped with white, white at the extreme base and crossed at about the middle by a broad, continuous zone of the same, of variable width. Inner webs and the concealed portion of the outer webs of the secondaries usually (but not always) mottled with rusty ochraceous; terminal half of the bill plumbeous-black; the basal half, the cere, and the rictus yellow; tarsi and toes yellow; claws plumbeous-black. *Young*:—Above brownish-black, more or less variegated with ochraceous and sometimes with rusty on wing-coverts and scapulars; wings indistinctly banded with dark grayish-brown; head, neck, and lower parts ochraceous-white, with longitudinal stripes of black; tibiae transversely barred with the same; tail crossed with about seven bands of black and white, the bands of each individual feather oblique; the relative width of the two colors varying with the individual, but the subterminal black band always about twice as broad as the others. Inner webs of secondaries strongly tinged with rufous. Upper tail-coverts white, more or less barred with black. On the head and neck, the streaking is not uniform, but the areas where the light or dark markings predominate respectively are as follows: the gular region, cheeks, and supraoral region are whitish, with fine streaks; but the pileum and nape, upper half of the auriculars, and maxillary stripe extending across the jugulum are nearly uniformly black, in consequence of the enlargement and blending of the streaks. "Iris brown; cere and base of bill olive-yellow or greenish; feet yellow."

The white tail-bands vary considerably in width with the specimen; but we cannot discover any rule of difference according to locality or

sex. The extremes are represented by No. 57845, Tehuantepec, Mexico, and No. 40394, Nicaragua. In the former, the middle band is less than an inch wide, while the terminal one is so abraded that only traces of it are discernible on some feathers; on the inner webs, there are three indistinct narrower bands anterior to the main one, but of these there is no trace on the outer webs. In the other specimen, the main tail-band is over two inches wide on the intermediae, gradually narrowing to about one inch on the lateral pair; anterior to this, there are two or three narrow, badly-defined, white bands on the inner webs, as in the Nicaragua specimen; the terminal band is about half an inch wide.

As in *U. sonura*, there is much difference in the amount of glaucous or chalky cast to the plumage in different individuals, but it is nearly always very conspicuous in certain lights. There is also much variation in the amount of the rusty spotting on the secondaries, this sometimes showing conspicuously on the outer webs, even in the closed wing (as in Nos. 17785 and 54030), while again (as in most Central American and Mexican specimens) it is almost wanting even on the inner webs.

Many adult specimens have white filamentous attachments to the tips of the shafts of the tibial plumes, and feathers of the chin, throat, and cheeks, like those observable in the type of *Onychotes gruberi*.

There are no specimens from south of Panama now before us for comparison with northern ones, but examples from the Isthmus are similar to those from Mexico.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	Date.	Donor.
17785	285	♂ ad.	Rio Atrato, New Granada.....		Dr. A. Schott.
22405	156	.....	Punta Arenas, Costa Rica.....	July 3, 1858	O. Salvin.
27101	41	.....	Mirador, Eastern Mexico.....		Dr. C. Sartorius.
29303	138	♂ ad.	Colima, Western Mexico.....	Feb. —, 1863	J. Xantus.
29328	.....	♂ juv.	Mazatlan, Western Mexico.....		Col. A. J. Grayson.
30411	.....	— ad.	Costa Rica.....		Dr. A. von Frantzius.
30539	.....	♂ ad.	Orizaba, Eastern Mexico.....	Mar. 14, 1863	Prof. F. Sumichrast.
30540	.....	— juv.	Acajutla, Central America.....	Mar. 11, 1863	Capt. J. M. Dow.
32970	.....	♀ juv.	Mexico.....		Verreaux.
33203	159	.....	Costa Rica (San José).....		Dr. von Frantzius.
35058	2010	♀ juv.	Rio de Coalhuayan, Western Mexico.....	Sept. —, —	J. Xantus.
40394	.....	— ad.	Nicaragua.....		Holland.
41247	.....	♂ —	Costa Rica (Angostura).....	Mar. 30, 1865	J. Carmiol.
41781	.....	♂ —	Orizaba.....	Nov. —, —	Professor Sumichrast.
42072	202	♀ —	Mirador.....		Dr. Sartorius.
50768	.....	.....	Mazatlan.....		Colonel Grayson.
50769	763	.....	San Blas, Western Mexico.....		Do.
52823	855	— juv.	Mazatlan.....		Do.
54030	.....	♂ ad.	Panama.....	— —, 1862	McLeannan.
54110	.....	— juv.	Puna Island, Guayaquil, Ecuador.....		J. F. Reeve.
57845	563	— ad.	Tehuantepec, Southern Mexico.....	Feb. 1, 1865	Prof. F. Sumichrast.
57861	515	♀ —	do.....	Jan. 25, 1869	Do.
57862	349	♂ —	do.....	Dec. 30, 1868	Do.
58777	764	.....	Mazatlan.....		Colonel Grayson.
58959	702	♀ ad.	Tehuantepec.....	May 30, 1869	Professor Sumichrast.
59003	.....	♀ —	Acajutla Central America.....	Aug. —, 1863	Captain Dow.
64950	563	— ad.	Costa Rica, (Talamanca).....	— —, 1873	Prof. W. M. Gabb.
64951	199	— ad.	do.....	— —, 1873	Do.
66329	2	♂ juv.	Costa Rica (Old Harbor).....	July 14, 1874	Do.
67283	1 ^a	♂ ad.	Tehuantepec.....	April 3, 1872	Professor Sumichrast.
67879	.....	— ad.	Costa Rica (Talamanca).....		Professor Gabb.
67880	.....	♂ ad.	do.....		Do.
67881	.....	♂ ad.	do.....		Do.
67882	.....	♀ juv.	do.....		Do.
67883	.....	♀ juv.	do.....		Do.

Other specimens examined.—In mus. Philad. Acad., 4; Boston Soc., 5; Am. Mus., N. Y., 1; G. N. Lawrence, 3; total, 48.

Measurements.

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. of specimens.
♂	13. 15-14. 90 14. 25-14. 60	7. 90- 9. 75 9. 25-11. 00	1. 00-1. 05 1. 05-1. 10	3. 20-3. 40 3. 00-3. 50	1. 62-1. 70 1. 65-1. 80	8 12

URUBITINGA SCHISTACEA.

Asturina schistacea SUND. Œfv. Af. Vet. Förh. 1849, 132.—SCHLEG. Mus. Pays-Bas, Asturine, 1862, 8.

Morphnus schistaceus SCL. P. Z. S. 1857, 226 (S. Mexico); *ib.* 261 (Upper Amazon).

Urubitinga schistacea SCL. P. Z. S. 1858, 128; Trans. Z. S. 1858, 261, pl. 58.—SCL. & SALV. P. Z. S. 1866, 198; 1867, 979.—PELZ. Orn. Bras. 1871, 2, 394.—SALV. Ibis 1872, 243.—SHARPE, Cat. B. Brit. Mus. 1874, 216.

Buteo schistaceus GRAY, Hand List, i, 1869, 9.

Leucopternis schistacea SALV. Ibis, 1872, 243.—SCL. & SALV. Nom. Neot. 1873, 119.

Falco ardesiaceus LICHT. in Mus. Berol. teste BONAP.

Hyphomorphnus ardesiaceus LICHT. Nomencl. 1854, 1.

Hab.—Northern and Eastern South America. S. Mexico (SCLATER, l. c.) Ecuador and Bogota (SALVIN); Brazil (Rio Madeira et Rio Negro, NATTERER); Bolivia (SCLATER); Peru (U. S. NAT. MUS.); Para et Cayenne (SCHLEGEL).

Wing, 9.40-11.90; tail, 5.80-7.80; culmen, 0.90-0.95; tarsus, 2.50-3.20; middle toe, 1.35-1.50. Bill comparatively short and broad, the upper outline of the cere decidedly ascending basally, and distinctly arched. Nostril nearly circular. Remiges 24; fourth or fifth quill longest, first shortest; outer five with inner webs faintly sinuated. *Adult*:—Uniform slaty plumbeous, darker on the head and primaries. Tail deep black (the extreme base dusky), with a narrow white tip, and crossed about the middle by a narrow continuous band of white, about 0.50 to 0.75 of an inch wide. Tibiæ sometimes barred, more or less distinctly, with white, and lining of the wing more irregularly variegated with the same.

Specimens examined.—In U. S. Nat. Mus., 1 (No. 55281, ♂, adult, Pebas, Peru, J. Hauxwell *); Mus. Comp. Zool., Cambridge, 1; total, 2.

APPENDIX.

(Pertaining to species probably referrible to this genus, not examined by us.)

1. URUBITINGA (?) PLUMBEA.

Leucopternis plumbea SALVIN, Ibis, 1872, 240, pl. viii.—SCL. & SALV. Nom. Neotr. 1873, 119.

Urubitinga plumbea SHARPE, Cat. Acc. Brit. Mus. 1874, 216.

“Adult (type of species).—Everywhere leaden-gray; wing-coverts and quills black, the latter with a single bar of white, somewhat shaded with ashy across the middle; tibial plumes indistinctly barred with white; under wing-coverts white; cere, orbits, and feet orange; bill and claws black. Total length 14.5 inches, culmen 1.5, wing 9.8, tail 6.7, tarsus 2.5. (*Mus. Salvin and Godman.*) *Hab.*—Ecuador and Panama.”—(SHARPE, l. c.)

This species is apparently closely related to *U. schistacea*, from which, however, it differs in smaller size and white under wing-coverts.

* “Iris yellow.”

2. URUBITINGA "GUNDLACHI".

'*Morphnus urubitinga* CUVIER", LEMBEYE, Aves de Cuba, 1850, 14, pl. iii, fig. 3.—MARCH, Pr. Ac. Nat. Sci. Philad. 1863, 3 (Jamaica).

Hypomorphnus gundlachi CABANIS, Journ. für Orn. 1854, pl. lxxx.—BREWER, Pr. Boston Soc. N. H. vii, 1860, p. — (Cuba).—? FINSCH, P. Z. S. 1870, 554 (Trinidad).—GUNDL. Journ. für Orn. 1871, 365.

? "*Astur unicinctus*" LÉOT. Ois. Trinidad, 1866, 44.

Urubitinga anthracina (part) SHARPE, Cat. Acc. Brit. Mus. 1874, 215.

Hab.—Cuba. (Also Jamaica and Trinidad?).

This bird has been referred by Mr. Sharpe to *U. anthracina*, but we think without sufficient reason for so doing. It seems to be really a good species, but quite nearly related to the continental one. According to Dr. Finsch (*l. c.*) "the whole plumage is dark brownish-black; the feathers on the upper part of the interscapulum are rufous at the base; the upper and under tail-coverts are margined narrowly with white; the tail has a broad white cross-band, above this is another much narrower and not quite complete, a third, still narrower, and ill-defined, is placed at the base and hidden by the tail-coverts; the tail-feathers are tipped with white; the under surface of the wings shows a white space formed by the white basal third of the first four primaries, but this white is speckled very minutely with grayish-black, as in *H. anthracinus*; the secondaries bear in the middle portion of the inner web six or seven cross-bands of pale rufous-brown, somewhat ill-defined, and mixed and washed with dark brown, giving a somewhat marmorated appearance." He adds that it is "closely related to *H. anthracinus* Licht., but may be easily distinguished by the two white bands on the base of the tail, besides the white middle cross-band."

The difference in the markings of the tail are quite sufficient to separate this bird from *U. anthracina*, at least as a geographical race, since of the very numerous individuals we have examined not one had any white bands across the tail anterior to the middle zone, other than faint indications, usually on the inner webs, in a very few exceptional cases. It seems, however, to be scarcely distinct specifically, but the descriptions are hardly concise enough to settle the question.

GENUS LEUCOPTERNIS, KAUP.

Dacalium VIGORS, 1824 (not of Savigny, 1809). [*Fide* G. R. Gray.]

Leucopternis KAUP, Isis, 1847, 210. Type, *Falco melanops* TEMMINCK.

Pseudastur BLYTH, Cat. Birds Mus. Asiat. Soc. Bengal, 1849, 24. Type, *Falco lacernulatus* TEMM.

CH.—Similar to *Urubitinga*, but tarsus not more than twice as long as the middle toe; inner webs of only four or five outer primaries cut (the cutting being a distinct emargination); and nostril more nearly circular, and rather vertical than horizontal.

This genus is most similar to *Urubitinga*, but presents the above well-marked differences, with the addition of another and equally important one, viz, the similarity of the young and adult stages in plumage. The colors, too, are chiefly or largely white, instead of mainly black. There is also a very close relationship to *Asturina*, but in the latter the old and young stages of plumage are exceedingly dissimilar, the nostril is very decidedly horizontal, and the emarginations of the primaries end abruptly with the fourth, on which it is very distinct. The genus *Rupornis*, next in order of relationship, is still more remotely allied.

The sternum of *L. semiplumbeus* most resembles that of *Asturina plagiata* (it has not been compared with that of *A. nitida*), from which it differs mainly in smaller size. That of *Rupornis (ruficauda)* differs conspicuously in much greater posterior breadth and larger foramina, which in the other two are sometimes nearly or quite obsolete, and always small.

LEUCOPTERNIS GHIESBRECHTI.

Buteo ghiesbreghti DUBUS, Esq. Orn. 1843, pl. 1.—GRAY, Gen. fol. sp. 18.—STRICKL. Orn. Syn. i, 1855, 36.—SCL. P. Z. S. 1857, 227 (Southern Mexico).—SCL. & SALV. Ibis, 1859, 217.—LAWR. ANN. N. Y. Lyc. vii, 1861, 289.—SALV. P. Z. S. 1867, 153 (Veragua).—GRAY, Hand List, i, 1869, 8.—SUMICHRIST, Mem. Bost. Soc. N. H. i, 1869, 560 (Vera Cruz, hot reg.).

Leucopternis ghiesbreghti BONAP. R. Z. 1850, 481; Consp. 19.—SCL. & SALV. Ex. Orn. 1868, 121; Nom. Neot. 1873, 119.—SALV. P. Z. S. 1870, 250; Ibis, 1872, 242.

Tachytiorchis ghiesbreghti BON. C. R. xli, 1855, 651.

Asturina ghiesbreghti SCHL. Mus. P.-B. *Asturina*, 1862, 11.

Urubitinga ghiesbreghti SHARPE, Cat. Acc. B. M. 1874, 217.

Hab.—Middle America, from Panama to Mirador.

Wing, 12.00–15.25; tail, 8.50–9.50; culmen, 1.05; tarsus, 2.80–3.65; middle-toe, 1.50–1.70. Fourth or fifth quills longest; first shorter than seventh, sometimes shortest. Almost entirely pure white; a broad zone across the tail near its end, and a portion of the primaries, primary-coverts, and alulae deep black. *Adult*:—Basal half or more of the primaries white; no bars on the wing. *Young*:—Primaries black nearly to the base, or else the white portion barred with black: wing-coverts more or less barred with black on the lower feathers. Lor al bristles and streak behind the eye black. In the youngest specimens, the black portion of the primaries barred with paler.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	When collected.	From whom received.
33602	2231	.....	Guatemala	— —, 1860	O. Salvin.
42123	198	♂ ad.	Mirador, Mexico .....	.....	Dr. Sartorius.
50872	.....	— ad.	do .....	.....	Do.
54022	128	.....	Panama .....	.....	McLeannan.
54023	.....	♂+♀	do .....	.....	Do.

Other specimens examined.—In mus. Philad. Acad., 2; Am. Mus., N. Y., 1; G. N. Lawrence, 2; total, 10.

Measurements.

Sex.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	No. of specimens.
♂	12.00 14.25-14.85	9.25 9.25-9.50	1.05 1.05	2.85 3.30-3.40	1.55 1.60-1.65	1 2

LEUCOPTERNIS PALLIATUS.

Buteo polionotus GRAY, List Accip. 1844, 17; (no description!); Hand List, i, 1869, 8.—

KAUP, Isis, 1847, 212.—STRICKL. Orn. Syn. i, 1855, 37.

Leucopternis polionota, KAUP, Isis, 1847, 212.—BONAP. Consp. i, 19.

Falco palliatus NATT. MS. unde —

Leucopternis palliata PELZ. Sitz. Ak. Wien, xliv, 1861, 11; Verh. Zool.-Bot. Ges. Wien, 1862, 141, 184; Ueb. Falk. 1862, 7 (Brazil); Orn. Bras. 1871, 3.—SCL. & SALV. Ex. Orn. vii, 1868, pl. xlix; Nom. Av. Neotrop. 1873, 119.—SALV. Ibis, 1872, 242.

Urubitinga palliata SHARPE Cat. Acc. B. M. 1874, 218.

Asturina melanonota SCHL. Mus. P.-B. Asturinæ 1862, 10, (not of VIEILL.!); Rev. 1873, 103.

Hab.—Southeastern Brazil (SCL. and SALV.); Maceo, Amazonia (MUS. COMP. ZOÖL., No. 7219).

Wing, 14.25-16.50; tail, 8.00-9.00; culmen, 1.05; bill from tip to rictus, 1.60-1.80; tarsus, 3.50-3.80. *Adult*:—Head, neck, entire lower parts, and terminal one-third to one-half the tail continuous pure white; upper parts (except head and neck), including basal half or two-thirds of the tail, dark plumbeous or plumbeous-black; scapulars, secondaries, and inner primaries tipped with white; dorsal feathers transversely variegated with white beneath the surface; inner webs of primaries and rectrices pale ashy or white, transversely barred with darker.

“Cere pale yellow; feet pale orange-yellow; claws black; iris not very dark brown.”—(NATTERER, *vide* SHARPE, *l. c.*)

LEUCOPTERNIS LACERNULATA

Falco lacernulatus TEMM. Pl. Col. i, 1827, 437.

Buteo lacernulatus CUV. Règ. An. ed. 2, i, 1829, 337.—LESS. Tr. Orn. 82.—GRAY, Gen. fol. sp. 16; List B. Brit. Mus. 17.—STRICKL. Orn. Syn. i, 1855, 34.

Leucopternis lacernulata BONAP. Consp. i, 1850, 19.

Urubitinga lacernulata SHARPE, Cat. Acc. B. M. 1874, 218.

Falco skotopterus MAX. Beitr. iii, 1830, 204.

Buteo scotopterus BURM. Syst. Ueb. ii, 51; Thiere Bras. ii, 1856, 51.—GRAY, List B. Brit. Mus. 1848, 38; Hand List, i, 1869, 8.—STRICKL. Orn. Syn. i, 1855, 34.

Leucopternis scotopterus KAUP, Contr. Orn. 1850, 69.—PELZ. Verh. Zoöl.-Bot. Ges. Wien, 1862, 19; Orn. Bras. 3.—SCL. & SALV. Ex. Orn. 1868 (syn. and ch. under text of *L. semiplumbeus*); Nom. Av. Neotrop. 119.—SALV. Ibis, 1872, 242.—GRAY, Hand List, i, 1869, 8.

Buteo (Leucopternis) scotopterus RIDGW. Pr. Boston Soc. N. H. 1873, 64.

Asturina scotoptera SCHLEG. Mus. Pays-Bas, Asturinae, 1862, 10.

Hab.—Eastern and Northern South America, from Bahia to Bogota (SHARPE).

Wing, 11.60–12.40; tail, 6.80–7.70; culmen, 0.80–0.95; tarsus, 2.90–3.20; middle toe, 1.25–1.35. Fourth quill longest; first shortest. *Adult*.—Head, neck, and entire lower parts white, pure beneath, tinged with ash above; pileum and nape sometimes streaked with black, always (?) with dusky shafts. Above, deep slate, with concealed white spotting. Tail with the basal half dark slate, more or less barred with white on the inner webs, the terminal half white, with a rather narrow subterminal zone of slate.

Young.—"Differs from the adult in having the feathers of the head and neck mesially streaked with slaty-black, the wing-coverts tipped with white, and the white spots on the inner webs of the dorsal feathers more conspicuous."—(SHARPE, *l. c.*)

List of specimens examined.—In mus. Philad. Acad., 2 (Southern Brazil); Am. Mus., N. Y., 1; Boston Soc., 2; total, 5.

LEUCOPTERNIS ALBICOLLIS.

Falco albicollis LATH. Ind. Orn. 1790, 36; Gen. Hist. i, 250.—DAUD. Tr. Orn. ii, 112.

Buteo albicollis GRAY, List B. Brit. Mus. 1848, 38; Gen. fol. 1849, sp. 15.—STRICKL. Orn. Syn. i, 1855, 37.—TAYLOR, Ibis, vi, 1864, 180 (Trinidad and Venez.).—GRAY, Hand List, i, 1869, 8.

Leucopternis albicollis KAUP, Isis, 1847, 210; Contr. Orn. 1850, 78.—BONAP. Consp. i, 1850, 19.—PELZ. Verh. Ges. Wien, 1862, 140; Orn. Bras. 1871, 3, 395.—SCL. & SALV. Ex. Orn. 1868, 122; Nom. Av. Neotrop. 1873, 119.—SALV. Ibis, 1872, 242.—FINSCH, P. Z. S. 1870, 555 (Trinidad).

Buteo (Leucopternis) albicollis RIDGWAY, Pr. Boston Soc. N. H. 1873, 64.

Tachytriorchis albicollis BONAP. C. R. xli, 1855, 651.

Asturina albicollis SCHL. Mus. P.-B. Asturinae, 1862, 9.

Urubitinga albicollis SHARPE, Cat. Acc. B. M. 1869, 217.

Falco picatus SHAW, Zoöl. vii, pt. 1, 1809, 167.

Buteo melanotus VIEILL. N. D. iv, 1816, 472.—PUCHER. Rev. et Mag. 1850, 84.

Falco pæcilonotus TEMM. Pl. Col. 9, 1824.

Buteo pæcilonotus VIG. Zoöl. J. i, 1824, 440.—STEPH. Zoöl. xiii, pt. 2, 47.—LESS. Man. i, 104; Tr. Orn. 81.—CUV. Règ. An. ed. 2, i, 337.—GRAY, Gen. fol. 1849, sp. 19.—LÉOT. Ois. Trinid. 1866, 7.

Leucopternis pæcilonotus BONAP. R. Z. 1850, 481; Consp. 19.

White-necked Falcon LATH. Gen. Synop. Suppl. 1787, 30.

Hab.—Northeastern South America, from Northern Brazil to Trinidad and Bogota.

Wing, 13.80–14.60; tail, 8.30–9.00; culmen, 1.00–1.05; tarsus, 2.80–3.25; middle toe, 1.55. Third to fifth quill longest; first shortest. Prevailing color white, the wings and tail black; back more or less spotted with black, and pileum and nape sometimes streaked with the same. All the feathers of the wings tipped with white. Tail white at the base and end, the middle portion black, this black band of variable width, sometimes occupying the greater portion of the tail, but occasionally (in a specimen from Bogota) restricted to a subterminal band, about 2.50 inches wide.

We have not seen a sufficient number of specimens of this species to enable us to determine whether the remarkable difference in the markings of the tail observed between a Bogota specimen and others from the Amazonian district are sufficiently constant to be of geographical im-

portance. In the specimen in question, the occiput is very distinctly striped with black, instead of being narrowly streaked, or even immaculate.

List of specimens examined.—In mus. Philad. Acad., 4; Boston Soc., 2; total, 6.

LEUCOPTERNIS MELANOPS.

Falco melanops LATH. Ind. Orn. 1790, 37; Gen. Hist. i, 243.—DAUD. Tr. Orn. ii, 117.—SHAW, Zool. vii, 175.—TEMM. Pl. Col. i, 1824, 105.

Dedalion melanops VIG. Zool. J. i, 1824, 338.—STEPH. Zool. xiii, pt. 2, 25.

Astur melanops LESS. Man. i. 1828, 94.—CUV. Règ. An. ed. 2, i, 333.

Buteo melanops GRAY, Gen. fol. 1849, 12, sp. 14; List B. Brit. Mus. 37; Hand List, i, 1869, 8.—STRICKL. Orn. Syn. i, 1855, 36.

Leucopternis melanops KAUP, Isis, 1847, 210; Contr. Orn. 1850, 63.—BONAP. Consp. i, 1850, 19.—PELZ. Verh. Zool.-Bot. Ges. Wien, 1862, 140; Orn. Bras. 1871, 3, 395.—SCL. & SALV. Ex. Orn. 1868, 122; Nom. Av. Neotrop. 1873, 119.—SALV. Ibis, 1872, 242.

Buteo (Leucopternis) melanops RIDGW. Pr. Boston Soc. N. H. 1873, 63.

Asturina melanops SCHL., Mus. Pays-Bas, Asturinae, 1862, 10.

Urubitinga melanops SHARPE, Cat. Acc. B. M. 1874, 220.

Hab.—Amazonia, including Guiana; Brazil (SHARPE).

Wing, 8.30–9.10; tail, 6.00–6.50; culmen, 0.75–0.80; tarsus, 2.00–2.65; middle toe, 1.25–1.35. Inner webs of only four outer primaries distinctly emarginated; third or fourth quill longest; first shortest. *Adult*:—Head, neck, and entire lower parts white—this sometimes with a beautiful salmon-pink tinge (especially under the wing); lores, eyelids, and stripe behind the eye black; pileum and nape streaked with black. Upper parts black, the scapulars much spotted with white. Tail black, narrowly tipped with white, and crossed at about one-third the distance from the end by a broad zone of pure white.

List of specimens examined.—In mus. Philad. Acad., 3; Boston Soc., 1; total, 4.

LEUCOPTERNIS KAUP.

? *Leucopternis kuhli* BONAP. Consp. Av. i, 1850, 19.

Buteo kuhlii GRAY, Hand List, i, 1869, 8.

Buteo (Leucopternis) kuhlii RIDGW. Pr. Boston Soc. N. H. 1873, 64.

Leucopternis kaupi BONAP. Rev. Zool. 1850, 481.

Buteo kaupi STRICKL. Orn. Syn. i, 1855, 37.

Urubitinga kaupi SHARPE, Cat. Acc. Brit. Mus. 1874, 219.

Leucopternis superciliaris PELZELN, Sitz. Akad. Wien, xlv, 1861, 10; Verh. z.-b. Ges. Wien, 1862, 140; Ueb. Falk. 1862, 7 (Brazil); Orn. Bras. 1871, 3, 395.—SCL. & SALV. P. Z. S. 1867, 589; Ex. Orn. pt. v, 1867, pl. xxxviii; pt. viii, 1868, 122; Nom. Neotr. 1873, 119.—SALV. Ibis 1872, 242.

Asturina superciliaris SCHLEG. Mus. Pays Bas, Asturinae, 1862, 12.

Hab.—Amazonia, and “Brazil, in the vicinity of Para” (SHARPE).

Wing, 8.40–8.70; tail, 5.30–6.20; culmen, 0.80–0.85; tarsus, 2.10–2.40; middle toe, 1.25–1.30. Fourth to fifth quills longest; first shortest. *Adult*:—Above dark slate; the nape, and sometimes the pileum, streaked with white. Beneath entirely white; the sides of the neck and breast streaked with black. Tail dark slate, faintly whitish at the tip, and crossed a little beyond the middle by a narrow zone of white.

List of specimens examined.—In mus. Philad. Acad., 2; Boston Soc., 1; total, 3.

LEUCOPTERNIS SEMIPLUMBEUS.

Leucopternis semiplumbeus LAW. Ann. N. Y. Lyc. vii, 1861, 283; *ib.* ix, 1865, 133.—SCL. & SALV. Ex. Orn. 1868, 121, pl. lxi; Nom. Neotrop. 1869, 119.—SALV. Ibis, 1872, 243.

Buteo semiplumbeus GRAY, Hand List, i, 1869, 9.

Urubitinga semiplumbea SHARPE, Cat. Acc. B. M. 1874, 220.

Wing, 7.20–8.70; tail, 5.00–7.80; culmen, 0.70–0.85; tarsus, 2.20–2.45;

middle toe, 1.25–1.35. Inner webs of only four outer primaries distinctly emarginated; third to fifth quills longest; first shortest. Tail nearly even, the lateral pair of feathers slightly the shortest. *Adult*:—Entire upper surface, including the side of the head and neck, uniform, dark plumbeous. Tail black, crossed at a little beyond the middle by a narrow, continuous band of white, and sometimes with a second, less continuous, band, nearer the base. Entire lower parts, including the chin and throat and lining of the wing, continuous pure white, the sides of the breast, and sometimes the throat, with a few fine shaft-streaks of dusky. Inner webs of the primaries ashy, barred with dusky beyond their sinuations. Bill slate-black, the basal two-thirds of the lower mandible and that portion of the upper below the cere pale yellow; cere, rictus, and base of lower mandible bright orange-red; tarsi and toes deep reddish-orange; claws black.

The variations in the plumage of this species consist mainly in the presence or absence, and amount when present, of plumbeous wash on the outer side of the tibiae, and the streaks of the same on the throat. In No. 64943, the outer side of the tibiae is almost wholly plumbeous, while in No. 66334 it is entirely absent; in the former, each feather of the throat has a distinct dusky shaft-streak, while in the latter the throat is immaculate. Other specimens are variously intermediate between these extremes.

No. 66334 differs from all others examined in having two bands on the tail, instead of only one; these are both well defined, though the anterior one is not, like the posterior one, continuous. No other differences, however, can be detected, while in other specimens this second band is found indicated by transverse white spots on the inner webs.

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	When collected.	From whom received.
47364	.....	♂ ad.	Costa Rica	April 4, 1867	J. Carmiol.
64941	562	— ad.	do.....	— —, 1873	Prof. Wm. M. Gabb.
64942	160	♂ ad.	do.....	— —, 1873	Do.
64943	552	♂ ad.	do.....	— —, 1873	Do.
66334	.....	— ad.	do.....	— —, 1873	Do.
66335	35	— ad.	Costa Rica (Old Harbor).....	— —, 1873	Do.
67860	265	♂ ad.	Costa Rica (Talamanca).....	.....	Do.
67863	.....	— ad.	do.....	.....	Do.
67864	205	♀ ad.	do.....	.....	Do.

Other specimens examined.—In mus. G. N. Lawrence, 3 (Panama); R. Ridgway, 1 (Costa Rica); total, 13.

LEUCOPTERNIS PRINCEPS.

Leucopternis princeps SCL. & SALV. P. Z. S. 1865, 429, pl. xxiv; Ex. Orn. 1868, 122; Nomencl. Neot. 1873, 119.—LAWR. Ann. Lyc. N. Y. ix, 1868, 133.—SALV. Ibis, 1872, 241–243.

Buteo princeps GRAY, Hand List, i, 1869, 9.

Urubitinga princeps SHARPE, Cat. Acc. Brit. Mus. 1874, 220.

Hab.—Costa Rica (mountainous districts).

Wing, 14.00–15.20; tail, 7.50–9.00; tarsus, 3.25–3.80; middle toe, 2.90. Fourth quill longest, the fifth scarcely shorter; first 3.50 shorter than the

fourth. *Adult*:—Head, neck, jugulum, and entire upper parts uniform plumbeous-black, the bases of the feathers pure white; this somewhat exposed on the occiput and nape. Tail deep black, crossed at about the middle of its exposed portion by a narrow zone of white, and anterior to this by narrower and less complete bands of the same. Lower parts, from the jugulum back, white, narrowly barred with black over the entire surface.

This very rare, and, so far as regards the coloration of the lower parts, somewhat aberrant, species, we have not seen, and consequently draw up our diagnosis from the characters furnished by its describers.

GENUS ELANOIDES, VIEILLOT.

Elanoides VIEILLOT, Nouv. Diet. d'Hist. Nat. xxiv, 1818, 101. Type, *Falco forficatus* LINN.

Nauclerus AUCT., nec VIGORS, 1825.

Osteological characters.^{*}—Cranium very similar in contour and proportions to that of *Pandion*, but presenting important modifications in minor details. Superciliary process of the lachrymal distinct from the frontal, which is completely anchylosed with the nasal; inner convoluted edge of the palatines scarcely produced downward; nasal septum completely ossified; pterygoid bone narrow, and of a uniform width throughout its length. Sternum similar to that of *Pandion*, having, like it, a pair of indentations on the posterior margin, and destitute of foramina; the clavicle, coracoids, and scapula are also very similar.

Anatomical characters.—"Palate flat with two longitudinal ridges; upper mandible with a tuberculate median ridge, lower deeply concave; posterior aperture of the nares oblongo-linear, with the edges papillate. Tongue somewhat decurved, emarginate, and finely papillate at the base, flat above, its tip narrow and acutely emarginate. Œsophagus of nearly uniform width, being destitute of crop, and thus resembling that of the owls; its walls extremely thin; stomach very large, round, slightly compressed, its muscular coat very thin, and composed of a single series of fasciculi. Intestine short and rather wide; pylorus with three knobs, duodenum forming a loop in the usual manner; no cæca; rectum short, with a large globular dilatation."—(MCGILLIVRAY.)

Pterylographical characters.—"Inner branch on the jugular part distinct but short; outer branch entirely free. Dorsal portion of the spinal tract usually long."†—(NITZSCH.) Contour-feathers with after-shafts. Lumbar tract present. Remiges, 23.

General external characters.—Bill rather small and narrow, intermediate between that of *Pandion* and *Elanus*; compressed anteriorly, and very broad at the base; the terminal hook well produced, the tomia very regular; cere ascending; nostril broadly oval, oblique; gonys nearly straight; tomium of the lower mandible very convex. Lores densely feathered, the feathers bristle-like. Feet robust; tarsus a little longer than the middle toe, covered with large, irregular, hexagonal scales; toes with transverse scutellæ nearly to the base; claws short, strong, abruptly flattened beneath, the edges very sharp, the middle claw bent laterally, the inner side very convex, the projecting edge sharp and entire. No web between the toes. Primaries and rectrices excessively elongated and narrow, the former more than twice the length of the secondaries. Outer tail-feathers about equal to the primaries, and more than twice as long as the middle pair.

Apparently more nearly related to *Pernis*, *Cymindis*, *Regerhinus*, and allied forms than to any other genera, the genus *Elanoides* yet stands isolated from these by the absence of many characters common to them, and by the possession of features peculiarly its own. In general external form, it approaches quite nearly the genus *Milvus*, but when com-

^{*} Of this genus we have seen only the skull and sternum.

† NITZSCH gives the above characters of a group in which he includes *Milvus regalis*, *M. ater*, and *Elanoides forficatus*.

pared closely, the two are found to possess no real affinities of structure. The same is true of its relation to *Nauclerus riocouri*, usually placed in the same genus; the latter being very much more intimately related to the genera *Ictinia*, *Elanus*, and their affines, as shown on page 147.

ELANOIDES FORFICATUS.

Falco forficatus LINN. S. N. i, 1758, 89.

Nauclerus forficatus RIDGW. Pr. Phil. Ac. Dec. 1870, 144; Pr. Boston Soc. N. H. May, 1873, 52; Am. Nat. vii, April, 1873, p. —; B. B. & R. Hist. N. Am. B. iii, 1874, 192.

Falco furcatus LINN. S. N. i, 1766, 129.—GM. S. N. i, 1788, 262.—LATHAM, Ind. Orn. i, 1790, 22.—SHAW & NODD. Nat. Misc. 1795, pl. 204.—DAUD. Tr. ii, 1800, 152.—SHAW, Zoöl. vii, 1812, 107.—WILS. Am. Orn. vi, 1812, 70, pl. 51, figs. 1, 3.—BONAP. ANN. N. Y. Lye. ii, 1828, 31; Isis, 1832, 1138.—AUD. B. Am. 1831, pl. 72; Orn. Biog. i, 1831, 368; v, 371.—SCHL. u. susem. Vög. Eur. 1839, taf. 32, f. 1.

Milvus furcatus VIEILL. O. Am. S. 1807, pl. x.

Elanoides furcatus VIEILL. Enc. Méth. iii, 1823, 1205.—GRAY, List. Acc. B. M. 1844, 44.—STRICKL. Orn. Syn. i, 1855, 141.—SCL. & SALV. Ibis, 1859, 220; Nom. Neotr. 1873, 121.—OWEN, Ibis, 1860, 240.—SCHL. Mus. P.-B. Milvi, 1862, 5.—SHARPE, Cat. Acc. B. M. 1874, 317.

Elanus furcatus VIG. Zoöl. Journ. i, 1824, 340.—STEPH. Zoöl. xiii, 1826, 49, pl. ii.—CUV. Règ. An. ed. 2, i, 1829, 334.—JAMES. ed. Wils. Am. Orn. i, 1831, 75.—JARD. ed. Wils. ii, 1832, 275.—NUTT. Man. 1833, 94.

Nauclerus furcatus VIG. Zoöl. Journ. ii, 1825, 387; Isis, 1830, 1043.—LESS. Man. i, 1828, 101; Traité, 1831, 73.—SWAINS. Classif. i, 1837, 312; ii, 210.—GOULD, B. Eur. 1837, pl. xxx.—BONAP. Comp. List, 1838, 4; Cat. Ucc. Eur. 1842, 20; Consp. i, 1850, 21.—AUD. B. Am. fol. 1839, pl. 72; oct. ed. 1839, i, 78, pl. 18; synop. 1839, 14.—R. SCHOMB. Reis. Br. Guian. 1840, 735.—DE KAY, Zoöl. N. Y. ii. 1844, 12, pl. vii, f. 15.—GRAY, Gen. i, 1845, 25, pl. 9, fig. 9; Gen. & Subgen. B. M. 1855, 6; Hand List, i, 1869, 27.—HARTL. Ind. Azara, 1847, 57.—KAUP, Contr. Orn. 1850, 57.—BREWER, ed. Wils. Synop. 1852, 685; N. Am. Oölogy, i, 1857, 38.—WOODH. Expl. Zuni, 1853, 60.—BURM. Th. Bras. ii, 1856, 110.—CASS. B. N. Am. 1858, 36.—BAIRD, Cat. N. Am. B. 1859, No. 34.—TAYLOR, Ibis, iv, 1862, 128.—DRESSER, Ibis, 1865, 325.—COUES, Pr. Phil. Acad. 1866, p. —; Key N. Am. B. 1872, 211; Check List N. Am. B. 1873, 67; Birds Northwest, 1874, 332.—LÉOT. Ois. Trinid. 1866, 30.—GUNDL. J. f. O. 1871, 370.—NEWT. ed. Yarr. Br. B. 1871, 103.—PELZ. Orn. Bras. 1871, 6, 398.

Elanoides yetapa VIEILL. Enc. Méth. iii, 1823, 1205.

Falco yetapa MAX. Beitr. iii, Abth. i, 1830, 141.

Accipiter cauda furcata CATESBY, N. H. Carol. i, 1754, pl. iv.

Accipiter milvus carolinensis BRISS. Orn. i, 1760, 418.

The Swallow-tailed Hawk CATESBY, Carol. i, 1731, 4, pl. 4.

Le Milan de la Caroline BRISS. Orn. i, 1760, 418.

Swallow-tailed Falcon LATHAM, Synop. i, 1781, 60.—PENNANT, Arc. Zoöl. ii, 1785, 210, No. 108, pl. x.

Hab.—The whole of tropical and subtropical America, south to Paraguay, Buenos Ayres, and Chile, north in the interior districts of the United States to Minnesota and Wisconsin, and in the Atlantic States to Pennsylvania. Accidental in the British islands (NAT. MUS.); Minnesota, 30 miles north of Mille Lac, lat. 47° (TRIPPE, Pr. Essex Inst., vi, 1871, 113).

Wing, 15.40–17.70; tail, 12.50–14.50; culmen, 0.70–0.80; tarsus, 1.00–1.30; middle toe, 1.00–1.20. Head, neck, entire lower parts (including lining of the wing and basal half of the secondaries underneath), and band across the rump pure white. Back, wings, and tail plain polished blackish, with varying reflections; tertials white, with blackish tips. *Adult*:—The white of the head and neck immaculate; back scapulars and lesser wing-coverts with a soft reflection of dark purplish bronze, the other black portions with a glaucous or chalky cast, with a green reflection in certain lights. *Young*:—Feathers of the head and neck with dusky shaft-streaks; the black above less glossy, more brownish, the bottle-green reflection replacing the soft purplish bronze on the

back and shoulders; remiges, rectrices, and primary coverts with a narrow terminal border of white.

There is little variation in the coloration of this beautiful species, the only one presenting differences particularly noticeable being No. 56099 (supposed to be from England), in which the black in its entire extent is nearly uniform, and glossed with a uniform violaceous-slate. This appearance, however, is probably caused by greater age of the feathers.

The fresh colors of the soft parts are as follows in the adult:—"Bill deep black, the basal half of the lower mandible, the basal portion of the upper beneath the cere, the cere, rictus, and naked eyelids, plumbeous-blue; feet similar but paler; claws grayish brown; *iris very dark brown*: interior of the mouth bright cobalt-blue." (No. 957, ♂, Mus. R. R., Mt. Carmel, Ill., Aug. 1, 1870. Length, 22.75; extent, 50.80.)

List of specimens in United States National Museum.

Catalogue No.	Original No.	Sex and age.	Locality.	Date.	Donor.
3754	.....	.....	Prairie Mer Rouge, La .....	.....	James Fairié.
12035	.....	♂ ad.	Cantonm't Burgwyn, N. Mex.	Aug. 5, 1859	W. W. Anderson.
18457	.....	— juv.	Cherokee Nation, Ind. T.	Aug. 5, 1849	Dr. Woodhouse.
30408	40	— ad.	Costa Rica (San José) .....	.....	Dr. A. von Frantzius.
34151	13	♀ ad.	Sioux City, Iowa	May 5, 1864	John Feilner.
39332	40	♂ ad.	Costa Rica	May 15, 1865	Dr. A. von Frantzius.
39451	.....	— ad.	Eastern Peru (head Hualaga River).	.....	Walter T. Church.
41906	38	♂ ad.	Western Kansas .....	.....	Allen Crocker.
50928	.....	— ad.	Brazil .....	.....	Sr. Don Fr. Albuquerque.
51654	.....	♀ ad.	Texas (Washington County) .....	.....	G. W. Lincecum.
52993	.....	— ad.	Kiowa Agency, Ind. T .....	.....	Dr. E. Palmer.
56099	73	♂ ad.	"In Englang geschossen" .....	.....	W. Schlütter.
56100	74	♀ ad.	 do .....	.....	Do.

Other specimens examined.—In mus. Philad. Acad., 3; Am. Mus., N. Y., 4 (Brazil); Boston Soc., 1; Mus. Comp. Zoöl., 2; G. N. Lawrence, 3; R. Ridgway, 2 (Illinois and Demerara); total, 28.

Collectors' notes.—No. 34151: length, 23.20; extent, 56.20. No. 39332: "Iris red." J. Zeledon.

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