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THE SUBSPECIES OF THE BUSH SHRIKE

Laniarius fulleborni (Including *L. poensis*)

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Laniarius fulleborni, a dark gray bird of the mountains of Nyasaland and adjacent areas, is very different, chiefly in color, from *L. "poensis,"* a glossy black bird of the mountains of Fernando Po and British Cameroon, and they have usually been kept as species. However, there are some intermediate mountains on which occur isolated, widely separated populations, or groups of populations, which bridge the differences by even steps. The habits of both "species" are similar (see Moreau and Sclater, 1933, *Ibis*, p. 195) as is their habitat (mountain forest). Moreau suggested that the two were conspecific, but Sclater disagreed. Chapin (1954, *Bull. Amer. Mus. Nat. Hist.*, 75B: 57) also keeps these forms in two species, saying that *poensis* has sooty black young while *fulleborni* has young with throat and breast dusky olive, and more buffy abdomen. However, geographical variation can occur in immature as well as adult plumages and it is not necessarily a specific character. It seems that only one species is represented. The populations or groups of populations are as isolated in their mountain habitat as though they were on islands. Yet the color changes in a stepped cline of even steps. If the range were continuous, rather than fragmented as it is, perhaps fewer subspecies would be recognized, but it seems advisable to recognize each of the five steps by name and include them all in one species.

Besides color, there are slight size differences, as the following table shows (males and females combined; measurements in millimeters):

	Wing	Tail	Culmen	Tarsus
Fernando Po.....	76, 77	63, 66	21.5, 23	28, 29
Ruwenzori Mt.....	76-81	65-69	22-24	29-31
Usambara Mts.....	84-86	76-82	23-24	31-32
Uluguru Mts.....	83-88	75-81	23-26	33
Southwestern Tanganyika to Rhodesia....	82-86	75-80	22-25	31-33.5

In wing and tail there is a slight gap in the series between Ruwenzori and Usambara birds, but this is less apparent in the culmen and the tarsal measurements show a very smooth increase. It is especially interesting that these widely separated populations represent such a smoothly grading stepped cline. It certainly seems that the variation is not environmentally controlled or adaptive.

I am indebted to Dr. H. Friedmann of the United States National Museum, Dr. D. Amadon of the American Museum of Natural History, and Mr. J. C. Greenway of the Museum of Comparative Zoology for the loan of comparative material. That these birds are rare in collections is shown by my being able to borrow only 11 specimens, which, added to the 15 in Chicago Natural History Museum, gave me a total of only 26 specimens of the five subspecies.

The following are the five recognizable races, two of which are described as new.

Laniarius fulleborni poensis Alexander

Dryoscopus poensis Alexander, 1902, Bull. Brit. Orn. Cl., 13: 37—Fernando Po.

Diagnosis.—A glossy black bird.

Measurements.—Wing, male 77, female 76; tail, male 66, female 63; culmen, male 23, female 21.5; tarsus, 28–29 mm.

Range.—Fernando Po and the mountains of British Cameroon (Mount Cameroon, Ekona, Manenguba, Ndu, Rumpi Hills and Kupé Mountain).

Material.—Two (AMNH), Fernando Po.

Laniarius fulleborni holomelas Jackson

Dryoscopus holomelas Jackson, 1906, Bull. Brit. Orn. Cl., 16: 90—Ruwenzori.

Diagnosis.—Like *poensis* but less deep, glossy black and tail slightly longer.

Measurements.—Wing, male 80, 81, female 76, 77, 77, 78; tail, male 69, female 65, 67, 68, 69; culmen, male 22, 24, female 22, 22, 23, 24; tarsus, 29–31 mm.

Range.—Mountain forests of eastern Belgian Congo border from west of Lake Albert (Kilo) and Ruwenzori south to Urundi and Mount Kahobo north of Albertville; also in Uganda on Ruwenzori.

Material.—Six (CNHM, 4; USNM, 2), Ruwenzori, 7,000–9,000 feet.

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Laniarius fulleborni usambaricus, new subspecies

Type.—Chicago Natural History Museum no. 81987, from Magamba, Usambara, 5,200 feet, Tanganyika Territory. Adult male collected June 14, 1926, by J. T. Zimmer.

Diagnosis.—Like *holomelas* but duller black and with a slight slaty tinge in general plumage and slightly longer wing and tail.

Measurements.—Wing, male 84, 85, 86, female 85; tail, male 76, 78, 81, female 82; culmen, male 23, 23, 24, female 23.5 mm.; tarsus, 31–32 mm.

Range.—Usambara Mountains.

Material.—Four specimens (USNM, 1; CNHM, 3), Usambara (Magamba and Shagai Forest).

Laniarius fulleborni ulugurensis, new subspecies

Type.—Chicago Natural History Museum no. 208594, from Bunduki, 5,000 feet, Uluguru Mountains, Tanganyika Territory. Adult female, collected November 21, 1950, by C. E. Cade.

Diagnosis.—Like *usambaricus* but grayer, more dark slate, above and below.

Measurements.—Wing, male 86, female 83, 88; tail, male 81, female 75, 81; culmen, male 23, female 25, 26 mm.; tarsus, 33 mm.

Range.—Uluguru Mountains, Tanganyika Territory (Nguru Mountain birds which I have not seen may also belong here).

Material.—Three specimens (AMNH, 1; CNHM, 2), Uluguru Mountains and Bunduki, 5,000 feet, Uluguru Mountains.

Laniarius fulleborni fulleborni Reichenow

Dryoscopus fülleborni Reichenow, 1900, Orn. Monatsber., 8: 39—Usafua, north of Lake Nyasa.

Laniarius murinus Reichenow, 1901, Orn. Monatsber., 9: 101—Muhanga.

Laniarius nyasae Boulton, 1931, Ann. Carnegie Mus., 21: 55—Nyasaland.

Diagnosis.—Like *ulugurensis* but grayer above and below.

Measurements.—Wing, male 85, 85, 86, female 82, 83, 83, 84, 84; tail, male 77, 77, 80, female 75, 76, 76, 77; culmen, male 24, 24, 25, 25, female 22, 22, 23, 23.5, 24; tarsus, 31–33.5 mm.

Range.—Southwestern Tanganyika Territory (mountains of Iringa area and those north of Lake Nyasa), the northern third of Nyasaland, and adjacent extreme eastern Northern Rhodesia (Lundazi area).

Material.—Eleven specimens (MCZ, 5; CNHM, 6), Tanganyika Territory, 6 (Kigogo, Ugungwe; Ihoko Forest and Sgale, Poroto Mountains), Nyasaland, 2 (Nyika Plateau and Misuku Mountains) and Northern Rhodesia, 3 (headwaters of Chiri River, Lundazi).

Remarks.—For relegation to synonymy of *murinus* and *nyasae*, both based on immature birds, see Lynes (1934, Jour. f. Orn., 82: 105, 142) and Benson (1937, Ibis, p. 574).

The plumages of this species are still imperfectly known. Benson (1941, Ibis, p. 14) says of this subspecies that the immature is strongly washed with olive below and a faint olive tinge above (“*murinus*” and “*nyasae*” type plumages). We have one such specimen from Lundazi, a male, wing 85, tail 78 mm. However, we also have an immature female from Lundazi, wing 82, tail 78, which is apparently moulting into this plumage and has the feathers of the chin tipped pale gray, giving a barred effect, and the lower breast and abdomen obscurely barred with gray and pale olive, evidently remnants of the nestling plumage. These are the only immatures I have seen. In this species the female is sometimes said to be duller or paler than the male, but in all these specimens the difference in color is only an average one and is very slight.



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