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## ADDITIONAL SYSTEMATIC NOTES ON THE TITMICE OF THE *REMIZ PENDULINUS* GROUP (AVES)

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### INTRODUCTION

In a recent paper (1950, Amer. Mus. Novitates, no. 1459, pp. 51-62) I had occasion to review the Palearctic penduline titmice, and I contended that all the various forms appear to replace one another geographically and constitute but a single geographically variable species, by name *Remiz pendulinus*. In this species, I recognized 10 races, but I had no material of two of these races, and in the case of some others I had insufficient material. Study of additional material, which includes specimens of all 10 races, suggests that three of these (*persimilis*, *jaxarticus*, and *neglectus*) may not be valid. In the case of the races that are confirmed, the additional measurements of the forms rare in collections change materially some of their measurements published in my 1950 paper. The new material also emphasizes the high degree of individual variation in some forms and gave me the opportunity to examine the immature plumages and a new intermediate (hybrid) specimen.

The 1950 study was based on the collection of the American Museum of Natural History and the specimens collected by Dr. Walter Koelz in Iran and Afghanistan. The new material consists of the extensive series in the British Museum as well as the specimens in the Stockholm and Paris museums, and I am very grateful to the authorities of these institutions for their kind cooperation.

After this additional material was studied, an important Russian faunistic paper was received by the library of the Ameri-

can Museum. In this paper Ivanow (1940, Oiseaux du Tadjikistan, Moscow, pp. 198–199) treats the three main types of the penduline titmice (*pendulinus*, *macronyx*, and *coronatus*) as separate species, since, as he states, all three occur in western Tadjikistan, in the region of Leninabad on the Syr Darya in the northwest, and in the region of Dzhilikul on the lower Waksh near the Amu Darya in the southwest. However, although the ranges of these three forms may meet in these regions, it is still not clear that colonies occur together. In these regions, *coronatus* at any rate is separated ecologically from the other two, for according to Ivanow it breeds only in deciduous forest, especially in willow and birch, whereas *pendulinus* and *macronyx* breed only in reed beds. As reported here and in my 1950 paper the last two apparently interbreed, for intermediates (or hybrids as they are sometimes called in the literature) are not uncommon. A study of the breeding populations of this critical region should be undertaken by some Russian author, but until then it is more constructive and challenging, I believe, to consider that the three forms are conspecific.

In the following notes the distribution and the characters of the various forms are not given, as they were compared and illustrated in my 1950 paper.

#### SYSTEMATIC NOTES

##### QUESTIONABLE FORMS

The characters of *persimilis* Hartert are not constant enough nor do they appear to be sufficiently distinct to warrant its separation from nominate *pendulinus* Linnaeus. A number of additional specimens taken from April 9 to June 14, during the breeding season, in eastern Asia Minor and western Iran could not be separated from many breeding specimens of nominate *pendulinus* examined from various parts of southern and southeastern Europe. On the whole, however, the eastern populations show a slight decrease in size and pigmentation.

*Remiz pendulinus jaxarticus* Severtzow has been distinguished from nominate *pendulinus* chiefly on the basis of its short and thin bill. In the lone specimen in the American Museum the bill measures 8.5 mm., but in two adults in the British Museum the bill measures 11 and 12 mm. and is not different in shape or size from that of nominate *pendulinus*, the bill length in nominate *pendulinus* varying from 10.5 to 12.5 mm. (all the bill measure-

ments in this study are given as taken from the skull). The two adults in the British Museum also cannot be separated from nominate *pendulinus* by differences in the length of the wing and tail or by differences in coloration. The American Museum specimen, an adult female, is very pale and has only a very faint trace of chestnut on the forehead, but I have examined equally pale females collected in southern Europe. In my opinion, therefore, *jaxarticus* and *persimilis* should both be regarded as synonyms of nominate *pendulinus*.

These three specimens were collected in winter; the two in the British Museum, on December 5 and February 23 at Chinaz (south of Tashkent) on the Syr Darya, and the one in the American Museum, on March 14 at Perovsk (now Kzyl Orda). Breeding specimens from the valley of the Syr are very much needed, for Perovsk, according to Dementiev (1935, L'Oiseau, p. 84), is within the range of *macronyx* Severtzow, and the range of *coronatus* Severtzow begins apparently in the region of Leninabad not far above Chinaz according to Ivanow (*loc. cit.*). The British Museum has three specimens of *macronyx* from Perovsk, but they were taken in winter.

*Remiz pendulinus neglectus* Zarudny is said by Hartert (1921, Die Vögel der paläarktischen Fauna, p. 2127) to be identical in coloration with *macronyx*, differing only by being of slightly smaller size and in having a somewhat finer and shorter bill. However, in a breeding specimen from the south coast of the Caspian in the British Museum the bill is identical in shape and size with that of *macronyx* and the wing is only 2 mm. shorter. No color differences can be discerned, and *neglectus* apparently is synonymous with *macronyx*. This specimen, a male taken on May 20, measures: wing, 54; tail, 43; bill, 12.5.

The specimen of *neglectus* from Giaz in the British Museum questioned by Hartert (*loc. cit.*) was collected by Zarudny between June 28 and July 10, probably in the region of Seistan, for this specimen, I find, is not *macronyx* but a typical specimen of *nigricans* Zarudny, a form found only in the reed beds of Seistan.

#### VALID FORMS

*Remiz p. pendulinus* and *R. p. caspius* Poelzeln: The large series in the European collections emphasize the high degree of individual variation in the width of the frontal band of chestnut.

In nominate *pendulinus* this band may be lacking or may vary from a trace to a width of about 4 mm. It is far more variable in *caspius* where it may be lacking, or the chestnut may cover the whole crown, joining in some cases without a break with the chestnut of the mantle. This variation is well illustrated by a series of 36 adults of *caspius* in the British Museum. In these specimens in breeding plumage taken from April to June at Astrakhan and in the southern Urals the variation is as follows:

- 7 No chestnut band or with only slight one; not separable from nominate *pendulinus*
- 9 Intermediates
- 17 Chestnut extends to center of crown or farther but does not reach mantle
- 3 Chestnut of crown and of mantle continuous, also true of one of nine specimens examined in the American Museum

There is but a step, perhaps controlled by only a few genes, from the wholly black crown of *macronyx* to the wholly chestnut crown of some specimens of *caspius*.

*Remiz pendulinus coronatus*: The measurements of additional breeding specimens, mostly from Ferghana, are as follows: wing, tail, and bill, respectively; males, 53, 40, 10; 53, 40, 11.5; 53, 41, 10; 55, 39, 10; females, 51, 38, 11.5; 52, 40, 10.5. These measurements confirm the few measurements of breeding birds given in my 1950 paper.

*Remiz pendulinus stoliczkae* Hume and *R. p. consobrinus* Swinhoe: The measurements of additional specimens (see below) do not confirm the very short bill lengths given in my 1950 paper (8 to 9 in *stoliczkae*, 9 to 9.5 in *consobrinus*). The bill in *consobrinus* was found not to differ in shape from that of nominate *pendulinus*, the difference that I had noted and illustrated being apparently due to individual variation.

*Remiz pendulinus macronyx*: No specimens were available in my former study. As this form and *stoliczkae* and *consobrinus* are rare in collections, the measurements of these three forms are given in full. The specimens are in the collection of the British Museum.

	WING	TAIL	BILL
<i>stoliczkae</i> , Chinese			
Turkestan	♂ 54	43	10.5
	♀ 54	41	10
<i>consobrinus</i> , northern			
China, Shantung, and			
Kiangsu	♂ 56, 56, 57	41, 42, 44	11, 12, 12.5
	♀ 53, 54, 55.5	39, 39, 40	11.5, 12, 12

*macronyx*, Lower Amu and  
Syr Daryas

♂ 56, 57, 58, 58	46, 46, 49, 50	10.5, 12, 12, 12.5
♀ 57	47	11

#### IMMATURE PLUMAGE

Immature *coronatus* was found to be very slightly grayer than immature *caspius* and immature nominate *pendulinus* but otherwise inseparable. Dementiev has previously emphasized the "striking resemblance" between immature *macronyx* and *pendulinus* (1934, Proc. Eighth Internatl. Ornith. Congress, p. 247). The young of the three main types in the penduline titmice (*coronatus*, *macronyx*, and *pendulinus*) are thus shown to be similar.

#### INTERMEDIATE (HYBRID) SPECIMENS

Intermediate specimens have been discussed and described by Dementiev (1934 and 1935, *loc. cit.*). In my 1950 paper I reported on others, including a specimen intermediate between the *macronyx* and *pendulinus* types. This specimen, taken on the "Transcaspian-Persian Frontier," had a black throat and a white crown. Another similar specimen in the British Museum also has the throat black, but the crown is also partly black, being whitish only in the center. This specimen was taken along the southern Caspian on March 16.

