

ON PHRYGILUS GAYI (EYD. & GERV.) AND ALLIED SPECIES.

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The collection of the United States National Museum contains examples of three species of this perplexing group, viz. *P. gayi* (Eyd. & Gerv.), *P. formosus* (Gould), and an undescribed species from Lake Titicaca, Peru. The two former are represented by specimens received from the National Museum of Chili, and were determined, respectively, as *P. aldunatei* (Gay) and *P. gayi*, in accordance with the very general custom of applying these two names, a custom which I hope to be able to show is erroneous.

The error to which attention has been called has evidently arisen from the circumstance that Eydoux and Gervais included specimens of both species under their *Fringilla gayi*, and that the specimen so labeled in the museum of the Jardin des Plantes which Messrs. Selater and Salvin examined in 1869 (*cf.* "Ibis," 1869, p. 285) was not the type of that species, but one of Gay's wrongly identified specimens. This view of the case is rendered the more certain by the circumstance that Gervais expressly states that the bird which he describes and figures (*Mag. de Zool.* 1834, pl. 23) is one of those collected by Eydoux, making it therefore certain that it is not one of those collected by Gay. Furthermore, a reference to the original description and plate of *F. gayi* is sufficient to remove all doubt as to which species the name belongs to.

It therefore follows, if this statement of the case is correct, that *Emberiza aldunatei* Gay is a pure synonym of *Fringilla gayi* Eyd. & Gerv., and that *Phrygilus formosus* (Gould) is the proper name for the smaller and brighter colored species which Messrs. Selater and Salvin, and others following them, have considered to be the true *P. gayi*.

According to this revision of the matter, the synonymy and characters of the several species are as follows:

Phrygilus gayi (Eyd. & Gerv.)

Fringilla gayi EYD. & GERV. *Mag. de Zool.* 1834, 27, pl. 23 (Chili).—? GOULD, *Zoöl. Beag. Birds*, 1841, 93. (*Nec Chlorospiza gayi* GAY, 1847!)

? *Phrygilus gayi* BONAP. *Consp.* i, 1850, 477.—CAB. *Mus. Hein*, i, 1850, 134 (Chili).—SCL. & SALV. *Ibis*, 1838, 186 (Gregory Bay, Str. Magellan).

Chlorospiza aldunatei GAY, *Faun. Chil.* 1847, 356.

Phrygilus aldunati SCL. *Ibis*, 1869, 285 (*erit.*).—TACZAN. *Orn. Per.*, iii, 1886, 34 (southern Peru).

HABITAT.—Chili and southern Peru.

SP. CHAR.—Head, neck, wings, and tail grayish; back, scapulars, and rump, bright olive or olive-greenish, lower parts olive-yellowish, passing into gamboge-yellow on belly, the anal region and under tail-coverts white; upper mandible blackish (in some very old mounted

specimens faded to light brownish, but always blackish, in contrast with color of lower mandible, in specimens which have not long been exposed to the light); wing 3.00-3.50, tail 2.40-2.65, exposed culmen .48-.50, depth of bill at base .23-.32, tarsus .85-.89, middle toe .61-.65.

Adult male in summer (No. 15246, Chili; Lt. J. M. Gilliss, U. S. N.): Head, neck, and upper chest, uniform deep slate-color, with a plumbeous cast, becoming black on lores and anterior border of chin, malar region, and forehead; back and most of scapulars bright olive-green, the lower back and rump similar but more yellowish; outer and posterior scapulars, lesser and middle wing-coverts and upper tail-coverts slate-gray; rest of wings, and tail, dusky, the feathers broadly edged with slate-gray, this almost uniform over outer surface of the closed wing. Sides of neck, lower chest, breast, belly, sides, and flanks deep wax-yellow or dull Indian yellow, passing into clear gamboge-yellow on middle of belly; anal region and under tail-coverts white. Length (mounted specimen) about 5.50, wing 3.50, tail 2.65, exposed culmen .50, depth of bill at base .32, tarsus .87, middle toe .61.

Adult male (female?) in winter (No. 48971, Santiago, Chili, August, 1862; Nat. Mus. Chili): Similar to the preceding, but colors duller and much less sharply defined, top of head narrowly streaked with dusky, chin, throat, upper chest, and sides of head much lighter gray (inclining to ash-gray), the lores merely dusky, no black round base of bill, hind-neck dull olive-slaty, back much duller olive-green (not sharply contrasted with the color of the hind-neck), rump more greenish, wings and tail more brownish-gray, and breast, sides, and flanks strongly tinged with olive-green. Length (skin) 5.50, wing 3.00, tail 2.40, exposed culmen .49, depth of bill at base .28, tarsus .89, middle toe .65.

Adult female (?) in winter (No. 48970, same locality, date, &c.): Essentially similar to the supposed winter male, but gray of head lighter, the chin and throat and malar region inclining to grayish white, relieved by a broad and conspicuous dusky streak along each side of throat. Yellow of breast, &c., more of a saffron hue (especially next to grayish white of throat), and not extending as far backward as in the male, the lower belly being whitish and the flanks dull, buffy grayish, tinged with olive. Length (skin), 5.70; wing, 3.15; tail, 2.45; exposed culmen, .48; tarsus, .85; middle toe, .62.

Phrygilus formosus (Gould).

Fringilla formosa GOULD, Zool. Beag., iii., 1841, 93 (Tierra del Fuego).

Phrygilus formosus BONAP., Consp., i, 1850, 477.

Chlorospiza gayi GAY, Faun. Chil., 1847, 355 (Valparaiso and southward). (*Nec Fringilla gayi* EYD. & GERV., 1834!)

Phrygilus gayi SCL. & SALV., Ibis, 1869, 285 (Str. Magellan; crit.).

Habitat.—Tierra del Fuego (*Gould*; Punta Arenas, *U. S. Nat. Mus.*); Straits of Magellan (*U. S. Nat. Mus.*); Chili (Valparaiso and southward, *Gay*); southern Patagonia (*Darwin*).

SP. CHAR.—Similar to *P. gayi*, but smaller, with upper mandible colored like the lower (instead of being blackish), gray of head, neck, wings, &c., much bluer, yellow of under parts richer, and color of back, &c., much browner (bright russet or orange-chestnut in adult male).

Adult male (No. 48967, Straits of Magellan, 1864; Nat. Mus. Chili): Head and neck uniform deep grayish blue or bluish plumbeous (becoming darker round base of bill and nearly black on lores), bordered posteriorly with a collar of deep olive-green, broadest across hind neck (?) where about .30 wide; back bright russet or orange-chestnut, tinged with olive-yellow; scapulars chiefly olive-green; rump bright gallstone-yellow, tinged with olive-green posteriorly. Wing-coverts and upper tail-coverts uniform deep bluish gray or plumbeous; remiges and upper tail-coverts dull black edged with deep plumbeous. Breast, sides, and flanks rich gallstone-yellow, or deep Indian yellow, changing to purer, more gamboge, yellow on belly; anal region and under tail-coverts white, the latter extensively bluish gray centrally; tibiae uniform deep ash-gray. Bill (both mandibles) "bluish horn-color." Length (of dried skin), about 5.00; wing, 3.40; tail, 2.50; exposed culmen, .48; depth of bill at base, .32; tarsus, .85; middle toe, .62.

Adult female? (No. 6537, Lafresnaye Collection, Bost. Soc. Nat. Hist.): Similar to the male, as described above, but colors duller; the gray of head, neck, wings, &c., decidedly less bluish; the olive-green collar nearly obsolete (especially across hind-neck); and the back olive-russet, nearly uniform with the olive-yellowish color of rump; the lower parts, however, very much the same. Length (mounted specimen), about 5.50; wing, 3.15; tail, 2.50; exposed culmen, .48; depth of bill at base, .30; tarsus, .85; middle toe, .60.

Young male (No. 107585, Punta Arenas, Tierra del Fuego; M. Lebrun): Above olivaceous, the back and scapulars strongly tinged with russet, and pileum inclining to grayish; prevailing color of wings dull gray, slightly tinged with olive, the outer webs of greater coverts and tertials indistinctly tipped with dull brownish buffy; tail grayish blue, as in adult; an indistinct superciliary streak of light yellowish olive; lores grayish dusky; ear-coverts dull grayish; lower parts dull gallstone-yellow, paler on chin and throat, deeper on breast and sides, tinged with olive on flanks; lower tail-coverts dull pale yellowish. Wing, 3.15; tail, 2.50; exposed culmen, .50; depth of bill at base, .32; tarsus, .85; middle toe, .65.

The supposed female of this species (described above) resembles rather closely the adult male of *P. gayi*, but is decidedly smaller (wing, 3.15 instead of 3.50), has the olive-green of the back strongly washed superficially with russet, the rich olive-yellow of the rump thus appearing brighter by contrast; the yellow of the lower parts is richer (approximating very closely to the hue of Indian yellow), and the thighs are deep gray instead of grayish white. The gray of the head, neck, wings, &c., is, however, exactly the same.

Phrygilus punensis, sp. nov.

Emberiza gayi D'ORB., Mag. Zool., 1337 (Synop. Av.), 75 (La Paz, Bolivia), nec *Fringilla gayi* GERV., 1837.

Phrygilus gayi Tsch., Faun. Per., 1814-'46, 218.—TACZAN., P. Z. S., 1874, 520 (Maraynioc, Arancocha, and Junin, Centr. Peru): 1880, 199 (Cutervo, Northern Peru); Orn. Per., iii, 1886, 32.

HABITAT.—Basin of Lake Titicaca, in Peru and Bolivia.

SP. CHAR.—Similar to *P. gayi* (Gerv.), but much larger, with color of back much browner (decidedly rufescent in male), that of breast, sides, &c., also strongly tinged with rusty instead of yellowish olive or yellowish olive-green, and belly light saffron-yellow instead of clear gamboge.

Adult male (No. 6535, Lafresnaye Coll., Boston Soc. Nat. Hist.): Head, neck, and chest uniform slate-gray, this bordered posteriorly by a collar of deep olive-green, widest across chest (where about .20 broad), narrowest across hind-neck, where almost obsolete; capistrum almost black; back and scapulars tawny-russet, mixed and tinged with olive-yellow, the rump entirely of the latter color; wing-coverts and upper tail-coverts plain slate-gray (lighter than color of head and neck; remiges and tail-feathers dull black, edged with slate-gray. Breast, upper belly, sides, and flanks similar in color to back, but rather lighter and brighter, becoming gradually more olivaceous on flanks and saffron yellowish on belly, the middle portion of the latter nearly pure gamboge or Indian yellow; anal region and under tail-coverts dull white, the latter with centers extensively slate-gray. Upper mandible blackish, edged with paler; lower pale colored (pale bluish or lilae-grayish in life?). Length (mounted specimen), about 6.30; wing (quills not fully grown out), 3.75; tail, 3.00; exposed culmen, .61; depth of bill at base, .32; tarsus, 1.02; middle toe, .70.

Adult female (?), No. 99571, U. S. Nat. Mus., Lake Titicaca, Peru (collector unknown): Head, neck, and upper chest uniform slate-gray, becoming blackish on lores, and indistinctly streaked with dusky on top of head; back and innermost scapulars plain, dull olive-green (decidedly browner than in *P. gayi*); lower back and rump brighter and more yellowish olive-green; exterior scapulars dull brownish gray; lesser and middle wing-coverts and upper tail-coverts slate-gray, with indistinct darker shaft-streaks; greater and primary wing-coverts, primaries, secondaries, and tail-feathers dusky, edged with slate-gray. Sides of neck, lower chest, breast, sides, and flanks deep gallstone yellow, tinged with russet-orange, passing into light saffron yellow on middle of belly; anal region dull white; femoral region, thighs, and under tail-coverts dull light buffy, the latter with broad median streaks of slate-gray. Upper mandible brownish black, lower whitish (apparently pinkish in life); iris "dark brown"; feet brownish. Length (skin), 6.80; wing, 3.65; tail, 2.75; exposed culmen, .62; depth of bill at base, .35; tarsus, 1.00; middle toe, .70.

Phrygilus atriceps (D'Orb. & Lafr.).

Emberiza atriceps D'ORB. & LAFR., Mag. de Zool., 1837 (Synopsis Avium), 76 (Tacora, highlands of Peru)—D'ORB., Voy. Amér. Mérid., Ois., 1839, 363, pl. 47, fig. 2.

Phrygilus atriceps TSCH., Faun. Per., 1844-'46, 218.—BONAP., Consp., i, 1850, 477.—SCL. & SALV., Nom. Neotr., 1:73, 31; P. Z. S., 1876, 16 (Paucartambo).—TACZAN., Orn. Per., iii, 1886, 34 (Southern Peru).

HABITAT.—Highlands of Southern Peru and Bolivia.

SP. CHAR.—Head, neck, and chest uniform black or dusky slate, very abruptly contrasted with the bright chestnut-tawny of the back, and gallstone yellow of the breast; rump and lower back gallstone yellow.

Adult male (type, No. 6533, Lafresnaye Collection, Mus. Boston Soc. Nat. Hist.): Head, upper half of hinder part and sides of neck and entire fore neck down to and including upper chest uniform dull slate-black, with a very regular and sharply defined posterior margin; back, innermost scapulars and lower hind neck bright chestnut-tawny, tinged, especially beneath the surface, with gallstone yellow; exterior scapulars dull gray, tinged with olive-yellowish; lower back, rump, breast, and sides uniform deep gallstone yellow, the sides and flanks tinged with tawny; belly lighter and purer yellow, inclining to gamboge; lower tail-coverts white, with much of their concealed portion slate-gray; anterior lesser wing-coverts yellowish olive-green; rest of wing coverts uniform slate-gray or deep ash-gray; remiges, alula, and tail feathers black, edged with deep ash-gray (more hoary on primaries and rectrices). Upper mandible dusky brownish, paler terminally (apparently blackish in life). Length (of mounted specimen), about 6.00; wing, 3.85; tail, 2.70; exposed culmen, .60; depth of bill at base, .33; tarsus, 1.05; middle toe, .70.

The following synoptical table will facilitate the determination of specimens:

- a*¹. Larger (wing more than 3.50, exposed culmen .60 or more).
*b*¹. Head, neck, and chest black; back chestnut-tawny, rump gallstone-yellow.
Habitat.—Highlands of Peru and Bolivia.....1. *P. atriceps* (D'Orb. & Lafr.).
*b*². Head, neck, and chest slate-gray, bordered posteriorly by an olive-green collar (this indistinct in female); back russet (male) or olive (female), rump olive-yellow (male) or olive-green (female). *Habitat*.—Lake Titicaca basin, Peru and Bolivia.....2. *P. punensis* Ridgw.
*a*². Smaller (wing not more than 3.50, exposed culmen not more than .50).
*b*¹. Upper mandible blackish; back olive-green, the rump brighter, more yellowish; head, neck, wings, &c., deep ash-gray, or plumbeous in adult male (much duller gray, the pileum streaked with dusky in female). *Habitat*.—Chili; Southern Peru; Southern Patagonia?3. *P. gayi* (Eyd. & Gerv.)
*b*². Upper mandible light colored ("bluish horn-color" in life) like lower; back bright russet or orange-chestnut (male) or olive-russet (female), in marked contrast with bright gallstone-yellow or olive-yellow of rump; head, neck, wings, &c., deep bluish plumbeous (male) or plumbeous-gray (female). *Habitat*.—Straits of Magellan (Tierra del Fuego and Southern Patagonia).
 4. *P. formosus* (Gould).