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GEOGRAPHICAL VARIATION IN *GARRULAX SANNIO* SWINHOE *

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Garrulax sannio was described by Swinhoe in 1867, from Fukien, and *Garrulax albo-superciliaris* by Godwin-Austen in 1874, from Manipur. In "The Annals and Magazine of Natural History," (4) 17, 1876, p. 34, the latter author indiscreetly published the following: "I take the earliest opportunity in this paper to suppress the species (*Garrulax albosuperciliaris*) figured in the 'Journ. Asiat. Soc. Bengal,' 1874, and described by me in the 'Proc. Zool. Soc.' for 1874. It is, I find, the same as *G. sannio*, Swinhoe. The only variation I noticed in the single specimen with which I have compared it was a slight difference in the shade of coloration of the upper surface; this is one often seen in birds taken on the extreme limits of their range."

Despite the fact that but one specimen of each form was compared, and despite the improbability of any *Garrulax's*

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ranging unchanged from southeastern China to Assam, all subsequent writers on Indian birds have taken Godwin-Austen's remarks at full value. But the loan to me by Dr. Dillon Ripley of three recently taken skins of *G. albo-superciliaris* (one virtually a topotype) in the collection of the Yale Peabody Museum of Natural History has shown that Godwin-Austen's bird is perfectly distinct from Swinhoe's. Moreover, the loan of 51 specimens from China, Laos, and Tongking kindly sent me by the authorities of the Chicago Natural History Museum, and the further loan of seven specimens from Laos (David-Beaulieu Collection), again by courtesy of the Yale Peabody Museum, to be added to the already long series from China in the United States National Museum have indicated that there are, in addition, two unnamed subspecies in the territories intervening between Manipur and Fukien.

Mayr (*Ibis*, 1941, pp. 58-59) has commented on this species as follows: "The only character that varies geographically... is the colour of the postocular stripe. It is pale brown... in Yunnan birds, blackish in a series of birds from Wanhsien, eastern Szechwan. In view of the intermediate position of specimens from the type-locality..., it seems best not to recognize any races."

This statement is but partially true. First of all, the Manipur-Naga Hills form is immediately separable from all others by its very distinct color tones. Among Chinese populations, variation appears not only in the color of the postocular stripe, but also in the purity of color of the supercilium and in the intensity of color in the general plumage. The extremes of variation appear, a) in northwestern Yunnan and southeastern Sikang, and b) in Szechwan. Despite the fact that two very different races divide southwestern China between them, no intergradation is apparent in this region, but rather, as was indicated by Mayr, in the southeastern provinces of China.

In order more clearly to discuss the geographical variation of *Garrulax sannio*, it will be necessary first to name the two extremes of the Chinese series of populations, as follows:

1. *Garrulax sannio comis*, subsp. nov.

Type: ♂ ad. (U.S.N.M., No. 296636) collected on the Likiang Plain, elev. 8200 ft., northwestern Yunnan Province, China, August 18, 1923, by Joseph F. C. Rock (original number 1060).

Diagnosis: separable from *G. s. sannio* (Fukien) by having the postocular stripe light rufescent brown (not blackish brown or brownish black), and by having the white or creamy supercilium suffused with rufescent brown just above and behind the eye (not unsullied white or creamy).

Range: Sikang and western Yunnan, elev. 6,000-14,000 ft. Populations of the Shan States, Laos (south to Chiang Khwang), and northwestern Tongking (valley of the Black River), found at elevations between 2,000 and 4,900 feet, are either inseparable from topotypical *comis* or represent *comis* > *sannio*.

2. *Garrulax sannio oblectans*, subsp. nov.

Type: ♂ ad. (U.S.N.M., No. 277649) collected near Ipin [Suifu], elev. 1400 ft., southwestern Szechwan Province, China, November 22, 1923, by David C. Graham.

Diagnosis: separable from *G. s. sannio* (Fukien) by having the several browns of the pileum, mantle, rectrices, throat and breast, belly, and under tail coverts more saturate and strongly rufescent (not olivaceous).

From *G. s. comis* (Yunnan), it differs in the same characters as from *G. s. sannio*, but also by having the postocular stripe brownish black (not light rufescent brown) and by having the supercilium unsullied white or creamy (not suffused with rufescent brown above and behind the eye).

Range: Chinese province of Szechwan, elev. 1,000-6,000 ft., and northern Kweichow.

Remarks: *Garrulax sannio* may be considered an autochthon of southern China, which probably originated as a species in northwestern Yunnan or southeastern Sikang, where is found a race (*comis*) that shows in the adult certain characters (such as the light rufescent-brown postocular stripe) that appear in other races only in the immature plumage. From this center it has pushed out in two directions: westward across northern Burma as far as Manipur and adjacent parts of Assam (*albo-superciliaris*), where it is rare, and southeastward along the rivers as far as the Southern Shan States, northern Laos, northernmost Annam, and Tongking, in all of which it is common at elevations from 2800 to 4900 feet.

Specimens from these southeastern regions represent populations of individuals variably intermediate between topotypical *comis* and topotypical *sannio* (Fukien), which therefore cannot definitely be named. The majority, however, from localities west of the Black River-Red River divide (western Tongking) are nearer *comis*, while the majority of those from east of the divide are nearer *sannio*; this line might then, simply for convenience, be considered the boundary between the two forms.

It may be supposed that the species next advanced north-eastward through the southeastern provinces of China, where, as the race *sannio*, it now occupies the hills of Kwangsi, Kwangtung, Fukien, Kiangsi, and northeastern Hunan (Yochow [Yochow]).

Having reached the valley of the Yangtze in Kiangsi and Hunan, and by now accustomed to elevations much lower than those of the ancestral homeland, the species readily advanced westward up the great river into the lowlands of Szechwan, here to give rise to the race *oblectans* (birds from southwestern Hupeh are already *oblectans* > *sannio*).

Thus, while the ranges of *comis* and *oblectans* are contiguous, it may be seen that these two are farthest apart in distance traveled from the original home, and, by the same

token, of all Chinese populations farthest apart in external characters. Interbreeding of the two races, with consequent masking of their differences, is inhibited by the fact that they occupy distinct altitudinal ranges. That the geographically distant *G. s. sannio* should be the intermediate between them is accounted for by the history of specific expansion I have hypothesized above.

So far as is now known, the range of *G. s. albo-superciliaris* is wholly isolated from those of its Chinese cousins and, as might be expected, this is a very distinct form by the deep (scarcely rufescent) brown of its pileum, the cold dark olivaceous brown of its mantle, and the strong vinaceous wash over its entire under parts. Its postocular stripe is blackish brown in the adult.

Since the birds of this genus are subject to alteration of color by wear, I should mention that my diagnoses have been based wholly upon fresh-plumaged adult specimens. The possibility of post-mortem change has also been considered and discounted, since skins of *G. s. comis* taken twenty-nine years ago do not differ significantly from one collected in 1945, and the oldest specimens of each race are roughly equivalent in age and should therefore have altered to the same degree. For the record, I should state that I have examined 40 examples of *comis* from Yunnan and Sikang, taken in 1923, 1928, 1929, 1930, and 1945; three of *sannio* from Fukien, taken in 1923 and 1930; forty of *oblectans* from Szechwan, taken in 1921, 1922, 1923, 1924, 1925, 1928, 1929, 1931, 1932, 1933, and 1934; three of *albo-superciliaris*, taken in 1950. Of the birds of Laos and Tongking, intermediate between *comis* and *sannio*, I have had 36, collected in 1924, 1929, 1930, 1938, 1939, and 1941.