

# American Museum Novitates

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PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY  
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

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NUMBER 1985

FEBRUARY 8, 1960

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## Systematic Notes on Palearctic Birds. No. 39 Caprimulgidae: A New Species of *Caprimulgus*

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During the study of the Palearctic Caprimulgidae, the results of which will be published in part in a subsequent paper in this series, I had the privilege of examining a number of specimens that were kindly lent to me by the British Museum (Natural History). Included in this material was the single specimen that Frank Ludlow collected at Goma in Chinese Turkestan on September 7, 1929, which he reported upon in the "Ibis" (1933, p. 687). Goma (formerly called Pishan) and spelled "Guma" on the more recent maps, is in the arid plain of western Sinkiang between the desert and the foothills of the western Kun Lun. It is located at latitude  $37^{\circ} 31' N.$ , longitude  $78^{\circ} 17' E.$ , about 115 kilometers southeast of Yarkand. Several expeditions have collected birds in this region, but, with the single exception of another bird reported by Scully (1876, p. 133), no other specimen of *Caprimulgus* has been collected in the region of Yarkand. This specimen is discussed below.

Frank Ludlow (*loc. cit.*) identified the specimen from Goma as *Caprimulgus aegyptius aegyptius*, but its similarity to *aegyptius* is superficial, and, as I cannot identify it as any known species, I believe it represents a new one, which I propose to name:

***Caprimulgus centralasicus* Vaurie, new species**

TYPE: Adult female, Goma [or Guma], 4000 feet, western Sinkiang, western China. In the collection of the British Museum (Natural His-

tory); registry number, No. 1931.7.8.256; original collector's No. 467. Collected on September 7, 1929, by Frank Ludlow.

**DIAGNOSIS:** A very pale, "sandy," and small *Caprimulgus*; resembling *C. aegyptius* more closely in the coloration of its body plumage than any other known species of *Caprimulgus*, but differing from *aegyptius* by having a different color pattern on the wing, by being much smaller, and in other less conspicuous respects discussed below.

**RANGE:** Probably the sandy foothills and plains of the southern Tarim Basin along the Kun Lun, but known so far only from the type collected at Goma.

**DESCRIPTION OF TYPE:** Upper parts: Entire upper parts very pale (fig. 1), sandy, buffy gray, each feather very finely freckled and marked with irregular, very narrow, wavy bars of dark brown; the feathers more rufous at the outer margins, especially on the crown and nape, and, to a lesser extent, on the scapulars. The centers of most crown feathers, and of some feathers of the mantle and scapulars, are blackish brown and vermiculated along the shaft, resulting in a streaked, somewhat flammulated appearance. The upper tail coverts and the upper surface of the central tail feathers are paler than the back and very finely barred with brown, not streaked.

Sides of the head: Lores creamy buff, the tips of the small feathers in front of, above, and directly behind the eye are tipped with dull silvery white, forming a rather ill-defined superciliary streak; the cheeks are dull chestnut.

Under parts: The feathers of the throat are disarranged, and some were lost in the skinning of the bird, but, as far as I can ascertain, only an ill-defined small patch of buffy white seems to have been present at the sides of the lower throat; upper breast very finely and densely barred with dark brown, the bars becoming more distinct, broader, and more widely spaced from the upper to the middle of the breast, upper abdomen, and flanks; center of the lower abdomen, region of the vent, and under tail coverts paler than the rest of the under parts, and not barred, but a very small, arrow-shaped spot of brown is present at the tips of the longer coverts; the ground color of the entire under parts is creamy buff.

Wings and tail: The upper surface of the wing is very pale, the distal end of the primaries being grayish sand, very finely freckled with grayish brown; the lesser, middle, and greater upper wing coverts resemble the coloration of the back, but their tips are almost uniformly sandy buff, forming three vaguely defined "wing bars"; the primary coverts are boldly and regularly spotted with dark brown and pale chestnut

or rufous cinnamon; these rufous and brown spots alternate regularly on the outer web of the primaries, but on the inner webs the brown pigment forms irregular transverse bars, more or less interconnected by spots or irregular vertical bands of brown. The color pattern on the under side of the primaries (fig. 2) is similar to that of the upper surface of these feathers, but the brown and rufous pigments are duller and paler. The top of the central tail feathers is buffy gray (see above), finely marked, and faintly barred with brown, but the outer tail feathers are more heavily marked with diffused bars of dark brown on a darker and more rufous background than on the central tail feathers; the pattern on the under side of the outer tail feathers is more faint and diffused than on the upper surface of these feathers.

WING FORMULA:  $1 < 2$ , 3 (which are subequal, or 3 may be slightly  $> 2$ )  $> 4 > 5 > 6 > 7 > 8 > 9 > 10$ . Length of the wing, 162 (see below); tail, 96; tarsus, 14; bill from the corner of the mouth, 18. Ratio of the length of the tail to that of the wing, 0.60. Wing/tip index (ratio of the gap between the tips of the longest and shortest primaries to the length of the longest primary), 0.42. The tail is slightly rounded; the feet and claws are very weak and pale gray on the dry skin; the rectal bristles are long and very strong, they measure 18, and the longest ones project slightly beyond the tip of the bill.

DISCUSSION: Frank Ludlow wrote on the label that his bird was "shot in sand hills covered with low scrub." *Caprimulgus aegyptius* is adapted to a similar habitat and resembles *centralasicus* in general coloration, but the two birds differ in a number of details and strikingly so in the pattern of the wing. In *centralasicus* the under surface of the primaries is rather irregularly marked with brown on a rufous cinnamon background (fig. 2), but in *aegyptius* the brown markings are much more uniform, tooth-like, and sharply defined on a white background. The appearance of the wing is very different in the two birds, and, judging by other species of *Caprimulgus*, such a clear-cut difference seems to me to be of specific importance. In *aegyptius* the wing pattern is identical in both sexes and at all stages of the plumage, as shown by four young birds of both sexes with very loose feather structure and traces of down, and also by a subadult bird.

The other differences in coloration between *centralasicus* and *aegyptius* are numerous but less conspicuous. *Centralasicus* (fig. 1) is more streaked above, as the dark markings in *aegyptius* are usually restricted to the distal end of the feather and form spots rather than streaks. The central tail feathers of *centralasicus* are much less sharply barred above, and the dark pattern on the outer tail feathers is more diffused

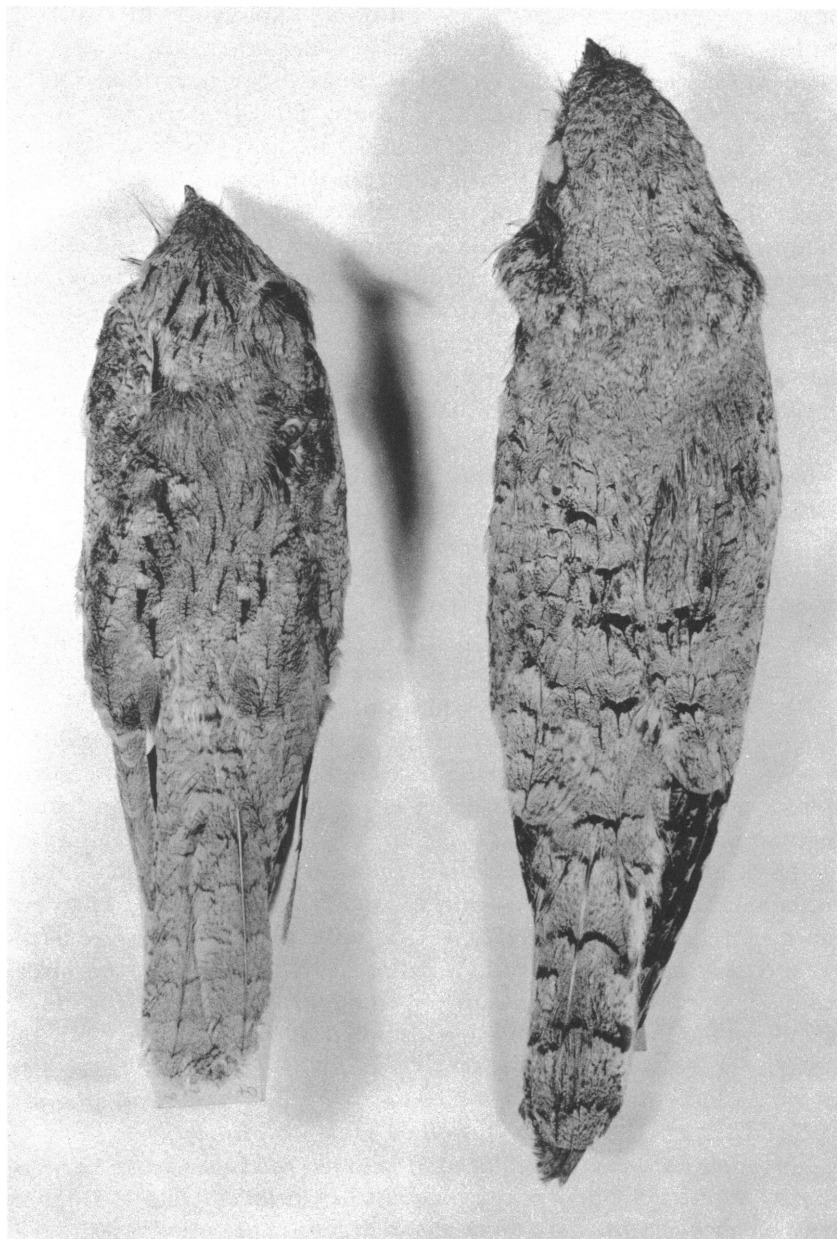


FIG. 1. (Left) *Caprimulgus centralasicus*, (right) *C. aegyptius*.

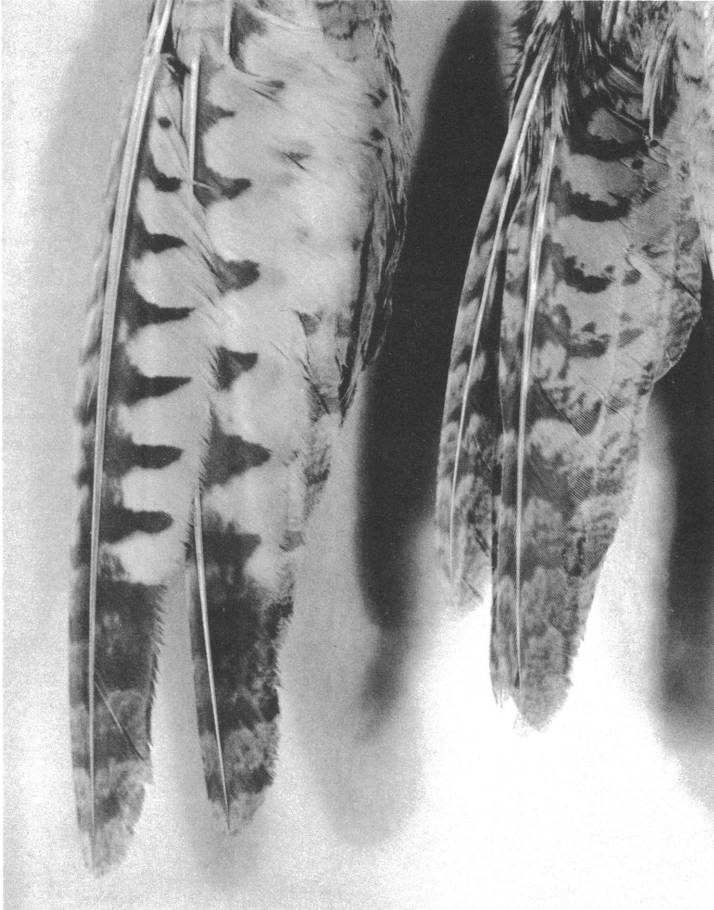


FIG. 2. Pattern and coloration of the under surface of the primaries in (left) *Caprimulgus aegyptius* and (right) *C. centralasicus*.

above and below. *Aegyptius* lacks the superciliary streak of *centralasicus*, and its cheeks are not chestnut as in the latter, but grayish, resembling the color of the back; the patches at the base of the throat are pure white and sharply defined in *aegyptius*, buffy and poorly defined in *centralasicus*. The upper wing coverts of *aegyptius* are also less pale at the edges, and its primaries are also darker above and less regularly marked with alternating bands of brown and cinnamon on their outer webs.

The difference in size between *aegyptius* and *centralasicus* is very marked and is obvious at a glance (fig. 1). The body plumage of the

type of *centralasicus* is fresh and had been renewed recently. The inner primaries are full grown, but the three outer pairs are still molting, although their shape and relative length suggest that they are virtually full grown with the exception of the outermost primary on each wing which I estimate is probably about 15 mm. short of the length it would have reached. The second and third pair are probably only 3 mm. short, perhaps less. The length of all the primaries in *centralasicus* and *aegyptius* are compared in table 1 together with other measurements. The specimen of *aegyptius* selected is a female of about average size, not molting, and of its eastern race.

TABLE 1  
COMPARATIVE MEASUREMENTS OF THE TYPE (ADULT FEMALE) OF *Caprimulgus centralasicus* AND OF AN ADULT FEMALE OF *C. aegyptius arenicolor*

	<i>C. centralasicus</i>	<i>C. aegyptius</i>
Wing length		
First primary	142 + <sup>a</sup>	200
Second primary	157 + <sup>b</sup>	203
Third primary	159 + <sup>c</sup>	198
Fourth primary	149	170
Fifth primary	134	155
Sixth primary	121	139
Seventh primary	109	128
Eighth primary	102	120
Ninth primary	98	114
Tenth primary	93	109
Tail length	96	120
Tarsus length	14	24
Bill length <sup>d</sup>	18	31

<sup>a</sup> Still molting, estimated to be about 15 mm. short (see text).

<sup>b</sup> Still molting, estimated to be about 3 mm. short (see text).

<sup>c</sup> Still molting, estimated to be about 3 mm. short (see text).

<sup>d</sup> Measured from the corner of the mouth.

The measurements of the specimens of *C. aegyptius arenicolor* that I have examined from its breeding range (in addition to the specimen in table 1) are as follows: Adults, male, wing length, 210; tail length, 130; tarsus length, 23; bill length, 28; females, respectively, 201, 206, 214+; 118, 120, 127; 22, 24, 26; 30, 30.5, 31; not sexed, 204, 214+; 120, 120; 23, 24; 33, 34. The range of measurements in the seven adults (including the specimen in table 1) is: wing, 201–214+ (207+); tail, 118–130 (122); tarsus, 22–26 (24); bill, 28–34 (31). A subadult female measures 196, 122, 23, 27; an immature male, 201, 115, 19, 28; and an

immature female, 201, 116, 19, 25. In a winter visitor of *arenicolor* to the Sudan, a female, the wing measures 227 (l), the tail, 126, the tarsus, 22, and the bill, 33. In the 20 specimens of *arenicolor* measured by Spangenberg (1951, p. 482) from Russian Turkestan, the wing length varied from 193 to 212, with an average of 209 in males and 208 in females, the wing length being the only measurement given by Spangenberg.

The measurements listed above and in table 1 show that *centralasicus* is a much smaller bird than *aegyptius*. It has also a more rounded wing, the wing tip index in *centralasicus* being 42, as against 46 in the specimen of *aegyptius* in table 1, and the gaps between the longer primaries are narrower. For instance, in *centralasicus* the gap between the tips of the longest and fourth primaries measures only 13 mm., a difference which amounts to 8 per cent of the length of the wing (allowing for the molt), as against 33 mm. in the specimen of *aegyptius*, or 16 per cent of the length of the wing. The feet of *centralasicus* are very much weaker than those of *aegyptius* but its rictal bristles are comparatively stronger and longer.

#### NOTES ON THE SYSTEMATIC SEQUENCE IN *CAPRIMULGUS* AND ON A SPECIMEN FROM YARKAND

The closest relatives of *centralasicus* in the genus are probably *C. nubicus* and *C. mahrattensis*. These two are small and rather pale species, not heavily streaked as in the group of large species consisting of *indicus*, *europaeus*, and *ruficollis*; of these three, *europaeus* and *indicus* are very closely related and replace each other geographically except at one point where their ranges meet and overlap in the northwestern Himalayas. *Caprimulgus nubicus* ranges from the Near East and Arabia to northeastern Africa; *mahrattensis*, from southeastern Iran to northwestern India. My conclusion concerning the position of *centralasicus* may be premature, as the male is unknown so far, but, nevertheless, I believe it is best placed next to these two species. I have compared *centralasicus* throughout to *aegyptius* because their body coloration is most similar (and also because *centralasicus* was first confused with *aegyptius*), but the very clear-cut difference in the pattern of the wing argues against a close relationship. The similarity in coloration, other than the color and pattern of the wing, reflects their parallel adaptation to a desert habitat. I believe that the unique wing pattern of *aegyptius*, and perhaps also its lack of sexual dimorphism, place it in a somewhat isolated position in the genus. *Caprimulgus eximius* diverges also from the other species. This bird, restricted to the Sahara,

has the normal wing pattern of *Caprimulgus* but has a curious speckled rather than streaked plumage and very long upper tail coverts, much longer than in any other species of *Caprimulgus* and with the edges of the feathers much disintegrated.

I would arrange the species of *Caprimulgus* that are restricted to, or are represented in, the Palearctic region in the following linear sequence: *inornatus*, *nubicus*, *centralasicus*, *mahrattensis*, *asiaticus* (this species is small but heavily streaked and connects the *nubicus-centralasicus-mahrattensis* group to the *indicus-europaeus-ruficollis* group), *indicus*, *europaeus*, *ruficollis*, *eximius*, and *aegyptius*.

The correct identity of the only other specimen of *Caprimulgus* collected in the region of Yarkand is uncertain, but it is clear, I believe, that this specimen was not *centralasicus*, and perhaps not *aegyptius*, though it was identified as such. Scully (1876, p. 99) states that this specimen was brought to him by native bird hunters on July 28, 1875, who said that they had collected it "in the forest region of the Dolan about thirty miles from the city of Yarkand." This record was mentioned by Ludlow (1933, p. 687) who assumed that the bird had been correctly identified by Hume (1876, p. 133) who states that he identified all the birds brought back by Scully. This bird was a female and its measurements were given in inches (converted by me into millimeters); these were: [total] length, 10.1 [256.5]; wing, 7.4 [188]; tail, 5.15 [130.8]; tarsus, 0.63 [16]; bill from gape, 1.33 [33.8]. It is evident that these measurements are much more similar to the measurements of *aegyptius* given above, with the possible exception of the length of the tarsus which, however, is very difficult to measure with accuracy in many birds. The total length of the type of *centralasicus* is only 192 and even if we add another 10 to 15 mm. to compensate for the make-up of the skin, *centralasicus* is still much smaller. Notice also that the bill is twice as long in the specimen reported by Scully. The coloration of this specimen is not mentioned other than that of its soft parts. This specimen would have been of much interest to me, but its whereabouts are unknown, and it may no longer be in existence. Mr. Macdonald informs me that it was not included in the specimens Scully gave to the British Museum.

Hume (1876, p. 133) identified this specimen as either *aegyptius* Lichtenstein or *arenicolor* Severtzov, adding (footnote) that he was not certain of its identity because, as he states elsewhere (p. 116) in Scully's report, he lacked comparative material, had "very few books to consult," and could devote only "very little time" to identifying Scully's specimens. The question as to whether this bird should be called



nominate *aegyptius* or *arenicolor* is not very important, as the two are conspecific (*arenicolor* differing from nominate *aegyptius* only by being a little larger and somewhat more buffy, less gray, above), but the field notes given by Scully suggest that this bird may have been *C. europaeus* rather than *C. aegyptius*. Scully (1876, p. 133) states very clearly that this bird is not to be found in the immediate vicinity of Kashgar and Yarkand (very arid regions suited to *aegyptius*) but only in the forest, adding that the native bird hunters told him: "It is only found in the forest of the Dolan among the Toghrak (poplar) trees, and it lives there permanently. It sits still on the branches during the day time." However, a forest habitat seems most untypical for *aegyptius* which is well known to breed only in very arid regions, in deserts, sandy hills covered with sparse and low scrub, or in very coarse grasslands. It roosts only on the ground, even when the ground temperature is very high, according to Ticehurst (1922, p. 411), or, as Meinertzhagen (1954, p. 286) expresses it picturesquely, it becomes so hot that "they have to keep constantly on the move, like cats on hot bricks."

Chinese Turkestan lies to the east of the range of *aegyptius* which extends to about longitude 74° E. in Semirechia and about longitude 70° E. in the valley of the Syr Darya, and is well to the east of the high Tian Shan ranges which separate the region of Yarkand (about longitude 77° E.) from Russian Turkestan. The specimen brought to Scully was collected around July 28 and may have been a migrant or a stray, but the migration route of *aegyptius* is to the southwest, through Transcaspia, Iran, Iraq, and Arabia to the Sudan. On the other hand, *C. europaeus* (which does breed in forest and often roosts on the horizontal branches of trees), the eastern race of which is of the same general size as *aegyptius*, does breed in Chinese Turkestan in the wooded regions west of Kashgar, therefore not far from Yarkand.

I have discussed the specimen collected by Scully's hunters at some length, because it seems apparent that it was not a specimen of *centralasicus* and may not have been a specimen of *aegyptius*. Thus, the occurrence of *aegyptius* in Chinese Turkestan requires confirmation, as we see that the only alleged records of this species in this region are either certainly (type of *centralasicus*) or probably (Scully's bird) erroneous.

#### ACKNOWLEDGMENTS

I would like to express by gratitude to Mr. J. D. Macdonald of the British Museum (Natural History) for his very kind cooperation and for granting me the privilege of describing the new bird. He lent me

some of the specimens under his care, among which I discovered it, and in answer to my questions sent me further specimens and made a search for the one reported by Scully. I have benefited also by discussing the new species with Dr. Dean Amadon.

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