

A REVISION OF THE FORMS OF THE EDIBLE-NEST SWIFTLET, *COLLOCALIA FUCIPHAGA* (THUNBERG).

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During the five years that have elapsed since the writer's revision of the genus *Collocalia* appeared,¹ the United States National Museum has acquired considerable additional material in this group. These specimens show that there are several more forms of *Collocalia fuciphaga* worthy of recognition, and that, in consequence, the ranges and characters of other races are more or less in need of readjustment. The following synopsis of the subspecies of *Collocalia fuciphaga* will, therefore, take the place of the one previously published.² In that review three forms of this species were recognized, not including *Collocalia brevirostris* McClelland, which was treated as a full species. The number is now raised to 10, among which are included *Collocalia brevirostris* and the recently discovered *Collocalia fuciphaga capnitis* Thayer and Bangs.³

The range of *Collocalia fuciphaga*, as a species, is extensive. It occurs west to the Himalaya Mountains at about 76° east longitude; north to central China, the Philippine Islands, Mariana Islands, and the Caroline Islands; east to the Duke of York Island (Union Group) and the Tonga Islands; south to the Loyalty Islands, New Guinea, Java, Nias, and the Seychelles Islands. It seems to be a permanent resident throughout its range.

Although the differences between the several races are apparently slight, they are reasonably constant, for individual variation is not great. As is the case with the other species of the genus, there is practically no sexual difference in either size or color, for which reason no distinction is necessary in color comparisons or measurement averages. All measurements are in millimeters.

The writer is indebted to Dr. Charles W. Richmond for many courtesies incident to the preparation of the present paper; also to Mr. William Palmer for the use of his Javan material; and to Mr. Outram Bangs for the loan of specimens additional to the United States National Museum series.

¹ Proc. Acad. Nat. Sci. Phila., July 26, 1906, pp. 177-212.

² Ibid. pp. 185-189.

³ Bull. Mus. Comp. Zool., vol. 52, 1909, p. 139.

COLLOCALIA FUCIPHAGA AMECHANA, new subspecies.

Chars. subsp..—Similar to *Collocalia fuciphaga fuciphaga*, but somewhat larger; lower parts more grayish; upper surface darker, more blackish.

Description..—Type, adult female, No. 171072, U.S.N.M.; Pulo Jimaja, Anamba Islands, September 19, 1899; Dr. W. L. Abbott. Upper parts clove brown, with a slight metallic greenish sheen, the rump decidedly paler — dark hair brown; wings and tail blackish, with a decided metallic greenish sheen, the inner edges of the feathers lighter, more brownish; lores clove brown, the bases of the feathers pure white; cheeks, auriculars, and sides of neck deep smoky brown; lower surface grayish hair brown, darkest on chin and longest under tail-coverts, lightest on anal region; lining of wing clove brown; "iris dark brown; feet dark brown."

Measurements..—Wing, 110.5¹–113.5¹ (average, 112) mm.; tail, 51¹–51.5¹ (51.3); exposed culmen, 4.1–5 (4.6); tarsus, 9–9.3 (9.2).

Type-locality..—Pulo Jimaja, Anamba Islands.

Geographical distribution..—Pulo Jimaja and probably also other of the Anamba Islands.

The birds which form the basis of this new subspecies the writer recorded as *Collocalia fuciphaga elaphra* in his recent revision of the genus *Collocalia*,² but further material and further investigations show that they doubtless represent a local race, probably confined to the Anamba Islands. Curiously enough this new bird is nearest in color to *Collocalia fuciphaga elaphra*³ from the Seychelles Islands, but differs from that form in less brownish, rather darker, more glossy, more uniform upper parts; darker posterior lower surface; and in probably smaller size, although the molting condition of the primaries and rectrices makes this somewhat uncertain. But, at any rate, the form may be characterized by color alone.

Measurements of specimens of Collocalia fuciphaga amechana.

U. S. N. M. No.	Sex.	Locality.	Date.	Collector.	Total length. ⁴	Wing.	Tail.	Exposed culmen.	Tarsus.
171071	Female	Pulo Jimaja, Anamba Islands.	Sept. 19, 1899	Dr. W. L. Abbott.	mm. 127.0	mm. 113.5 ⁵	mm. 51.5 ⁶	mm. 5.0	mm. 9.3
171072 ⁶	do	do	do	do	124.0	110.5 ⁵	51.0 ⁵	4.1	9.0

¹ Molting; full measurements are probably somewhat greater than here given.

² Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 189.

³ *Ibid.*, p. 188.

⁴ Measured in the flesh by the collector.

⁵ Molting.

⁶ Type.

COLLOCALIA FUCIPHAGA ELAPHRA Oberholser.

Collocalia fuciphaga elaphra OBERHOLSER, Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 188 (Mahé Island, Seychelles Islands).

Chars. subsp.—Resembling *Collocalia fuciphaga amechana*, but with upper surface more brownish, rather lighter, less glossy, and less uniform, the pileum more contrasted with the back; posterior lower parts paler, and with less evident dark shaft streaks; apparently also somewhat smaller.

Measurements.—Wing, 120.5–121 (average, 120.8) mm.; tail, 51; exposed culmen, 4–4.5 (4.3); tarsus, 9–9.5 (9.3).

Type-locality.—Mahé Island, Seychelles Islands.

Geographical distribution.—Mahé Island, and probably other islands of the Seychelles group.

This well-marked race is easily distinguished from the Javan *Collocalia fuciphaga fuciphaga* by its much greater size, lighter under parts, and rather darker upper surface. By the above separation of the Anamba Islands form it becomes confined, so far as known,¹ to the Seychelles Islands.

Measurements of specimens of Collocalia fuciphaga elaphra.

Museum and number.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
U. S. N. M. 119780..	Female.	Mahé, Seychelles Islands.	Apr. 17, 1890	Dr. W. L. Abbott.	mm. 120.5	mm. 51.0	mm. 4.5	mm. 9.0
U. S. N. M. 119779 ¹..	.....	.....do.....	.....do.....	.....do.....	121.0	51.0	4.0	9.5

COLLOCALIA FUCIPHAGA BREVIROSTRIS (McClelland).

Hirundo brevirostris McCLELLAND, Proc. Zool. Soc. Lond., 1839, p. 155 (Assam).

Chars. subsp.—Similar to *Collocalia fuciphaga fuciphaga*, including the lighter-colored rump; but much larger, and with tail somewhat less deeply emarginate.

Measurements.—Wing, 124–127 mm.; tail, 55–59; exposed culmen, 5.5; tarsus, 10.

Type-locality.—Assam.

Geographical distribution.—Himalaya Mountains, from Dálhousie, about 76° east longitude, east through Nepal and Sikhim to Assam and Manipur.

This bird the writer previously considered as a full species,² but the discovery of *Collocalia fuciphaga capitis*,³ which is intermediate in size between *C. f. brevirostris* and *C. f. fuciphaga*, indicates that the former is, as Dr. Hartert considers it,⁴ only a subspecies.

¹ Type.

² Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 189.

³ Thayer and Bangs, Bull. Mus. Comp. Zool., vol. 52, 1909, p. 139.

⁴ Tierreich, Lief. 1, 1897, p. 68.

COLLOCALIA FUCIPHAGA CAPNITIS Thayer and Bangs.

Collocalia fuciphaga [sic] *capnitis* THAYER and BANGS, Bull. Mus. Comp. Zool., vol. 52, May, 1909, p. 139 (Wan-tao-shan, Hupeh, China).

Chars. subsp.—Resembling *Collocalia fuciphaga fuciphaga*, but much larger; lower parts much more grayish, with dark shaft streaks more conspicuous; upper surface less brownish and more uniform—the rump, while appreciably paler than the back, being much less thus contrasted.

Description.—Type, adult male, No. 50013, Museum of Comparative Zoology; Wan-tao-shan, Hupeh, central China, June 5, 1907; Walter R. Zappey. Upper parts clove brown, slightly greenish, the rump somewhat paler than the back, but not conspicuously so; tail clove brown, all but the outer pair very slightly glossed with greenish; exposed surface of the wing-coverts like the back; wing-quills clove brown, very slightly glossed on exterior webs with greenish, the inner webs much paler, more so basally; ear-coverts and sides of neck smoky brown; lores pure white basally, the feather tips clove brown; under surface somewhat brownish smoke gray, a little the darkest on the breast, posteriorly with very evident dark brown shaft lines, these heaviest and darkest on the lower tail-coverts.

Measurements.—Wing, 122 mm.; tail, 58; exposed culmen, 5; tarsus, 10.1.

Type-locality.—Wan-tao-shan, Province of Hupeh, China.

Geographical distribution.—Province of Hupeh, central China.

This northern race is apparently about the size of *Collocalia fuciphaga elaphra*, perhaps a little larger; but it is very much less brownish above, with a decidedly more greenish sheen, and the rump is but little paler than the back; the smoky gray of the lower surface is less brownish, and is darker posteriorly; the dark shaft streaks on the breast and abdomen are more conspicuous. Compared with *Collocalia fuciphaga amechana*, of the Anamba Islands, it is larger, more brownish, somewhat more greenish-glossed on the upper parts, with the rump much less paler than the back; lower surface not so brownish, and posteriorly darker; dusky shaft streaks on breast and abdomen more evident.

The type is the only specimen thus far known.

COLLOCALIA FUCIPHAGA VESTITA (Lesson).

Salangana vestita LESSON, l'Echo du Monde Savant, ser. 2, vol. 8, 1843, p. 134 (Sumatra).

Collocalia nidifica GRAY, Genera Birds, vol. 1, 1845, p. 55 (Sumatra).

Chars. subsp.—Similar to *Collocalia fuciphaga fuciphaga*, but apparently somewhat larger; lower surface somewhat lighter; upper parts decidedly darker, more blackish (less brownish), and almost uniform, the rump not appreciably lighter than the back, the pileum scarcely, if any, darker.

Measurements.—Wing, 111–118 (average, 114.1) mm.; tail, 48–52 (50.5); exposed culmen, 4–5 (4.6); tarsus, 9–9.5 (9.1).

Type-locality.—Sumatra.

Geographical distribution.—Sumatra, Simalur Island, and the southern part of the Malay Peninsula.

This subspecies may be distinguished from *Collocalia fuciphaga amechana* by its darker, more blackish (less brownish) upper parts, and its dark rump, uniform in color with the back. From *Collocalia fuciphaga elaphra*, its smaller size, darker, less brownish, more uniform upper surface (the rump concolor with the back), and its darker posterior ventral surface separate it easily. It is decidedly smaller than *Collocalia fuciphaga capnitis*, and darker, more blackish above, with less of greenish gloss; the rump is not at all paler than the back; the lower parts are rather more brownish, with much less conspicuous shaft-streaks posteriorly.

The names for the present race and their application were discussed in my previous paper.¹

No specimens from either Borneo or the Natuna Islands have been available, and the form of this species occurring in these localities is therefore in doubt.

Measurements of specimens of Collocalia fuciphaga vestita.

Museum and number.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
U.S.N.M., 179170.	Male....	Simalur Island, western Sumatra.	Dec. 7, 1901	Dr. W. L. Abbott.	mm. 111.0	mm. 51.0	mm. 5.0	mm. 9.0
U.S.N.M., 179171.	Female....	do.....	do.....	do.....	112.5	48.0	4.5	9.0
U.S.N.M., 178933.	Male....	Tanjong Silantei, eastern coast of Johore, Malay Peninsula.	July 26, 1901	do.....	118.0	51.0	5.0	9.0
A.N.S. Phila.....	.....	Sumatra.....	.....	.....	115.0	52.0	4.0	9.0

COLLOCALIA FUCIPHAGA AEROPHILA, new subspecies.

Chars. subsp.—Similar to *Collocalia fuciphaga vestita*, but lower parts much darker, somewhat more grayish (less brownish); upper surface darker, more blackish (less brownish).

Description.—Type, adult male, No. 179737, U.S.N.M.; Siaba Bay, Nias Island, western coast of Sumatra, March 16, 1903; Dr. W. L. Abbott. Upper parts blackish clove brown, with a slight greenish gloss; wings and tail brownish black with greenish or violet reflections, the inner edges of the feathers dull brown; lores clove brown, the bases of the feathers pure white; cheeks, auriculars, and sides of neck deep smoky brown; lower surface deep grayish hair brown; lining of wing clove brown.

Measurements (of type).—Wing, 114.5 mm.; tail, 54; exposed culmen, 4.5; tarsus, 8.

¹ Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 187.

Type-locality.—Siaba Bay, Nias Island, western coast of Sumatra.

Geographical distribution.—Island of Nias.

This race differs from *Collocalia fuciphaga fuciphaga* in its somewhat greater size; much more blackish (less brownish), more uniform upper surface, the rump not at all paler than the back; and darker, less brownish lower parts. It is much darker, less brownish (more blackish) above than *Collocalia fuciphaga amechana*, the rump concolor with the back, instead of decidedly paler; and the entire inferior surface is very much more deeply colored. It departs still more from *Collocalia fuciphaga elaphra* in its smaller size, uniform and much darker, less brownish, more greenish glossed upper surface, and much darker, less brownish under parts. Compared with *Collocalia fuciphaga capnitis*, it is much smaller; is decidedly darker, more blackish, more uniform above, and darker, with less evident dusky shaft streaks below.

The single specimen on which the separation of this race is based was referred by the writer, in his previous paper,¹ to *Collocalia fuciphaga fuciphaga*, under a mistaken conception of the characters of true *Collocalia fuciphaga fuciphaga* from Java, owing to imperfect and scanty material; but the acquisition of more Javan specimens proves that the Nias bird is very distinct.

COLLOCALIA FUCIPHAGA MEARNSI,² new subspecies.

Chars. subsp.—Resembling *Collocalia fuciphaga vestita*, but under surface much more grayish (less brownish); abdomen usually lighter; upper parts, particularly the pileum, more blackish or greenish (less brownish).

Description.—Type, adult female, No. 208356, U.S.N.M.; Hights-in-the-Oaks, altitude 7,000 feet, near Paoay, Benguet, Luzon Island, Philippine Islands, July 28, 1907; Dr. Edgar A. Mearns. Upper parts blackish clove brown, with a slight greenish sheen; wings and tail brownish black with greenish or violet reflections, the inner edges of the feathers dull brown; lores clove brown, the bases of the feathers pure white; cheeks, auriculars, and sides of neck deep smoky brown; under surface smoke gray; lining of wing clove brown.

Measurements.—Wing, 106–119.5 (average, 111.5) mm.; tail, 45–52 (49.3); exposed culmen, 3.5–5 (4); tarsus, 8.1–10 (9).

Type-locality.—Hights-in-the-Oaks, near Paoay, Province of Benguet, Luzon Island, Philippine Islands.

Geographical distribution.—Islands of Luzon, Mindoro, Mindanao, Cebu, Negros, Panay, and Palawan, in the Philippine Archipelago.

This new race may be readily distinguished from *Collocalia fuciphaga fuciphaga* by its darker, less brownish, more greenish-glossed,

¹ Proc. Acad. Nat. Sci. Phila., July 26, 1906, pp. 186–187.

² Dedicated to Dr. (Lieut. Col.) Edgar A. Mearns, the well-known explorer, who collected the entire series of specimens in the U. S. National Museum.

and more uniform upper surface, the rump concolor with the back, instead of paler; lighter, and much less brownish (more grayish) lower parts. From *Collocalia fuciphaga amechana* it differs in its darker, more blackish (less brownish), more uniform upper surface, and lighter, less brownish ventral surface. It is still more different from *Collocalia fuciphaga elaphra*, by reason of its much smaller size; much darker, less brownish, and more uniform upper surface; less brownish under surface; and darker abdomen and crissum. Compared with *Collocalia fuciphaga capnitis* it is much smaller, with upper surface darker, more blackish (less brownish), and rump concolor with back, lower parts less brownish, anteriorly rather lighter, and posteriorly with less well-marked dusky shaft lines. Although on the upper surface it is practically identical with *Collocalia fuciphaga aerophila* of Nias Island, it is easily separable by its decidedly paler and much less brownish lower parts.

A satisfactory series of 15 specimens, collected by Dr. Edgar A. Mearns on the islands of Mindanao, Mindoro, and Luzon, shows that the birds of the Philippine Islands are not identical with either the Javan race (*Collocalia fuciphaga fuciphaga*) or the birds of the islands in the Pacific Ocean farther eastward, as the writer formerly supposed,¹ but have well-marked characters of their own, as above set forth. Some of the individuals of this series are more brownish both above and below than the average, but as a whole they are very uniform in color. It is noticeable that there is considerable variation in measurements.

Measurements of specimens of Collocalia fuciphaga mearnsi.

U. S. N. M. number.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
191447	Male....	Mercedes, Mindanao Island, Philippine Islands.	Dec. 19, 1903	Dr. E. A. Mearns	mm. 114.0	mm. 50.0	mm. 5.0	mm. 10.0
208354	...do....	Hights-in-the-Oaks (near Paoy), Benguet, Luzon Island, Philippine Islands.	July 25, 1907	...do.....	119.5	52.0	3.7	8.1
208353	...do....	...do.....	...do.....	...do.....	109.0	50.5	4.0	9.0
208348	...do....	Baguio, Benguet, Luzon Island, Philippine Islands.	Apr. 30, 1907	...do.....	112.0	52.0	4.0	9.0
208351	...do....	...do.....	July 12, 1907	...do.....	112.5	51.5	4.5	9.5
201920	.....	Buena Vista (Mangyan clearing), Mindoro Island, Philippine Islands.	Nov. 5, 1906	...do.....	106.0	46.5	3.6	9.3
201922	.....	Manay, Mindanao Island, Philippine Islands.	Oct. 6, 1906	...do.....	108.5	45.0	4.0	8.9
190172	Female..	Pantar, Mindanao Island, Philippine Islands.	Aug. 13, 1903	...do.....	108.0	48.0	4.5	8.5
201921	...do....	Mangyan clearing, Alog River, Mindoro Island, Philippine Islands.	Nov. 10, 1906	...do.....	107.0	46.0	3.5	9.1
208350	...do....	Baguio, Benguet, Luzon Island, Philippine Islands.	May 9, 1907	...do.....	115.0	50.0	.....	9.0
208355	...do....	Hights-in-the-Oaks, Benguet, Luzon Island, Philippine Islands.	July 25, 1907	...do.....	.....	47.0	3.8	9.0
208352	...do....	...do.....	...do.....	...do.....	112.0	51.0	4.0	9.0
208570	...do....	...do.....	July 26, 1907	...do.....	113.0	50.0	4.1	8.7
208356 ²	...do....	...do.....	July 28, 1907	...do.....	113.0	50.0	3.5	9.1

¹ Proc. Acad. Nat. Sci. Phila., July 26, 1906, pp. 186-187.

² Type.

COLLOCALIA FUCIPHAGA VANIKORENSIS (Quoy and Gaimard).

Hirundo vanikorensis QUOY and GAIMARD, Voy. *Astrolabe*, Zool., vol. 1, 1830, p. 206, pl. 12, fig. 3 (Vanikoro Island, Santa Cruz Islands, Pacific Ocean).

Cotyle vanicorensis BOIE, Isis, 1844, p. 170 (nom. emend. pro *Hirundo vanikorensis* Quoy and Gaimard).

Cypselus inquietus KITTLITZ, Denkwurd. Reise Russ. Amer., vol. 2, 1858, p. 26 (Uala Island, Caroline Islands, Pacific Ocean).

Chars. subsp.—Similar to *Collocalia fuciphaga mearnsi*, but upper surface more brownish; lower parts decidedly darker and more brownish.

Measurements.—Wing, 109–114 (average, 111.5) mm.; tail, 54; exposed culmen, 4; tarsus, 9.

Type-locality.—Vanikoro Island, Santa Cruz Islands, Pacific Ocean.

Geographical distribution.—Islands of the western Pacific Ocean: north to the Caroline Islands; west to New Guinea; south to the Loyalty Islands; and east to the Tonga Islands and the Duke of York Island (Union group).

From *Collocalia fuciphaga fuciphaga* the present race may be separated by its much darker, more blackish (less brownish), more uniform upper surface; dark rump concolor with the back; and decidedly darker under parts. It is distinguishable from *Collocalia fuciphaga amechana* by its darker, more blackish upper parts, dark rump uniform with the back, and far more deeply colored and more brownish ventral surface. Compared with *Collocalia fuciphaga elaphra* it is much smaller, with darker, less brownish upper surface, rump not lighter than the back, and very much more deeply colored lower parts. It is very much smaller than *Collocalia fuciphaga capnitis*, and has the upper surface darker, less glossed with greenish, the rump concolor with the back, the lower parts much darker, more brownish, with scarcely appreciable darker shaft lines on the posterior portion. It may be distinguished from *Collocalia fuciphaga vestita* by its very much more deeply colored, more brownish lower surface, and slightly darker, less greenish upper parts. It is apparently closest in color to *Collocalia fuciphaga aerophila*, but differs in rather more brownish, less greenish-glossed upper surface, and in darker, decidedly more brownish lower parts.

Birds from the Caroline Islands are, by the characters above given, with ease subspecifically separable from true *Collocalia fuciphaga fuciphaga* of Java; although the writer on a previous occasion¹ was not able to distinguish the present race with the material then available.

Without specimens from the Santa Cruz and neighboring islands, I am now obliged to consider the birds from there the same as those from the Carolines, although they may represent an additional race. The name to be applied to the present form is, therefore, of necessity, *Hirundo vanikorensis* Quoy and Gaimard,² from Vanikoro Island, the

¹ Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 186.

² Voy. *Astrolabe*, Zool., vol. 1, 1830, p. 206, pl. 12, fig. 3.

plate and description of which, moreover, apply very well to the Caroline Islands bird, subsequently called *Cypselus inquietus* by Kittlitz.¹

Measurements of specimens of Collocalia fuciphaga vanikorensis.

U. S. N. M. number.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	mm.	mm.	mm.
212337	Male..	Kusaie Island, ² Caroline Islands.	Feb. 8, 1900	C. H. Townsend.	114.0	54.0	4.0	9.0
212336	.....	Uala Island, Caroline Islands....	Feb. 16, 1900	.....do.....	109.0	54.0	4.0	9.0

COLLOCALIA FUCIPHAGA TACHYPTERA, new subspecies.

Chars. subsp.—Similar to *Collocalia fuciphaga vanikorensis*, but much lighter, more brownish above, and paler below.

Description.—Type, adult male, No. 188855, U.S.N.M.; Guam Island, Mariana Islands, July 17, 1900; A. Seale. Upper parts rather light smoky clove brown, with a slight greenish sheen, and somewhat darker on pileum; wings and tail clove brown with a slight greenish gloss; lores clove brown, the bases of the feathers pure white; sides of head and neck deep smoky brown; lower surface hair brown; lining of wing clove brown.

Measurements.—Wing, 110 mm.; tail, 50; exposed culmen, 3.5; tarsus, 8.

Type-locality.—Guam Island, Mariana Islands.

Geographical distribution.—Island of Guam, and probably other islands of the Mariana group.

The present form is distinguishable from *Collocalia fuciphaga fuciphaga* chiefly by its dark-colored rump concolor with the back, and by rather lighter upper surface. From *Collocalia fuciphaga amechana* it differs as does *Collocalia f. fuciphaga*, and additionally in its lack of a pale rump. It is much smaller than *Collocalia fuciphaga elaphra*, lighter, more uniform above (the rump not paler than the back), and darker below. Compared with *Collocalia fuciphaga capnitis*, it is decidedly smaller, rather lighter and much more brownish above, with the rump not even a little paler than the back; is more brownish on the lower surface, with much less evident dusky shaft lines. It is somewhat smaller than *Collocalia fuciphaga vestita*, and decidedly lighter, more brownish above. It may be distinguished from *Collocalia fuciphaga aerophila* by somewhat smaller size, much lighter, more brownish upper parts, and somewhat paler, decidedly more brownish lower surface. From *Collocalia fuciphaga mearnsi* it may be separated by its much lighter, more brownish upper parts, and darker, more brownish under surface.

The single specimen upon which the above description is based was recorded as *Collocalia fuciphaga fuciphaga* in my previous paper on *Collocalia*,³ but judging from the material now available it must be considered as belonging to a distinct race.

¹ Denkwurd. Reise Russ. Amer., vol. 2, 1858, p. 26.

² Inadvertently recorded (Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 187) as from Uala Island.

³ Proc. Acad. Nat. Sci. Phila., July 26, 1906, p. 186.