

## NOTES ON FALCO SPARVERIUS IN MEXICO

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The article by the junior author, "Variation in Western Sparrow Hawks" (Condor, 45, 1943:168-185), discussed the status of these hawks from North America as far south in Mexico as Baja California and Guaymas, Sonora. At the time that the article was written, the senior author was in Mexico, and the Moore Collection of the Orcutt Trust, Pasadena, California, was not available for study, although it was known that the collection contained critical specimens that would have helped to determine the southern extent of the breeding ranges of *Falco sparverius sparverius* and *Falco sparverius peninsularis*. When we were at last able to discuss this problem, the senior author's notes, already in manuscript, and separate examination of the specimens and joint re-examination of them resulted in our finding ourselves in complete agreement. The senior author had independently reached the conclusion that *peninsularis* occurs as a breeding bird on the eastern coast of the Gulf of California, but the specimens in the Moore Collection proved that it extends some two hundred miles farther south than Guaymas, Sonora, the southernmost point indicated in Bond's paper. We herewith acknowledge our indebtedness to the Orcutt Trust, Trustor and Trustee of the Moore Collection, for their cooperation in making this paper possible.

There are seventy-five specimens of sparrow hawks in the Moore Collection and in the senior author's small private collection, all except one of them having been obtained south of the Rio Grande and fifty-four of them from Mexico alone, of which seven are *F. s. peninsularis*. Of the remaining forty-seven all seem to be *F. s. sparverius*, except possibly one female from Charco Redondo, Jalisco, with a wing of 187.5 mm. This falls in the overlapping range of the smallest three per cent of *F. s. sparverius* and the largest three per cent of *F. s. peninsularis*. Our specimens of *F. s. sparverius* come from almost all parts of Mexico, except the extreme southeastern portion. In altitude they range from sea level on the tropical plains of both coasts to an altitude of 9500 feet on the Sierra Ozumatlán, Michoacan, on the Central Plateau. Fifteen of these individuals were taken in the local nesting and breeding period, which certainly begins in the lowlands early in March. Unfortunately, however, not all northern migrants have left México until the end of April, so that March and April specimens cannot be certified as resident unless condition of the gonads was noted by the collector. First, among birds obtained in the breeding period, but not on the west coastal slope, one, a male taken March 29 one mile north of Tapalpa, Jalisco, at 7800 feet, has its sex organs enlarged to full size; a second male had enlarged sex organs and was secured May 27 at Puerta de Guadalupe, Guanajuato, at 7200 feet elevation; a third adult male was collected on July 23 at Presa de Guadalupe, San Luis Potosí, 33 miles southwest of Tula, Tamaulipas, at 4500 feet. There are four March individuals from Jalisco and one each from Veracruz, Morelos, and Chiapas.

The really critical specimen from the Pacific slope is no. 20873, Moore Collection. It is a female taken on April 12, 1938, containing ova the "size of No. 4 shot" according to the collector's label, at a point one mile northeast of Mazatlán, Sinaloa, and also one mile from the coast of the Gulf of California. This female has a wing length of 193.7 mm. and a tail length of 128.7 mm., being, therefore, far too large for *peninsularis*. Although certain characters may differ somewhat from the average of *sparverius*, it must be remembered that *sparverius* is exceedingly variable individually. Furthermore, this specimen can be matched by some breeding females from the United States. Another female, no. 28597, Moore Collection, was secured March 22 on the coast at Cha-

cala, about thirty miles south of San Blas, Nayarit, one of Lesson's type localities for his *phalaena*. The condition of the sex organs was not noted by the collector, but the large marks of white droppings on the tips of the rectrices, in connection with the breeding period date, suggest recent contact with the soiled interior of a nesting cavity. Although many breeding sparrow hawks do not have the tail soiled, all those we have seen with droppings on the rectrices were collected during the nesting season. This specimen has a wing length of 189.6 mm., close to that of no. 20873, but is darker above and has broader barring above and broader streaks below, possibly indicating that it was hatched the previous season. Both authors agree that it is not *peninsularis*, and that its medium size and its darker unfaded coloration indicate it is probably *sparverius*. Even if it could be determined what are the characters of *Tinnunculus phalaena* Lesson, the type of which is probably lost, we are both convinced that in such an individually variable species the name *phalaena* should not be resurrected on the basis of these two specimens. Two other males of *sparverius* were secured March 20 and 27, in the foothills of Sinaloa at San Ignacio and Los Leones, thirty and fifty miles from the coast, respectively, which may be residents. These we also assign to *sparverius*, but far more specimens taken in the breeding season (May 1 through August 15) are needed from eastern Sonora and from all of Sinaloa before the exact boundaries of the two subspecies can be delineated, and before we can determine whether there is a broad area of intergradation as in the Gila River Valley of Arizona, or a sharper line of demarcation as occurs in northern Baja California (*op. cit.*, map, page 178). A number of collectors have worked in eastern Sonora and extreme western Chihuahua during the nesting season, but so far as we know have taken no sparrow hawks. This may indicate that the breeding population in this area is sparse.

To *sparverius* also, we assign all the birds of the Central Plateau. Considering the four breeding period males from the Plateau, one notices at once their variability, for two are extremely pale in the rufous areas above, one is very dark and many of the variations of color and pattern that are to be noted in specimens from the United States occur in these birds. Three of them are near the average of the race, ranging from 183.7 to 192.4 mm. in length of wing, while one specimen, no. 27033, a male taken on April 12 one mile north of Tapalpa, Jalisco, at 10,800 feet elevation, has a wing so short as to be near the lower limit of *sparverius*. The collector's notes indicate that the sex organs were about one-half enlarged. It might be deemed that this bird is a migrant from some area of intergradation between true *sparverius* and *peninsularis*, but we judge it to be an individually small representative of the breeding birds of the region.

Equally interesting are the seven birds which we believe to be *Falco sparverius peninsularis*. Two were taken in Sonora, a January female with very small wing (175.8 mm.), which may indicate winter dispersal up the Mayo River, and a male taken April 19 at Agiabampo on the coast near the Sinaloa boundary and probably breeding. Five were collected in Sinaloa and all, except one from the Rio Fuerte Valley, were taken near the coast. A male obtained at San Batauto, near El Molina, was collected February 19; it has a wing length of 167.0 mm. Another male was secured January 31 at Quelite about lat. 23° 55', which seems to represent the southernmost point at which this race has been found on the mainland. This locality is less than twenty-five miles north of Mazatlán, where the breeding female of *sparverius* was collected. Since *peninsularis* seems to be markedly sedentary, the specimen suggests that the area of intergradation between the two races is very narrow in this region.

A female, taken on May 16 at El Fuerte on the river of the same name, is probably a breeding bird, although the collector does not indicate either on the tag or in his

journal if the sex organs were enlarged or not. A male taken March 3 at the mouth of the Sinaloa River also may have been already on its nesting grounds.

From the above it seems safe to conclude that *peninsularis* breeds at low altitudes close to the coast, or somewhat inland along the rivers, as far south as the Rio Fuerte in Sinaloa and that this race winters and may possibly breed even as far south as Quelite, 25 miles north of Mazatlán. It seems to be chiefly a bird of the arid Sinaloa Coastal Faunal District (Moore, Trans. San Diego Soc. Nat. Hist., 10, 1945:217-235), and of a similar coastal strip in Sonora, but its habitat projects inland along the rivers an unknown distance. True *sparverius*, on the contrary, although it visits the coast in winter, is a bird of the foothills at least in northern Sinaloa and of the medium altitudes of the Sierra Madre Occidental and also occupies the Central Plateau and much of the rest of Mexico. Its range actually curves like a half-moon around the very restricted breeding area of *peninsularis*, reaching the coast at Mazatlán in southern Sinaloa and extending south apparently to the Guatemalan border. We have seen no specimens from Guerrero that are not large and typical of *sparverius*, although breeding birds from the coast have not been examined; but a male marked as having "active" testes, taken on March 17 at Prusia in the coastal mountains of Chiapas, is identified as true *sparverius*.

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