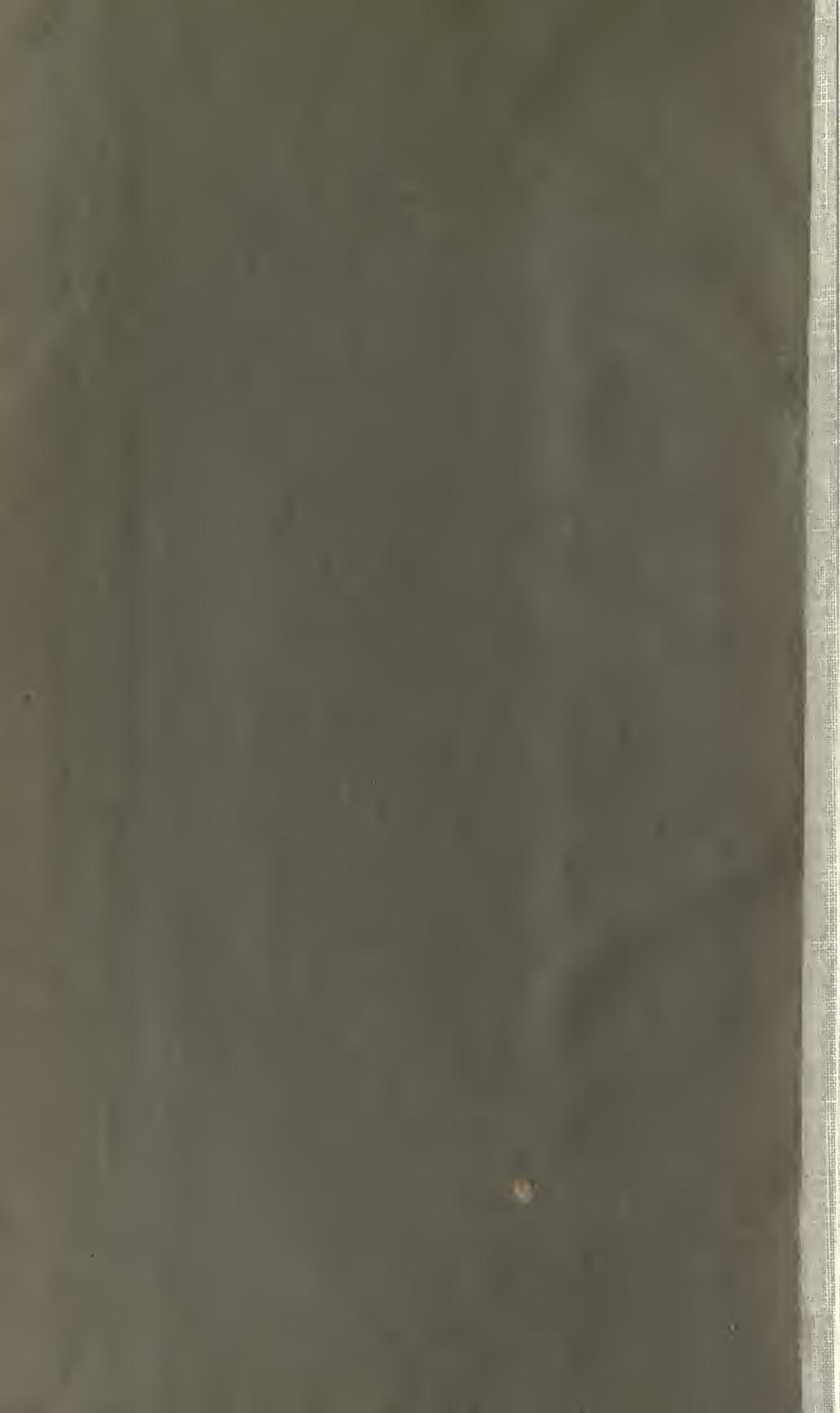


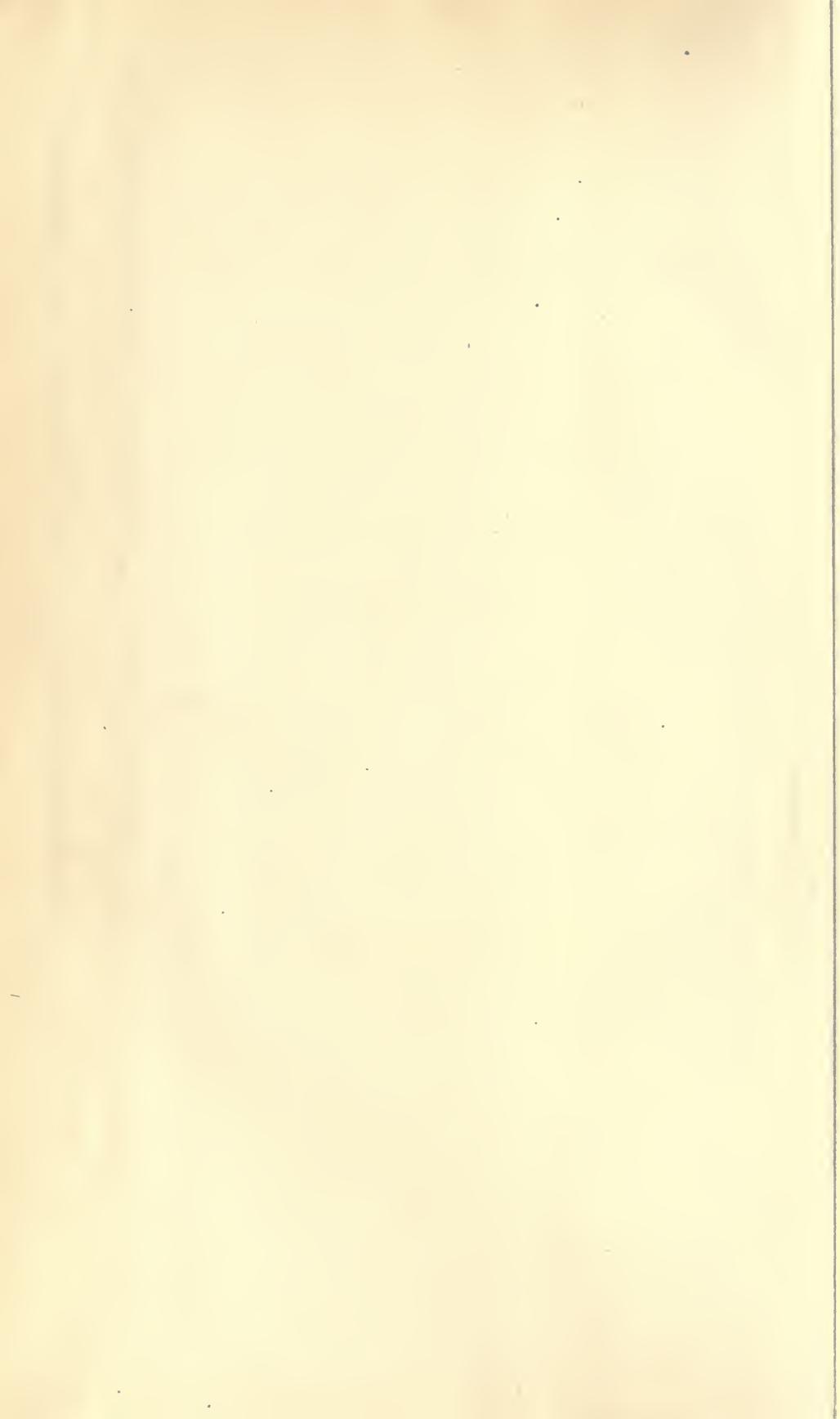
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NEW BIRDS FROM CENTRAL PERU

BY

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REPORTS ON RESULTS OF
THE CAPTAIN MARSHALL FIELD EXPEDITIONS

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CHICAGO, U. S. A.

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NEW BIRDS FROM CENTRAL PERU

BY JOHN T. ZIMMER

Recent studies of birds secured by the author, as ornithologist of the Captain Marshall Field Peruvian Expedition of 1922, have brought to light a number of apparently undescribed subspecies. Since the full report on the collection may be delayed, it seems desirable to publish, in advance, the descriptions of these new forms. With a single exception, noted in its place, the type specimens are in Field Museum. The names of colors when capitalized are according to Ridgway's "Color Standards and Color Nomenclature."

Gymnopelia ceciliae *obsoleta* subsp. nov.

Type from Cullcui, Marañon River, Peru. Altitude 10,400 feet. No. 54005 Field Museum of Natural History. Adult male. Collected December 12, 1922 by J. T. Zimmer; original number 3295.

Diagnosis. Similar to *G. c. ceciliae* from the western coast-range of Peru, but larger and with the breast paler, more bluish (less vinous) anteriorly, with a broader encroachment of the buffy color of the abdomen spreading over the lower breast. Above darker, more grayish or blackish brown (less sandy).

Habitat. Upper Marañon valley of Peru, in the temperate zone.

Description of type. General color of upper parts Hair-Brown. Forehead whitish, tinged with Cinnamon. Feathers of scapulars and lower back tipped with buffy white, forming ill-defined spots. Rump and upper tail-coverts slightly paler than the back, and tipped with Cinnamon. Chin and throat dull white, passing into Pinkish Cinnamon on the sides of the throat, and into light Vinaceous Gray on the foreneck, darker at the sides. The gray on the foreneck is more or less abruptly replaced on the breast by Light Buff, deepening into Warm Buff on the rest of the under parts. Sides of face about eyes naked, Deep Chrome in color. Surrounding the bare patch is a line of black feathers, more pronounced above, becoming obsolete on the lower posterior margin of the orbit. Primaries, primary-coverts, and secondaries deep black; tertials Hair-Brown tipped with a large, buffy white spot. Greater wing-coverts black; remainder of upper wing-coverts Olive Brown or Hair-Brown with a large, terminal, white spot. Under side of wing black. Upper tail-coverts and middle pair of rectrices Olive

Brown, tipped with buffy white. Remainder of rectrices black with a little brown on outer web at base and a terminal white spot, the latter increasing in size on the outermost feathers. Iris white; bill black; feet pale pink; claws black. Tail very slightly double-rounded. Wing 106 mm.; tail 87; culmen 12; tarsus 18.

Female: Like the male but smaller, with the breast paler (Lilac Gray) and the abdomen lighter (Pinkish Buff).

Specimens examined:

G. c. ceciliae—Peru: Hda. Llagueda (Otuzco) 1 ♂ 1 ♀; Macate 5 ♂ 4 ♀; Matucana 1 ♂; Santa Eulalia 1 ♂.

G. c. gymnops—Bolivia: Puno 1 ♂.

G. c. obsoleta—Peru: Balsas 1 ♀; Cullcui, Marañon R. 1 ♂; 1 ♀.

Chalcostigma stanleyi versigularis subsp. nov.

Type from mountains near Huanuco, Peru. Altitude 12,200 feet. No. 54008 Field Museum of Natural History. Adult male. Collected June 30, 1922 by J. T. Zimmer; original number 2474.

Diagnosis. Intermediate between *C. s. stanleyi* of Ecuador and *C. s. vulcani* of Bolivia and southeastern Peru. Compared with *stanleyi* the present form averages slightly smaller in size but is readily separable by the color of the lower portion of the throat-pendant which is glittering violet instead of amethyst red. The general color of the body plumage is darker than in *stanleyi*, and the bluish wash on the back is deeper and extends farther forward, while the ventral surface is more sooty brown, with distinct bluish reflections in certain lights. Compared with *C. s. vulcani*, the lower throat-pendant is brighter, distinctly amethystine or purplish on the upper margin, and violet rather than plumbeous on the distal portion.

Habitat. High mountains of central Peru at the junction of the temperate and puna zones.

Description of type. Forehead and forepart of crown bronzy green or Oil Green. Hind part of crown and nape blue. Back rich Azurite Blue. Upper tail-coverts and upper side of tail Dusky Green Blue. Post-ocular spot white. Sides of face and margins of throat all around sooty black. Chin and upper throat metallic green (Emerald Green to Vivid Green); lower throat-pendant on upper portion Violet Purple, changing to Blue Violet on the terminal portion. Breast, flanks and abdomen Light Fuscous with reflections of a greenish hue, in certain

lights decidedly bluish. Breast feathers faintly tipped with whitish. Crissum white. Under tail-coverts brown with more or less pronounced bronzy green reflections, and broadly margined with white. Under side of tail Dusky Greenish Blue. Under side of wing Dusky Dull Violet. Iris brown; bill and feet black. Wing 67 mm.; tail 57; culmen 11.

Female: Like the male above except for having less blue on the hind part of crown and nape which are like the forehead. Under parts like those of the male except for the throat and chin which are concolor with the breast and abdomen. Several white feathers spotted with black are possible indications of immaturity.

Specimens examined:

C. s. stanleyi—Ecuador: El Corazon 1 ♂; Mt. Pichincha 1 ♂.

C. s. vulcani—Peru: Marcapata 1 ♂.

C. s. versigularis—Peru: Mountains near Huanuco (12,200 ft.)
3 ♂ 1 ♀.

***Siptornis urubambensis huallagae* subsp. nov.**

Type from mountains near Huanuco, Peru. Altitude 12,200 feet. No. 54012 Field Museum of Natural History. Adult male. Collected June 28, 1922 by J. T. Zimmer; original number 2466.

Diagnosis. Color of upper parts more intense, deeper and redder than in the type of *S. urubambensis urubambensis*. Streaks on the top of the head restricted to the forehead, not encroaching on the crown. Nape practically unstreaked. No grayish edgings on the back. Post-auriculars clearer white, edged with deeper blackish rufous. Throat and under parts clearer white with margins to the feathers broader, blacker brown. Flanks more rufous with shaft-stripes broader, more conspicuous. A reddish band near the base of inner primaries not very distinct, even less marked than in *urubambensis*. Bill and feet (in dried skins) blacker (base of bill pale, but in female not so pale as in *urubambensis*).

Habitat. Mountains of central Peru, bordering the upper Huallaga River at the upper edge of the temperate zone.

Description of type. General color of upper parts Auburn. Forehead streaked with Ochraceous Tawny. Crown and occiput not streaked. Nape with very faint indications of pale hair-lines, concealed in the normal position of the feathers. Tail Warm Sepia edged

with paler. Exposed outer surface of closed wing like the back. On the inner primaries and outer secondaries, at their extreme bases, practically concealed, is a small spot on both webs, Hay's Brown. Lores and superciliary line white. Sides of face and auriculars white edged with Seal Brown or blackish. Sides of neck white edged with the color of the back. Chin Bright Ochraceous Buff; extreme point white. Throat and foreneck white heavily margined or sub-margined with Seal Brown, approaching Auburn on the sides of the breast. Center of breast and abdomen unstreaked, soiled white. Flanks Dresden Brown with white shaft-streaks. Under tail-coverts like flanks. Under side of wing-quills Brownish Vinaceous. Under wing-coverts whitish, tinged with vinaceous. Iris brown; bill and feet brownish black, lower base of bill paler. Wing 65 mm.; tail 86; culmen from base 19; tarsus 27.

Female: Like the male but chin deeper,—Orange Buff. Wing 59 mm.; tail 76; culmen from base 18; tarsus 26.

Specimens examined:

S. u. urubambensis—Peru: Machu Picchu 2 ♂ 2 ♀.

S. u. huallagae—Peru: Mountains near Huanuco (12,200 ft.)
1 ♂ 1 ♀.

Cranioleuca baroni capitalis subsp. nov.

Type from La Quinoa, Peru. Altitude 12,000 feet. No. 54015 Field Museum of Natural History. Adult male. Collected May 14, 1922 by J. T. Zimmer; original number 2217.

Diagnosis. Most nearly allied to *C. baroni baroni* of northwestern Peru (Marañon valley), but differs in several characters. The crown is much paler (Dark Hazel in *baroni*), the wings and tail are slightly paler, the former with a more rufescent tinge on the tertials and the latter sometimes with well-marked dark patches on the middle rectrices (absent in *baroni*). Distinct white centers to the feathers on the sides of the neck and breast and on the lower breast which are, in turn, darker than in *baroni*, form an unmistakable character, and white tips to the under tail-coverts with occasional russet shaft-lines are, apparently, not present in the typical race.

Habitat. Central Peru at high elevations.

Description of type. Whole top of head Tawny; the feathers of the occiput long, forming a sort of crest. Back Dark Grayish Olive,

paler on the rump; feathers of hindneck like back, lightly edged with blackish. Chin and throat pure white with a few faint blackish tips to the feathers. Lores white at base, more or less tipped with black. A distinct white superciliary stripe from the base of the nostril to the posterior border of the auriculars. Upper portion of auriculars Sooty Brown with paler shafts; lower portion white with dusky edges. Malar region white with some Grayish Olive edges and tips. Post-auriculars and sides of neck Dark Grayish Olive with broad white centers to the feathers, forming spots or streaks. Foreneck and chest white with more or less distinct grayish tips and edges; lower breast and abdomen darker, grayish, passing into Olive Gray on the lower abdomen, the feathers with narrow but distinct white shaft-lines. Sides Olive Gray with broad white shaft-streaks, passing into clear Olive Gray on the flanks. Under side of tail bright Russet. Under tail-coverts Deep Grayish Olive with white tips and the longer ones with rufescent shafts. Upper side of tail Hazel with more or less Olivaceous Black on the inner webs of the middle pair, (sometimes reaching to the base of the feathers). Remiges Fuscous with inner margins Pale Ochraceous Buff; outer margins Hazel; outer margins of tertials olivaceous with a more or less distinct linear patch of Hazel along the outer edge of the shaft. Upper wing-coverts Hazel with concealed portions black. Under wing-coverts Buffy White with Hazel toward the bend of the wing. Iris brown; bill Blackish Brown; feet Dusky Olive Green. Wing 80 mm.; tail 92; culmen 18; tarsus 23.

Female: Similar to the male.

The original description of *Cranioleuca baroni* is very inadequate, but Count Berlepsch, who sent the type to Salvin, has left in his manuscript notes, a particularly complete diagnosis of the same specimen. Through the kindness of Dr. Hellmayr, I have had access to this description, which I have found to agree in all details with a specimen from the upper Marañon valley.

The species is quite distinct from *Cranioleuca albicapilla*, although its affinities are with that form.

Specimens examined:

C. b. baroni—Peru: Cullcui, Marañon R. (10,400 ft.) 1 ♂.

C. b. capitalis—Peru: La Quinoa (12,000 ft.) 1 ♂ 3 ♀; Mountains near Huanuco (10,500 ft.) 1 ♂; Mountains near Panoa (10,300 ft.) 2 ♀.

Cranioleuca albicapilla albigula subsp. nov.

Type from Machu Picchu, (Cedrobamba), Urubamba Valley, Peru. Altitude 12,000 feet. No. 273175, U. S. National Museum. Adult male. Collected June 14, 1915 by E. Heller; original number 175.

Diagnosis. Similar to *C. a. albicapilla* but darker and more olivaceous brown above and below except for the throat which is snowy white in a broad patch, conspicuous against the deep ochraceous sides of neck and breast. The crown is deeper cinnamomeus without blackish tips to the feathers.

Habitat. Highlands of Urubamba valley, Peru.

Description of type. Forehead and crown Light Pinkish Cinnamon, deepening on the distal portion of the elongated crest feathers to Pinkish Cinnamon or Cinnamon, without blackish tips as in *C. a. albicapilla*. Semi-concealed occiput and the nape Brownish Olive, the former with subterminal patches of Cinnamon. Back and scapulars Light Brownish Olive, passing into Buckthorn Brown or Isabella color on the rump and upper tail-coverts. Lores black at tips, white or whitish at bases. An inconspicuous whitish superciliary line reaching to posterior border of auriculars. Postocular region dull Buckthorn Brown at tips of feathers, white or whitish anteriorly. Malar region white anteriorly, faintly washed with Ochraceous, about the middle of the auriculars becoming nearly pure Yellow Ochre which passes into Clay Color on the sides of breast and extends, somewhat paler and duller, across the middle of the breast. The whole chin and throat is snowy white (which passes up to the anterior auriculars, broken only by the slight ochraceous wash on the malar region). Middle of breast dull Cinnamon Buff passing into Light Brownish Olive on the abdomen and Isabella color on the flanks. Remiges Fuscous Black, the inner ones edged externally with Olive Brown. Primary-coverts black. Upper wing-coverts on exposed webs Bright Hazel; on concealed inner webs blackish. Axillaries Pale Ochraceous Buff. Under wing-coverts and bend of wing Pinkish Cinnamon. Rectrices dark Cinnamon-Rufous; shafts beneath the same, above black. Bill (in dried skins) Snuff Brown, blacker at tip, paler at lower base; feet Snuff Brown. Wing 72 mm.; tail 86; culmen 16; tarsus 22.

The single specimen of this form is very clearly distinguished from typical *albicapilla* from Maraynioc. That its differences are not to be attributed to individual variation I am reassured by a manuscript notation made by Count Berlepsch on five specimens of *S. albicapilla* from

the Urubamba valley, for which I am indebted to Dr. Hellmayr. Count Berlepsch found the Urubamba birds to differ from Maraynioc specimens by having a purer white throat, more fulvous under parts and deeper buffy crown, the same characteristics which mark the type of the present form.

I am indebted to Dr. Charles W. Richmond for permission to describe the above proposed new form which was discovered among specimens borrowed for comparative study from the U. S. National Museum.

Specimens examined:

C. a. albicapilla—Peru: Maraynioc (10,850 ft.) 1 ♂ 2 ♀ 1 ?.

C. a. albigula—Peru: Cedrobamba (12,000 ft.) 1 ♂.

Xenops minutus obsoletus subsp. nov.

Type from Puerto Bermudez, Peru. No. 54022 Field Museum of Natural History. Adult male. Collected March 15, 1923 by J. T. Zimmer; original number 3494.

Diagnosis. Most nearly allied to *X. m. ruficaudus*, but differs in being more olivaceous above; the head not distinctly darker than the back, not edged or tipped with blackish, and with only faint pale hair-lines in place of the broad median streaks of *ruficaudus*; the rump scarcely brighter than the back; the middle tail feathers paler, more ochraceous; below somewhat duller with the chest less broadly marked with whitish or buffy. From *X. m. genibarbis* it differs in very slightly more streaked head, more olive back, duller rump, duller, less rufescent wings, more heavily spotted throat, more olivaceous and less grayish abdomen, paler upper surface of tail, and darker breast. From *X. m. littoralis* it differs in being duller, more olive and less rufescent above, especially on the rump, with the crown less streaked, the chin and throat whiter, less yellowish, the breast feathers browner on the edges, and the tertials, the wing-bar, and the rectrices less rufous.

Habitat. Peru and probably upper Amazonia.

Description of type. Top of head and back Brussels Brown, the former with faint indications of pale shaft-lines; rump slightly paler (approaching Sudan Brown); upper tail-coverts somewhat lighter (between Sudan Brown and Mars Yellow). Chin and fore part of throat Ivory White with slight, Blackish-Brown tips to the feathers giving the throat a spotted appearance. On the lower throat and chest

the discal portion of the feathers is deeper (nearer Clay Color) with broad edges and tips Light Brownish Olive, the pale discs becoming obsolete on the lower breast, abdomen, flanks and under tail-coverts, which are plain, Light Brownish Olive. Lores whitish. Superciliary line Cinnamon Buff (sometimes whitish), broader posteriorly. Auriculars Mummy Brown with pale shaft-lines. A broad subauricular patch pure white. Primaries and secondaries blackish crossed by a broad transverse spot, Light Buff on inner margin, Ochraceous Buff on outer, forming a conspicuous wing-bar on either the closed or opened wing. Outermost primary edged externally with Whitish Buff. Tertiaries Brussels Brown, edged with paler. Primary-coverts black. Upper wing-coverts blackish, edged with Dresden Brown. Alula blackish, outer webs Drab. Bend of wing Ochraceous Tawny. Under wing-coverts Deep Ochraceous Buff. Middle pair of rectrices Ochraceous Tawny; second and third pairs black; fourth pair black with Ochraceous Tawny tips, longer on outer webs; fifth pair like fourth but black more restricted; sixth almost entirely Ochraceous Tawny with black only on basal half of inner web and at extreme base of outer one. Iris Deep Brown; bill Fuscous, white at lower base; feet pale blue. Wing 64 mm.; tail 50; culmen 16; tarsus 16.

Female: Like male but apparently very slightly paler and duller.

The names *minutus* and *ruficaudus* which have been resurrected in the study of this new form are treated below under their respective heads.

Specimens examined:

X. m. minutus—Brazil: S. Paulo 1 ♀.

X. m. genibarbis—Brazil: Para, Benevides 4 ♂ 1 ♀.

X. m. ruficaudus—Brazil: Conceicao 1 ♂; Manaos 1 ♂. French Guiana: Mana 1 ♂; Pied Saut 1 ♂; Tamanoir 7 ♂ 4 ♀; 1 ♂ ?. Venezuela: Upper Caura R. 3 ♂ 3 ♀; (loc. incert.) 1.

X. m. littoralis—Ecuador: Chimbo 1 ♀; Lita 1 ♂.

X. m. obsoletus—Peru: Huachipa, Huallaga R. 1 ♀; Puerto Bermudez 1 ♂; Rio Colorado, Chanchamayo 1 ♀.

***Xenops minutus minutus* (Sparrmann).**

Turdus minutus Sparrmann, Mus. Carlsonianum, Fasc. 3, pl. 68, 1788—loc. ign.

Xenops genibarbis Sundevall, Kon. Vetensk. Ak. Handl., 2, No. 3, p. 11, 1857.

Xenops genibarbis pelzelni Hellmayr, Novit. Zool., 14, p. 55, March 1907.

The name *minutus* for the form of *Xenops genibarbis* inhabiting extreme southeastern Brazil, appears to have been entirely overlooked by recent authors. Sparrmann's plate is unrecognizable, but Sundevall, who examined the type in the Stockholm Museum, recognized the generic affinities of the specimen and recorded it as *X. genibarbis*. He characterized the original drawing as "haud bene delineata"! More recently, Dr. Hellmayr, to whom I am indebted for the synonymy and for permission to utilize a note from his correspondence, sent specimens of various races of *genibarbis* to Dr. Einar Lönnberg of the Museum of Stockholm, with a request for a comparison with the type of *Turdus minutus*. Dr. Lönnberg's reply (dated April 5, 1922) pronounced *X. g. pelzelni* to be undoubtedly identical with *minutus*. As the latter is the oldest name in the group, it must replace *genibarbis* as the specific title, and the species must be known hereafter as *Xenops minutus*. The typical race is easily recognizable by its small bill and bright coloration, with nearly immaculate whitish chin and throat.

Xenops minutus ruficaudus Vieillot.

Xenops ruficaudus Vieillot, Analyse Ornith. elem., p. 68, 1816—Guiana.

Xenops approximans Pelzeln, Sitzb. Akad. Wien. mathem., Naturwiss. Cl., 34, pp. 113, 133, 1859—"Brasilia" (Rio Negro, Rio Madeira, etc.).

Xenops genibarbis genibarbis Hellmayr, Novit. Zool., 14, pp. 54-5 (part.), 1907.

The present race of *X. minutus*, inhabiting the region from the Guianas and southern Venezuela to the mouth of the Rio Negro and possibly the lower Rio Madeira, apparently is quite distinct from *X. m. genibarbis* from the Para district of Brazil. It differs in the strongly streaked crown, more heavily spotted throat, and generally darker, more olivaceous breast and abdomen. Birds from Manaos and Conceicao are inseparable from typical Guiana specimens. As these localities are in the region where Natterer secured the type specimens of *approximans* (at least three of his birds being from Manaos), and as Pelzeln particularly noted the yellowish shaft stripes on the crown as distinctive characters of *approximans*, in the original description of that form, it seems unquestionable that *approximans* is a synonym of *ruficaudus* and not of *genibarbis*. Since no type locality has been selected

heretofore, I hereby designate Manaos as type locality. Specimen No. 19313 of the Vienna Museum, ♀, taken at Manaos, on October 5, 1830, by Natterer is one of the original "co-types."

Euchlornis sclateri pallidigula subsp. nov.

Type from Huachipa, upper Huallaga River, Peru. Altitude 4,100 feet. No. 54025 Field Museum of Natural History. Adult male. Collected October 3, 1922 by J. T. Zimmer; original number 2977.

Diagnosis. Similar to *E. s. sclateri* from Ecuador, but wing shorter and tail longer, the back slightly paler, the belly less yellowish, the throat and chest with more yellow at the sides and on the subterminal portions of the feathers, modifying the carmine of the feather-tips to a general effect of scarlet, the tail possibly a little more broadly tipped with white.

Habitat. Tropical forest of central Peru, at moderate elevations.

Description of type. Entire upper surface of body bright green (between Rinneman's Green and Scheele's Green), more yellowish in certain lights, more bluish in others. Upper surface of tail the same with a dusky wash, the rectrices narrowly tipped with yellowish white. Wing-coverts like the back; the greater series and the primary-coverts with faint, pale yellowish tips. Remiges dull black, exteriorly edged with Scheele's Green, becoming whitish near the tips of outer primaries; subterminal portion of remiges blackish, tipped with white; on the tertials the black is reduced to a narrow subterminal bar while the white tip is more extended. Lores and sides of face like the back. Chin and throat Pomegranate Purple with broad yellow (Lemon Yellow or Lemon Chrome) subterminal portions and white bases, the subterminal yellow showing through the purple tips and giving the area a general effect of Scarlet; chin more yellow, with smaller purple tips and with a number of long, curved, black bristles. Chest, like throat but with the yellow concealed; sides of throat and chest more or less pure Lemon Chrome, the tips of the feathers slightly washed with purple. Lower breast, sides and flanks Rinneman's Green with faint touches of Dull Greenish Yellow at tips. Center of abdomen clear Dull Greenish-Yellow. Under tail-coverts bright Chalcidony Yellow. Under wing-coverts Rinneman's Green; axillaries light Dull Greenish Yellow; bend of wing Citron Yellow. Iris Light Viridine Green; bill Orange at base, black at tip; feet Deep Chrome, claws black. Wing 71 mm.; tail 48; tarsus 18; culmen 14.

Euchlornis sclateri was described by Cornalia in 1852 from a specimen which was without data and which he first ascribed to Peru, and the following year to Bolivia, both localities being pure surmises. Slater, who examined the type prior to its description and who pointed out the distinctness of the form to Cornalia, in 1854 assumed the original locality to be Ecuador and recorded other specimens from that country. Since that time additional specimens have been taken in Ecuador and that region has come to be regarded as the sole habitat of the species. The discovery of a distinct race in the mountains of central Peru necessitates either the renaming of the Ecuadorean form or the fixation of eastern Ecuador as the type locality of *sclateri*. In view of the more extended knowledge of the northern race, the latter expedient appears to be the more desirable one, and accordingly I have described the Peruvian race as new. The type locality of *sclateri* may be taken as "Quixos, eastern Ecuador."

Specimens examined:

E. s. sclateri—Ecuador: Rio Suno (?) 2 ♂.

E. s. pallidigula—Peru: Huachipa 2 ♂.

Phrygilus alaudinus bipartitus subsp. nov.

Type from Cajamarca, Peru. No. 50024 Field Museum of Natural History. Adult male in breeding plumage. Collected April 17, 1912 by W. H. Osgood and M. P. Anderson; original number 2746.

Diagnosis. General form and color of *P. a. alaudinus* and *P. a. excelsus*, but clearly separable by the deep gray of the throat and fore-neck sharply defined against the clear white of the lower breast and abdomen. In typical *alaudinus* the throat and chest are pale gray (Deep Gull Gray to Dark Gull Gray) paling gradually into white on the center of the abdomen, with more or less ochraceous on the flanks. In *excelsus* the gray is deeper (Slate Gray to Slate Color) on the fore parts beneath, graduating into grayish white on the abdomen. In *bipartitus* the gray is still darker, sometimes blackish on the chin, and is sharply contrasted with the white of the posterior regions.

Habitat. Central and western Andes of middle and northern Peru, possibly to southwestern Ecuador.

Description of type. Top of head Blackish Slate, becoming paler (Slate Gray) on the upper back. Interscapular region and lower back with feathers Slate Gray at base, broadly centered with black toward their tips and with Cinnamon Brown edges. Rump Slate Gray with a

faint brownish wash. Middle tail feathers Snuff Brown with the edges white at base. Remainder of the tail Fuscous Black with a white spot on the middle of each rectrix on the inner web only. Lores Sooty Black. Chin Blackish Slate. The throat, sides of face, and the chest Slate Color, terminating abruptly on the middle of the breast. Lower breast, abdomen and under tail-coverts white. Flanks whitish, with a faint buffy wash on outer edge. Wings Fuscous, the primaries edged narrowly with white, the secondaries with Dull Gray and the tertials with Cinnamon Brown. Upper wing-coverts blackish, margined with grayish white. Scapulars like back. Under wing-coverts Slate Gray with some faint white tips to the feathers. (Iris Dark Umber; bill Mustard Yellow; feet Naples Yellow*). Wing 75 mm.; tail 59; culmen 13; tarsus 23.

Female: Whole upper parts streaked, with blackish centers to the feathers and Snuff Brown or Cinnamon Brown edges, the interscapulars slightly grayish and the lower rump with less black streaking. Lores and circumocular space buffy white. Auriculars Tawny Olive, with faint indications of darker centers to the feathers. Chin whitish. Throat and chest white, washed with buff and streaked with Blackish Brown, the streaked buffy area terminating abruptly, being succeeded by the purer white of the lower breast and abdomen. Flanks white, outwardly streaked like the breast. Remiges and rectrices as in the male but browner. Upper wing-coverts margined with whitish or pale gray. Under wing-coverts Pale Gull Gray. Iris Raw Umber; bill Olive Brown; feet Naples Yellow. Wing 70 mm.; tail 52; culmen 13; tarsus 20.

Juvenal male: Above like adult female but all the edges to the feathers light Ochraceous Tawny, and their blackish centers broader and more sooty. Auriculars with more or less distinct shaft-stripes of dark brown. Chin Ivory Yellow. Throat and chest Pale Cream Buff, the former with ill-concealed gray bases and light shaft-streaks of dark brown. Chest heavily streaked with Chaetura Black, the streaks and the buff of the breast abruptly terminated as in the adult female. Tail tipped with Ochraceous Buff. Primary-coverts tipped with buffy white. Upper wing-coverts with whitish edgings and dark discs, the latter pointed distally; lesser series margined with grayish white. Iris, bill, and feet as in adult female.

Adult male in non-breeding plumage: Similar to breeding plumage but the dorsal feathers streaked with black and broadly

*Colors of soft parts taken from a specimen in the flesh, not the type.

edged with Cinnamon or Sayal Brown; the tertials Deep Black bordered with rich Auburn; the breast washed with pale brown on the tips; the bill decidedly tinged with brown.

Soon after the breeding period, apparently in late May, both sexes undergo a complete molt. The female assumes a plumage not very different from the breeding plumage, but deeper in tone of coloration. Just before the breeding time, in January or February, a partial molt occurs in which the sharp gray fore parts with a minimum of brown on the back are obtained. The bill then changes, in the male, to the characteristic bright yellow of the breeding bird. This molt may be protracted, in part, almost until the complete molt, and a specimen taken May 1 shows the remains of brown streaked plumage on the occipital region while the remiges and rectrices are very worn, and the bill is very bright. Some adult males show traces of black streaks without brown edges on the occiput and nape. One male from Cajamarca has a rich cinnamon back streaked with black. These are, apparently, extremes of individual variation. Most of the breeding birds show a slight admixture of brown on the dorsal feathers. What appear to be males in first annual plumage are like non-breeding adults but with faint brownish stripes on the breast.

Specimens examined:

- P. a. alaudinus*—Chile: Domeyko 1 ♂ 1 ♀; Olmue, Valparaiso 1 ♂; Paiguano 2 ♂ 1 ♀; Romadillo 1 ♀; Romero 1 ♀; Tambillo 1 ♂; (loc. incert.) 1 ♂.
- P. a. excelsus*—Bolivia: Cochabamba 3 ♂ 1 ♀. Peru: Puno 2 ♂.
- P. a. bipartitus*—Peru: Cajamarca 3 ♂ 1 ♀; Huanuco 3 ♂ 1 ♀; Macate 3 ♂; Matucana 3 ♂ (1 juv.); Milluachaqui 2 ♂; Vitarte 1 ♂.

Phrygilus fruticeti peruvianus subsp. nov.

Type from Matucana, Peru. No. 54034 Field Museum of Natural History. Adult male in breeding plumage. Collected April 28, 1922 by J. T. Zimmer; original number 2130.

Diagnosis.—Similar to *P. f. fruticeti* of Chile but somewhat smaller and with the dorsal streaking much broader and heavier; females and males in non-breeding plumage brighter rufescent above, as well as more heavily streaked.

Habitat. Highlands of Peru.

Description of type. Forehead and lores black, the former with faint indications of grayish tips to the feathers. Crown, occiput and nape Deep Gull Gray with black shaft-stripes, narrower on the hindneck. Back and scapulars Slate Gray with very broad black shaft-stripes, the feathers of the lower back with faint indications of brown tips. Rump clear Deep Gull Gray; upper tail-coverts paler with whitish tips, the longer ones with black shaft-stripes. Tail black with the remains of whitish exterior edgings; inner margins of central feathers Fuscous; tips of all the rectrices inconspicuously gray, those of outer rectrices broad. Fore part of cheeks black. Auriculars and sides of neck Deep Gull Gray. Chin, throat and middle of breast black, the color extending downward over the upper margin of abdomen in the middle. Sides of breast and flanks Deep Gull Gray concolor with sides of neck, with a few flecks of black at tips of shafts. Center of abdomen Buffy White. Under tail-coverts purer white. Wings black; primaries and secondaries finely edged exteriorly with white, brownish toward tips; tertials with remains of fuscous edgings; middle and greater wing-coverts black with a large white spot on the outer webs at the tip, these spots forming two broad white wing-bars; lesser series black, edged with gray. Under wing-coverts and axillaries Deep Gull Gray with blackish bases. Iris Raw Umber; bill Mustard Yellow; feet pale Mustard Yellow. Wing 19 mm.; tail 76; culmen 15; tarsus 25.

Male in non-breeding plumage, freshly molted: Similar to breeding male but the head, back, sides and flanks with Ochraceous Tawny tips and edges almost entirely concealing the gray middle portion. Throat and breast with the black feathers broadly tipped with pale gray. Abdomen suffused with Pale Pinkish Buff. Maxilla Hazel; mandible Ochraceous Tawny; feet Russet.

Female: Upper surface streaked, the feathers centered with Bister, edged on the crown and forehead with Smoke Gray or pale Clay Color,—on the nape and hindneck broadly with Pale Neutral Gray,—on the back and scapulars with Ochraceous Tawny. Rump and upper tail-coverts Light Grayish Olive, the latter with narrow brown shaft-streaks. Tail Olive Brown or Bister, with more or less whitish external edgings and pale tips. Wings as in adult male but browner. Lores and superciliary stripe dull white. Auriculars Tawny Olive or Clay Color, with darker tips. A more or less distinct whitish malar stripe surmounting a second stripe of Clove Brown, the latter sometimes obscured by pale tips to the feathers.

Chin, throat and foreneck Buffy White, the first unspotted, the last two with brown shaft-streaks and more or less distinct sub-basal bars or spots of the same color. Breast duller or grayer, with shaft-lines and spots broader, Clove Brown. Lower breast and flanks whitish with the brown shaft-lines narrow and hair-like, and without basal spots. Flanks more or less heavily washed with Clay Color. Center of abdomen white. Under tail-coverts Pale Buff with brown shaft-lines. Iris Raw Umber; bill Cinnamon Brown, darker on the culmen; feet Cinnamon.

Male in first annual plumage: General color above like adult female, but with the edges to the feathers of head and neck slightly more grayish. Ear-coverts with a more or less faint admixture of gray basally. Throat and upper breast with the black at the bases of the feathers more or less completely obscured by white tips. Lower breast dull Grayish White with brown shaft streaks. Flanks and sides with an ochraceous suffusion and with some shaft-streaks of brown. Center of abdomen white, tinged with buff. Under tail-coverts pale buff with the shaft lines obsolete. Iris, bill and feet as in adult female. In worn plumage the black of the throat is less obscured, the gray of the breast purer, and the back less tawny.

The sequence of plumages in this species is very interesting. A complete molt occurs, apparently, from late June to August, in which the males assume the obscured plumage and reddish brown bill of the non-breeding birds. From this, by the abrasion of the feathers only and without molt, the clear black, white and gray is obtained by the arrival of the breeding period, while the bill gradually turns to a bright yellow. Young males hatched in April or May, or perhaps earlier, wear the juvenal plumage until the July molt, assume the first annual plumage at that time and wear the latter until the following annual molt, when they obtain the adult dress. From this, it appears that the males are not fully adult before they are two years old.

Two adult males of *fruticeti* measure: Wing 98-101 mm.; tail 75-82; culmen 13; tarsus 25.

Fourteen adult males of *peruvianus* measure: Wing 91-98 mm.; tail 71-80; culmen 15-16; tarsus 24-26.

Four adult females of *fruticeti* measure: Wing 89-94 mm.; tail 74-78; culmen 14½-15; tarsus 25-27.

Ten adult females of *peruvianus* measure: Wing 84-90 mm.; tail 69-76; culmen 14-16; tarsus 24-27.

Specimens examined:

P. f. fruticeti—Chile: Province of Atacama 1 ♂ 1 ♀; Coquimbo 1 ♂ 2 ♀; Santiago 2 ♂; Sewell 1 ♂; Valparaiso 5 ♂ 1 ♀.

P. f. peruvianus—Peru: Cajamarca 5 ♂ 3 ♀; Cullcui, Marañon R. 3 ♂; Macate 11 ♂ 5 ♀; Matucana 4 ♂ 2 ♀.

Cassicus leucoramphus peruvianus subsp. nov.

Type from mountains near Panao, Peru. Altitude 10,300 feet. No. 54043 Field Museum of Natural History. Adult male. Collected July 7, 1922 by J. T. Zimmer; original number 2523.

Diagnosis. Similar to *C. l. leucoramphus** from Colombia but with the bill apparently heavier, the culmen more arched and with the blue coloration of the basal portion more restricted, sometimes not reaching the culmen and not so sharply defined anteriorly; the concealed collar above and below is restricted to the neck while the bases of the feathers of adjoining areas are dark gray, darker than in the northern race.

Habitat. Temperate forests of central Peru.

Description of type. General color glossy black. Lower back, rump, and a large shoulder-patch bright yellow (near Light Cadmium). A concealed collar around the neck, at the bases of the feathers white; bases of interscapulars and feathers of the breast, nape, throat and back dark gray (Gull Gray). Crest long (27 mm.). Culmen more or less convex. Bill Light Chalcedony Yellow on distal portion; base of mandible and lower base of maxilla Indigo Blue, the yellow on the culmen reaching practically to the base. Iris light blue (near Parula Blue); feet black. Wing 156 mm.; tail 142; culmen 32; tarsus 32.

Female: Similar to the male but in the single specimen examined the base of the culmen is more broadly blue than in any of the males, although this color is more graduated anteriorly and less sharply defined from the terminal yellow portion than in *C. l. leucoramphus*.

In a large series of specimens from Colombia, examined in this connection, none show any close approach to the characters given for the Peruvian form. The bills are less arched above, appearing more slender, and the base of the culmen in all cases is blue well beyond the nostrils. The concealed white collar is much broader and usually involves the upper back, interscapulars, chest, throat and

* Usually misquoted as *leucoramphus*. The correct citation is *Xanthornus leucoramphus* Bonaparte, Atti della sesta Riunione degli Scienziati Italiani . . . Milano, (Settembre del 1844), p.405, Milan, 1845—Bogota.

sometimes the chin, while the bases of the feathers of adjoining areas are paler gray (Pale Gull Gray). In the type specimen of the proposed new form the shoulder-patch appears larger than in any other specimen I have seen, but this seems to be due to a greater length of feather rather than to a larger extent of plumage involved.

Dr. Hellmayr has shown me a manuscript note of the late Count Berlepsch, in which Peruvian specimens of *C. l. leucoramphus* are described as having the base of the *lower* mandible (*italics mine*), blackish. Taczanowski describes his Peruvian birds in the same manner. It appears that the character has been noted but the difference from Colombian examples was not suspected.

Specimens examined:

C. l. leucoramphus—Colombia: Almaguer, Cauca 1 ♂ 1 ♀ ;
Bogota 1 ? ; Laguneta, Cauca (10,300 ft.) 2 ♂ 2 ♀ ; Paramo
de Tama 3 ♂ 1 ♀ .

C. l. peruvianus—Peru: Mountains near Panao (10,300 ft.) 1 ♂ ;
Rumicruz, Junin (9,700 ft.) 1 ♂ 1 ♀ .

