

much more numerous; the legs more cinnamon; under wing coverts and axillars more buffy; feathering on toes slightly more scanty, but not consisting of bristles. It differs from *suttoni* in having the upper and under parts browner (less black and white); the streaking above and below more narrow; the vermiculation of the breast and abdomen heavier and browner; the axillars and under wing coverts more buffy; the light spots on the under side of secondaries and proximal primaries more buffy, less pinkish; the legs darker and more buffy; the toes more scantily feathered, but not bristled; size smaller.

Range.—Known only from a pair of birds, male and female, from near Atoyac, Jalisco, at 4200 feet altitude, the male, according to Mr. Lamb, having been caught by hand in the nesting hole in a mesquite.

Measurements.—

	Wing	Tail	Culmen from Cere
1 ad. ♂ <i>sortilegus</i>	150.7	76.3	13.9
3 ad. ♂s <i>cineraceus</i>	148.8 (146.9–152.3)	76.2 (73.7–78.0)	12.9 (12.4–13.2)
1 ad. ♀ <i>sortilegus</i>	164.9	80.5	14.2
8 ad. ♀s <i>cineraceus</i>	156.8 (143.8–164.4)	79.5 (76.5–84.8)	13.4 (12.2–14.3)

Specimens examined.—*Sortilegus*:—Jalisco: near Atoyac 1 ♂ 1 ♀ (Type, Feb. 25–26 breeding). *Cineraceus*:—The specimens listed in the American Museum of Natural History and Biological Survey (Auk, vol. 56, January, 1939, p. 40); also specimens in the Donald R. Dickey Collection—Arizona: Bonita Canyon, Chiricahua Mts. 1 ♂ 1 ♀ (Feb. 20–May 5), Fort Lowell 2 ♂ 2 ♀ (Dec. 27–Apr. 17). Intergrades with *suttoni*:—New Mexico: Reserve 1 ♂ (Apr. 29).

Remarks.—*Sortilegus* is a bird of the mesquite association and heavily forested flat valleys, consisting of large trees, in addition to the mesquites, such as “Higueras, Guamuchils, Capulins,” as well as extensive growth of “Pitaya Cacti.” Mr. Lamb writes that the area is a huge valley, fifty miles long and from five to ten miles wide “absolutely flat,” which once contained an extensive series of lakes—dry for the past six years. Although *sortilegus* is nearer to *cineraceus* of Arizona, it is separated from it by the eastern portion of the range of *suttoni* (Aguascalientes to Durango). Birds of the last taken at San Jacinto, Aguascalientes, only 180 miles north of the type locality of *sortilegus* are the most extreme black and white examples of *suttoni*, differing much more from the Jaliscan birds than do the birds of Arizona.

Otus vinaceus seductus, subsp.⁵ nov.

MICHOACAN SCREECH OWL.

Type.—Male adult, number 25468, collection of Robert T. Moore; 5 miles northeast of Apatzingan, Michoacan, altitude 1000 feet; February 5, 1940; collected by Chester C. Lamb.

Subspecific characters.—Larger than both previously described races of *Otus vinaceus vinaceus* (Brewster) and fully as large as *Otus cooperi* (Ridg-

⁵ *Seductus* = remote, referring to the great extension of the habitat of the species into southern Mexico.

way), both in general measurements and feet, nearest to the former, but differing in having the upper parts very much darker, but general tone of underparts almost exactly the same, except that the chin is much whiter (pure white); the upper throat less buffy; the light spots on the wing coverts and scapulars pure white instead of pure buff; the dark quadrate spots on the outer webs of the ninth, eighth and seventh primaries, counting from outside, not so heavily vermiculated; the auriculars very much darker, browner instead of gray; the lores pure white instead of barred with gray; the toes bristled; size much larger, at least twenty per cent. As compared with *sinaloensis*, the differences are about the same as with *vinaceus*, except that, although the upper parts are very much darker (browner), the under parts are actually lighter, particularly on the center of the abdomen, center of breast throat and chin; the contrast is greater, but the light spots on the wing coverts and scapulars are only a trifle whiter. Compared with *Otus cooperi*, *seductus* is just as large and has just as large feet, but differs in being darker, browner above; much browner on the auriculars; much whiter on the lores and chin and has the typical *asio* dark spotted nuchal collar, extending from the auriculars around the throat, which is either lacking, or merely vestigial in *cooperi*; the tail considerably longer than half the length of wing, instead of considerably shorter; a dark brownish eye-ring, instead of gray.

Range.—Known only from the two specimens in the Moore Collection, taken in different parts of Michoacan.

Average Measurements.—

	<i>Wing</i>	<i>Tail</i>	<i>Culmen From Cere</i>	<i>Middle Toe 6 Minus Claw</i>
<i>Seductus</i> .				
2 ad. ♂s	175.3 (169.2–181.3)	92.5 (89.3–95.7)	14.9 (13.7–16.0)	17.9 (17.4–18.3)
<i>Cooperi</i> .				
6 ad. ♂s	166.3 (162.1–174.1)	80.2 (73.8–87.2)	15.1 (13.9–16.0)	16.0 ⁷
8 ad. ♀s	171.3 (163.0–177.9)	81.4 (76.5–84.2)	15.8 (15.4–16.0)	17.8 (17.5–18.1)
<i>Vinaceus</i> . ⁸				
3 ad. ♀s	149.1 (145.5–154.5)	76.4 (74.8–78.2)	13.9 (13.8–14.0)	15.2 (14.5–15.6)
<i>Sinaloensis</i> .				
3 ad. ♂s	140.2 (136.0–142.4)	73.6 (71.6–75.2)	12.6 (12.4–12.8)	14.4 (13.2–15.3)
<i>Sinaloensis</i> .				
1 ad. ♀	148.0	74.7	14.0	15.2

Specimens examined.—*Seductus*—Michoacan: near Apatzingan 1 ♂ (Type Feb. 5), Chinapa 1 ♂ (Jan. 1). *Otus cooperi*—Costa Rica: Esparta 1 ♂ 2 ♀ 1 Im. ♀ (Mch. 26–27). Also the specimens in the American Museum of Natural History and the United States National Museum (Auk, vol. 56, Jan. 1939, p. 48).

⁶ As it would be necessary to destroy the feathers to measure this distance in the usual way, I place the point of the micrometer at the point where the distal margin of the integument between the middle and outer toe reaches its most proximal point and then measure from there to the distal end of the middle toes, where integument ends on the base of the claw.

⁷ Lacking this measurement for all six specimens, I took it of the largest individual, a specimen in the Moore Collection from Esparta, Costa Rica.

⁸ No males have yet been taken of this race; of *sinaloensis* one male and one female are intergrades and not included in measurements.

Remarks.—Both of our male specimens of *seductus* seem to be in the gray phase, because both specimens are the same depth of tone on the under parts as the under parts of my four specimens of the light phase of *cooperi* and of my two females of *vinaceus*, of which only the gray phase is known. Nevertheless, on the upper parts both males of *seductus* are much darker than the upper parts of either *vinaceus* or *cooperi*, having in an extraordinarily dark coloration between Warm Sepia and Verona Brown of Ridgway. No specimen in any other phase has been taken. No rufous phase specimen has been secured either of *cooperi* or of the *vinaceus* group, nor is it certain that any of the three races of the *vinaceus* group has more than one gray phase; however, I have seen only three of the four specimens of *sinaloensis* in the Dickey Collection. One of these, a male taken at Agiabambo, southwestern Sonora, on May 19, 1937, which has not yet been given a catalogue number, has the printed name of "Robert G. Hannum" on its tag. This individual lies about half way between the darker coloration of all the rest of the specimens of *sinaloensis* and my two intergrades from the higher altitude of the Guirocoba Ranch in southeastern Sonora (Proc. Biol. Soc. of Wash., Vol. 50, April 21, 1937, pp. 64-65). The Agiabampo individual is certainly not sufficiently different from all the others to make one conclude two phases are involved.

Incidentally, these recently taken specimens in the Dickey Collection amply prove the validity of *sinaloensis* and bring the total specimens in collections to five from the coastal plains, in addition to the two intergrades from the cypress-palo blanco association of the Guirocoba area. They prove that *sinaloensis* is very much darker gray and very much more vermiculated below than *vinaceus*; considerably darker above; with the light colored marks on the scapulars and wing coverts much whiter.

The fact that the two individuals of *seductus* are both males would seem to indicate that the taking of females will prove it to be an extraordinarily large Screech Owl. The type of *seductus* has a larger wing (181.3 mm.) than any one of the fifteen specimens of *cooperi*, which I have measured, the largest one being a female (177.9 mm.). In the table of measurements above, I was not able to give a good comparison of size of the feet of *seductus* and *cooperi* from measurements of the middle toe without claw taken in the usual manner. However, I do have a fair comparison for the measurement of the middle toe from the base of the second joint to the point where the integument ends on the base of the claw. This measurement of the two male *seductus* average 19.9 mm., whereas the same measurement of six adult males of *cooperi* average 18.9 mm. It would appear from all measurements that *seductus* is not only just as large as *cooperi*, but probably larger.

It is believed by some that the feet of *cooperi* are very much larger in proportion to the size of the bird than the feet of other species of Screech Owl. Taking the percentage of the ratio of the middle toe minus claw, measured from the angle between the middle toe and outer toe, to the wing, I find that in *cooperi* it is 10.1 per cent, *seductus* 10.2, *vinaceus* 10.2, *sinaloensis* 10.2, *xantusi* 9.2, *cineraceus* 9.5, *semplei* 9.6, *suttoni* 8.6, *sortilegus* 9.0, *mccallii* 9.6, *guatemalae vermiculatus* 11.2 and *guatemalae tomlini* 10.0. These measurements cover a series of females of each race except for *seduc-*

tus. From the above it appears that the five races of *Otus asio* of Mexico and the southern boundary States of the United States (*mccallii*, *cineraceus*, *xantusi*, *suttoni*, and *sortilegus*) have the middle toe from one half to one per cent proportionately smaller than *cooperi*, whereas all of the three races of *o. vinaceus* (*vinaceus*, *sinaloensis*, *seductus*) have the middle toe proportionately just as large as *cooperi*, in fact very slightly larger, while proportionately longest toes were found in a race of a different species, *Otus guatemalae vermiculatus*, namely 11.2 per cent.

Two deductions can be made from the above measurements, (1) *cooperi* does not have extraordinarily large feet in proportion to its size, (2) the *vinaceus* group is closer to *cooperi* in this character than is the *asio* group.

The relation of *Otus asio xantusi* to the *vinaceus* group is an interesting one. Like other southern races of *asio*, such as *mccallii* and *semplei*, it has the toes more sparsely feathered, but not bristled, since the calamus is very small as in the *asio* group and each one has several hair-like appendages, resembling filoplumes. These are very different from the enlarged calami of the bristles of *cooperi* or *seductus*, which seldom have hair-like appendages. *Xantusi* also resembles the *vinaceus* group in the buffy spotting on the nape and upper back and the vermiculation, in most specimens, on the quadrate darker marks on the outer webs of the ninth, eighth and seventh primaries. However, it is a true *asio* in its color pattern, having the large dark blotches on sides of breast, the conspicuous streaks on the upper parts, the less heavily vermiculated abdomen, pale under wing coverts and the very large white spots on the wing coverts and scapulars. Now that we have a good series of *sinaloensis*, it is proved to be more markedly different from *xantusi* than seemed true when *sinaloensis* was described.

This paper makes no attempt to reach a final conclusion concerning the relationships of these difficult races, but does urge the desirability of temporarily holding together the *vinaceus* assemblage as one conspecific group until the accumulation of more material may prove this course unwise. In any event, the intrusion of an extreme type of *asio*, *sortilegus*, near to the habitat of the utterly different and huge *vinaceus*-group race, *seductus*, must be satisfactorily explained. If this can be done and the character differences between the two groups proved unimportant, so as to show that the *vinaceus* group is conspecific with the *asio* group, then it might be desirable to go even farther and include *seductus* and *cooperi* with them as one conspecific concept.