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NOTES ON THE EMBERIZINE SPARROW *RHYNCHOSPIZA STOLZMANNI*

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Rhynchospiza stolzmanni Taczanowski has one of the most restricted ranges of any of the continental Emberizinae. It occurs on the arid western slopes of the Andes in Loja, southwestern Ecuador, and from Tumbes to Cajamarca, northern Peru, or from approximately Lat. 3° 30′S to Lat. 7° 15′S. Its altitudinal range is roughly from 100 to 1,100 meters. Judging from the comparatively few specimens in collections, the species appears to be uncommon, but this may be a deceptive indicator. It seems more probable that it has a restricted habitat and is secretive, two characteristics which would make it difficult to collect.

FIELD NOTES

In mid-October 1965 I saw the species briefly at Yamana (alt. *ca.* 1,100 m), near the head of the arid Casanga Valley in southwestern Loja, Ecuador. Although these observations are only an introduction to the species, they supplement the short notes made by Jelski and Stolzmann (Taczanowski, 1886) nearly a century ago, which are the only published field observations of this interesting bird.

On several days while walking along a path on a steep hillside, my attention was occasionally attracted by the short loud calls of two or three birds concealed in sparsely distributed patches of thick brush on the lower side of the hill. A few times I was able to glimpse a dark, heavy-set bunting on the ground or in the lowest branches of the shrubs. The birds were extremely shy and silently moved downhill almost as soon as I sighted them. Late one morning a flock of about six birds was seen at a distance on the path and adjacent to a fence made of piled thorny brush. The flock quickly darted into the fence in the manner of *Zonotrichia capensis*,

which is surprisingly wary in rural areas, unlike its tame and trusting behavior in Andean cities and towns. *Z. capensis* had been collected in the fence previously and, believing this to be another flock of that species, a bird was shot as it emerged from the top of the brush pile. On recovering the specimen it was found to be *Rhynchospiza stolzmanni,* the elusive bird I had glimpsed on earlier occasions. The presence of both *Z. capensis* and *R. stolzmanni* in the same habitat is contrary to the observations of Jelski and Stolzmann (Taczanowski, 1886), who stressed the exclusion of one species in the presence of the other.

That afternoon the flock was in the same area but was even more elusive than in the morning. On the following day a loose flock of about a dozen *R. stolzmanni* was discovered a short distance away in a weedy area interspersed with leafless, lightly branched shrubs about 10 feet tall. Some of the shrubs bore pea-sized dark purple fruit. The birds were feeding on the fruit high above the ground and were completely exposed, in striking contrast to their earlier behavior. They were watched for about an hour and could be approached to within 20 or 30 feet before they were disturbed; then they merely moved a short distance and resumed feeding. Several specimens were collected here, and later a single bird was taken from a small, fully leafed tree standing alone in an area of dense underbrush. These observations are again at variance with those of Jelski and Stolzmann (Taczanowski, 1886) who saw the species only on the ground or in the lowest branches of bushes; doubtless the presence of fruiting shrubs altered the usual retiring behavior of the bird.

The birds were moderately vocal. The calls were a single loud, metallic *cheep* and, less frequently, a series of three or four *cheeps* given in rapid succession and descending tone.

Six specimens were collected at Yamana. All were in very fresh plumage and their gonads were small. Five of the series had consumed the purple fruit which stained their intestines nearly black; the sixth bird was collected a day earlier and its stomach contained only a few small seeds.

TAXONOMIC NOTES

When describing *stolzmanni,* Taczanowski (1877) placed the species in the genus *Haemophila* (= *Aimophila*) but without giving his reasons for doing so. Presumably he thought its relationship too obvious to require amplification. However, in 1898,

Ridgway created the monotypic genus *Rhynchospiza* for *stolzmanni,* noting that while the species resembles the shorter tailed, stouter billed species of *Aimophila* in several respects, it differs from them in having a tail which is much shorter than the wing, in having a "nearly even" tail, and in having very small, circular nares nearly concealed by feathers.

The generic allocation of the species has been generally accepted. Chapman (1926) apparently had unexpressed doubts about the validity of the genus when he remarked on the close resemblance between *stolzmanni* and *Aimophila sumichrasti* of Mexico, and suggested that *stolzmanni* may have had a Middle American origin. Hellmayr (1938) also mentioned the similarity between these two species but felt the short, nearly square, tail and (adding two new characters) "broader and less rounded" rectrices were "good taxonomic characters" for maintaining *Rhynchospiza* apart from *Aimophila.* In his survey of *Aimophila,* Storer (1955) briefly noted Chapman's suggested origin of *stolzmanni* but did not further consider *Rhynchospiza.*

The supposed generic characters of *Rhynchospiza* seem to me to be either inconsistent or of dubious value. The nares of *Rhynchospiza* are small, rounded, and rather concealed, but similar nostrils are found in several of the *Aimophila,* such as *strigiceps* and *rufescens.* I fail to appreciate why Ridgway and Hellmayr believed *Rhynchospiza* has a squarer tail than that of *Aimophila.* While it is true that most species of *Aimophila* have a comparatively rounded tail, the outer rectrices are long in *A. sumichrasti* and *A. ruficeps* and their tails are as square as that of *R. stolzmanni.* Hellmayr's belief that *Rhynchospiza* could be distinguished from *Aimophila* by its broad, blunt rectrices seems to have resulted from an observational error. Several species of *Aimophila* have rectrices which are rather narrow and pointed, in contrast to the condition in most emberizines, but other members of the genus have "normal" rectrices. Among the species whose tail feathers are broad and blunt, like those of *R. stolzmanni,* are *A. mystacalis, quinquestriata, sumichrasti, ruficeps,* and *rufescens.*

The only character clearly differentiating *R. stolzmanni* from all species of *Aimophila* is the tail, which averages about 12 mm shorter than the wing, while in the aimophilas the tail is at least equal to the wing, and usually considerably longer. While a short tail may be biologically advantageous, or at least not deleterious, to *R. stolzmanni,* it does not seem that a single character of this nature is of value in delimiting genera. If one were to accept a short tail

as a generic character it would follow that the notably long-tailed *A. strigiceps,* isolated in Argentina, would have to be set apart in a genus of its own, a suggestion no one has yet made. I propose, therefore, that *stolzmanni* be returned to the genus *Aimophila.*

AFFINITIES OF *AIMOPHILA STOLZMANNI*

Storer (1955) groups the species of *Aimophila* into three assemblages. First, that of *mystacalis, humeralis, ruficauda, sumichrasti,* and *strigiceps,* all large forms inhabiting arid tropical scrub, which have dark transocular stripes, rufous shoulder patches, breast bands (either pronounced or muted), and inconspicuously colored feathers on the underside of the bend of the wing. Second, a group consisting of *aestivalis, botterii, petenica* (which I consider conspecific with *botterii*), and *cassinii.* These are all smaller birds, morphologically fairly similar, which inhabit temperate grasslands and which have no dark eye stripe, no breast bands, and no pronounced shoulder patches, but do have bright yellow feathers at the wrist joint. The third division consists of the dissimilar species *quinquestriata, carpalis, ruficeps, notosticta,* and *rufescens,* a group of uncertain affinities, which lack eye stripes, shoulder patches, and conspicuously colored wrist feathers.

A. stolzmanni fits well with the first group, except for distinctive yellow feathering at the angle of the wing. It is doubtful, however, if the presence or absence of such markings may be used to assess phylogenetic relationships. Conspicuously colored (or patterned) underwing patches, which apparently function as signals in threat display, and perhaps in courtship display, are found in many families. They occur rather frequently in the Emberizinae and often are the only bright feathers on an otherwise sombre-colored bird. A cursory survey of the emberizines seems to indicate that this character is most pronounced in secretive species which inhabit grasslands, dense undergrowth, or dark habitats — areas where an inconspicuous species might effectively use a bright patch of color as a signal. If this is the case, such markings probably evolve rather readily in certain habitats and are useless to the taxonomist searching for evolutionarily conservative characters which may be clues to phylogenetic relationships. For this reason, the possession of yellow feathering at the bend of the wing is no deterrent for considering *A. stolzmanni* a member of the group containing *mystacalis, humeralis, ruficauda, sumichrasti,* and *strigiceps.*

Although *stolzmanni* bears a close resemblance to *sumichrasti,* and occupies a similar habitat, the former may not necessarily have

arisen from the latter. *A. strigiceps,* the only other South American *Aimophila,* also bears a strong resemblance to *sumichrasti.* Thus we find three species (*sumichrasti, stolzmanni,* and *strigiceps*), all with restricted ranges, which are markedly similar to one another. The restricted ranges and morphological resemblances suggest that these are relict forms; they may be older than the three boldly marked species with which they seem allied, viz. *mystacalis, humeralis,* and *ruficauda.* Their origin may be postulated as follows: In pre-Pleistocene times a simply patterned ancestor, with an incipient breast band and rufous wing patches, may have ranged from Mexico south to southern South America. During a Pleistocene interglacial period the Central American population became isolated, owing to the formation of water gaps, and differentiated into *ruficauda.* In South America the population retreated to arid refugia in Argentina and in southern Ecuador and northern Peru, forming *strigiceps* and *stolzmanni,* while the Mexican population (*sumichrasti*) was isolated to the north of the Isthmus of Tehuantepec. During a glacial period, when the sea receded, *ruficauda* spread northward into Mexico, occupying the range of *sumichrasti* and beyond, becoming isolated during later interglacials and further differentiating into the even more boldly patterned species *mystacalis* and *humeralis* on the Mexican Plateau. Movement of *ruficauda* to the south beyond northern Costa Rica was prevented because of the absence of dry scrub, thus leaving *stolzmanni* and *strigiceps* isolated in South America.

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