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28 Spotted Wood Quail

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28

Spotted Wood Quail

Odontophorus guttatus (Gould) 1838

OTHER VERNACULAR NAMES

BOLONCHACO, spotted partridge, thick-billed wood quail.

RANGE

Forested parts of the subtropical zone of southeastern Mexico south through Guatemala, British Honduras, Honduras, Nicaragua, and Costa Rica to extreme western Panama.

MEXICAN SUBSPECIES

O. g. guttatus: Spotted Wood Quail. Forested parts of Oaxaca, Chiapas, Veracruz, Tabasco, and Campeche in Mexico southward to Panama.

O. g. matudae Brodkorb: Matuda spotted wood quail. Known only from one locality in Chiapas. Of doubtful validity (Edwards and Lea, 1955; Blake, 1958).

MEASUREMENTS

Folded wing: Adults, both sexes, 134–54 mm (males average 144 mm, females, 140 mm).

Tail: Adults, both sexes, 61–76 mm (males average 72 mm, females, 67 mm).

IDENTIFICATION

Adults, 10–11.5 inches long. The sexes are quite similar in appearance. This is a tropical rain forest species that is rarely seen. Both sexes have a large, bushy crest that is bright orange in males and black in females. They also have black throats conspicuously marked with white shaft-streaks that produce a distinctively streaked appearance unlike any other *Odontophorus* species. Otherwise the upperparts are generally dark brown, with irregular black markings, especially on the wings. Both sexes have reddish brown and olive brown phases, which colors are extensive on the underparts, interrupted only by small rounded or teardrop-shaped lighter spots that are narrowly edged with dusky or black.

FIELD MARKS

More often heard than seen, this forest-dwelling species has a loud call of six notes, *wheet-o-wet-to-wheo-who*, repeated steadily with the last syllable sometimes changed to *to-whao*, and which may actually be a duet (Wetmore, 1965). It also utters mournful whistles when a flock is scattered and has repetitive *gahble-gahble* or *ga-gobble* calls (Slud, 1964). The distinctively streaked black throat of both sexes, and the bushy black or bright orange crest would serve to separate this species visually from all others in the region. Several additional species of *Odontophorus* occur farther south in Central America, but these all lack the streaked black and white throat pattern of the spotted wood quail.

AGE AND SEX CRITERIA

Females have dark brown, rather than bright orange, crests, or the orange buff coloration is limited to a shaft-streak. An erythristic phase is common, however, in which the crest is entirely fuscous and the female is darker overall.

Immatures evidently have the usual condition of two relatively pointed outer primaries (difficult to ascertain), but immature birds of both sexes

also have rusty brown crowns that are tipped or vermiculated with brown or fuscous, and they are somewhat more rufous-colored ventrally than are adults.

Juveniles have black-edged breast feathers with buffy shaft-streaks that widen into bars. Reddish brown crest feathers begin to appear before the head has lost all of its down on the face and throat.

Downy young (illustrated in color plate 110) of this species can be distinguished from *Dendrortyx* downies by their olive gray rather than bright Naples yellow underparts (especially abdomen and throat). Compared to the very similar singing quail they appear to be darker and slightly more yellowish rather than buffy white below and have dark chin markings that are lacking in the singing quail. According to Wetmore (1965), the description given by Ridgway and Friedmann (1946, p. 371) for the natal plumage of *O. erythrops melanotis* actually refers to this species.

DISTRIBUTION AND HABITAT

The distribution of the spotted wood quail in Mexico has been plotted by Leopold (1959), who indicates that its distribution is more or less coextensive with that of tropical rain forest in addition to its occurring in portions of tropical evergreen forest. The species' northern limits are at about Potrero, Veracruz (Brodkorb, 1939). It is reported to be fairly common at elevations of from three hundred to thirteen hundred feet in both tropical rain forest and cloud forests of the Sierra de Tuxtla, Veracruz (Andrle, 1967). In Tabasco there are no definite records of the species' occurrence (Berrett, 1963), but Ridgway and Friedmann (1946) listed it as occurring in the state. It has been recorded for a few localities in Quintana Roo and also was reported as being fairly common near Aquada Seca, Campeche, by Paynter (1955), who indicated that its habitat consists of dense rain forest with an open understory.

In Oaxaca the species was reported by Binford (1968) as an uncommon permanent resident of the Atlantic region in tropical evergreen forest from the Isthmus of Tehuantepec northwest to Taxcalcingo, at elevations of from 250 to at least 1,500 feet. No specimens are known from east of the Isthmus, but it is probably present in suitable habitats there as well. In Chiapas it occurs in humid forests in low and middle altitudes of the north, northeast, and northwestern portions of the state (Alvarez del Toro, 1964). Near Soconusco it was collected by Brodkorb (1939) at 750 meters elevation and was regarded as representing a new subspecies (*matudae*). Paynter (1957) reported it from the Selva Lacandona of eastern Chiapas, and it was listed by Goodnight and Goodnight (1956) as occurring in tropical rain forest at Palenque.

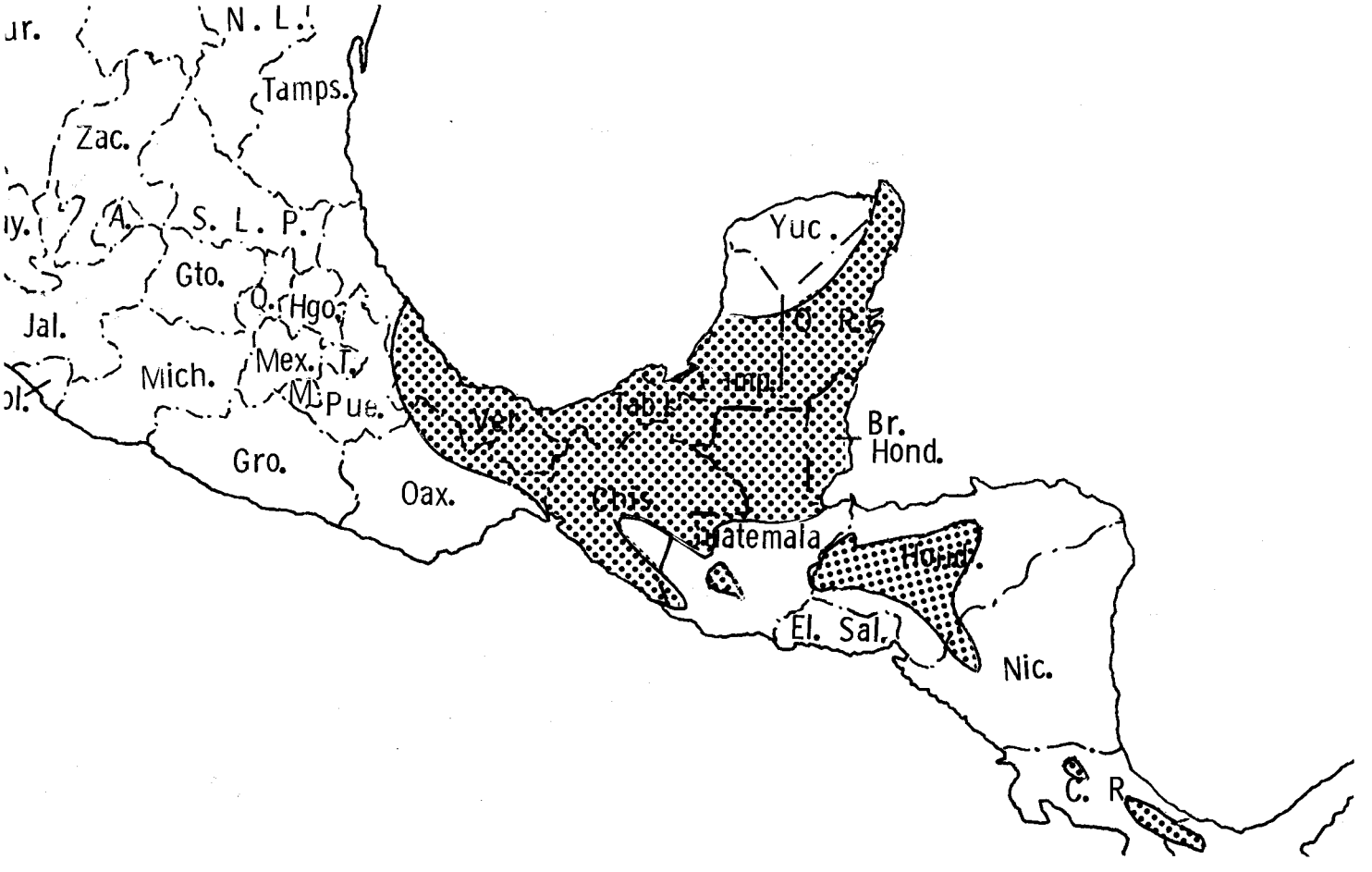

FIGURE 41. Current distribution of the spotted wood quail.

In Guatemala the spotted wood quail is characteristic of heavy rain forest, being found at lower elevations of from about 1,600 to 6,000 feet (Saunders, Halloway, and Handley, 1950). In British Honduras it occurs both in tall rain forest and high second growth (Russell, 1964). Griscom (1932) noted that although the bird occurs at fairly low elevations near the northern part of its range, it is primarily characteristic of cloud forest from Nicaragua southward, being replaced by *O. melanotis* at lower elevations. In Honduras it is most common above 600 meters and occurs at up to 2,000 meters, mainly in montane rain forest or cloud forest, but is less frequently found in lowland rain forest (Monroe, 1968). In Costa Rica it occurs from the middle of the subtropical belt upwards to timberline (Slud, 1964). Finally, in western Panama it is apparently confined to the Pacific slope and is mainly found between 1,250 and 2,100 meters in subtropical forest areas (Wetmore, 1965). It evidently occurs just below the Panama cloud forests, which on Cerro Pando lie between elevations of 2,100 and 2,290 meters along ridge-tops, and below which a montane rain forest extends down to about 1,800 meters (Myers, 1969). The rufous phase is apparently more common at the southern end of the species' range than it is in the north (Brodkorb, 1939).

POPULATION DENSITY

Not surprisingly, virtually nothing is known of population densities of this elusive, deep-forest species. It was recorded as being present in a census of lowland rain forest in Veracruz (*Audubon Field Notes*, 7:352–353, 1953), but evidently in numbers too few to estimate. It was also listed for an area of cloud forest near San Cristobál de las Casas (*Audubon Field Notes*, 8:374, 1954), but the species is not known to occupy these high elevations in southern Chiapas; thus, the record probably refers to singing quail or the buffy-crowned tree quail, which are both present in that region.

HABITAT REQUIREMENTS

Leopold (1959) has admirably summarized the habitat needs of this species: "The future status of the wood quail will depend entirely upon whether some of the dense rain forest is preserved. The bird disappears when the canopy is broken and a brushy understory springs up." There can be no doubt that this is the case. I was told that the bird was quite common on the lower part of the road from Ocozocoautla to the Presa Nezahualcoytl reservoir when this road had just been cut through the dense evergreen forest. However, it is now quite rare near the road where small milpas have broken the forest cover, being limited to a very few protected forest pockets

occurring on slopes too steep to cultivate. In the southern part of its range its habitat needs may be somewhat different, since Slud (1964) reports it as being typical of forest borders and secondary woodland as well as scrub and thickets, rather than tall forest.

FOOD AND FORAGING BEHAVIOR

Leopold (1959) reported finding crop contents of small bulbs and soft rootlets, as well as the larvae, pupae, and adults of insects, mostly of dipterans and coleopterans, as well as miscellaneous seeds and the white meat of a large nut or seed. Most of these foods are evidently obtained by scratching in the soft forest floor; the birds' strong toes are well adapted for such scratching. A pair of adults that I had in captivity for a few weeks preferred fruits, such as grapes, and softened grains to hard grains and dried beans.

Wetmore (1965) reported that the scratchings of this species are roughly circular and thirty centimeters or more across, with the leaves cleared away to expose the bare ground. Such depressions may be spread over an area several meters across where the forest floor is level. Referring to a related species, Skutch (1947) noticed that the birds scratched with long, deliberate strokes, using either one foot or the other, but only one at a time, then picked up material exposed by their actions. Birds fed side by side in apparent harmony, sharing the food they found and constantly uttering soft and low liquid sounds. Remnants of banana pulp were apparently favored foods.

MOBILITY AND MOVEMENTS

There is little reason to believe that these birds have extensive movements or are highly mobile, although Slud (1964) suggested that some seasonal vertical migration might occur in Costa Rica. The birds generally run rather than fly when they are frightened or may hide if they are not detected. Following such disturbance and a scattering of the group, they reunite with one another by uttering mournful-sounding whistles (Wetmore, 1965). Leopold (1959) noted that he could make the birds fly only by firing a gun, but apparently when they are approached by a dog they regularly fly up into a tree, from which they sit and watch the dogs below. Lowery and Dalquest (1951) mentioned the use of dogs in capturing these birds in Veracruz, and I was told the same method was sometimes used in Chiapas. Leopold (1959) noted that when the birds did fly they usually would not cover more than one hundred yards.

SOCIAL AND REPRODUCTIVE BEHAVIOR

During the nonbreeding season the birds move in fairly small coveys; Leopold (1959) indicated that they consisted of from five to ten birds in his experience. Alvarez del Toro (1952) reported somewhat larger coveys of from six to twenty birds.

On the Yucatán peninsula the bird is reported to breed in May and June (Paynter, 1955), corresponding to the beginning of the wet season. However, no nests have been found in the wild to my knowledge, either in Mexico or elsewhere in the bird's range.

So little is known of the reproductive biology of this species that a summary of what is known of the breeding biology of the other species of the genus might be presented, on the assumption that it is similar to the spotted wood quail.

Recent observations on a captive breeding of the spot-winged wood quail (*O. capuiera*) by Flieg (1970) indicate that in that species a domed nest is built, some forty to fifty centimeters across. Three birds (two males and a female) cooperated in gathering the material and throwing it backwards toward the nesting site. A total period of about three days was required to build the nest. Five eggs were then laid at daily intervals. When these were removed a second clutch of three eggs was laid about two weeks later. The incubation period was determined to be from twenty-six to twenty-seven days, and it required three and one-half months for the young to attain full size and an appearance very similar to that of their parents.

An excellent study of the general and nesting behavior of the marbled wood quail (*O. gujanensis*) has been provided by Skutch (1947), based on observations in Costa Rica. In addition to the mutual harmony the birds showed while foraging, he also observed reciprocal preening (allopreening) behavior among a group of six or seven birds, a behavioral trait not otherwise reported for the New World quails.

During ten years, Skutch found three nests, in the months of January, April, and June. All of them consisted of well-enclosed chambers, (in one case five inches high, five inches wide, and ten inches long), roofed over with dead leaves, twigs, grasses, etc., which had round entryways about four inches in diameter in the side. One was in a depression at the base of a mound produced by the roots of an uprooted tree, another was at the foot of a gentle slope near a road but in second-growth woodland, and the third was at the base of a fig tree, between the ridges of its roots. In this last nest there was a tubular cavity about nine inches long sloping downward to the base of the nest. Two of the nests contained four eggs each, and the other set was destroyed before the clutch was completed.

One of the nests was studied intensively, and only a single marked bird, probably the female, incubated. Except for a single feeding period of from nearly two hours to somewhat more than three hours, she remained on the nest continuously during the daylight hours. Each morning the presumed male would arrive and call his mate from the nest, but he would stop short of it. A third bird was with the male toward the end of the incubation period. Hatching occurred between twenty-four and twenty-eight days after incubation had begun, and the female led the young away from the nest when they were less than twenty-two hours old. On the morning of departure the male arrived and called repeatedly, and the female and young then emerged from the nest. While the female led away three of the chicks, the male remained behind to look after a laggard. Skutch noted several occasions when young chicks were seen with five or six grown adults, one of which typically would perform a distraction display as the chicks and other adults disappeared in the brush. Skutch thought that it was perhaps the male which took the responsibility for such distraction behavior.

Vocal Signals

The distinctive call of the *bolonchaco, cobán chaco, bulub'tok,* or *toto-loschóco* is indicated by these various local names, all of which represent interpretations of its typical call. Leopold (1959) said the call consists of six notes, repeated frequently, and is loud and strong. Wetmore (1965) reported that the usual series of phrases sounds like *wheet-o-wet-to-wheo-who,* with the last syllables sometimes changed to *to-whao.* This call is heard primarily at sunrise and often again near dark, so it probably functions in the same manner as the tree quail's "song," serving to notify other birds of the position of a covey or perhaps to gather them together for roosting at night.

Tape recordings made by L. I. Davis in Chiapas and filed in the Laboratory of Ornithology's Library of Natural Sounds indicate that at least two song types are present. One type (recorded in May, 1957) are of uniformly spaced *to-wet'* notes, uttered at 0.75-second intervals, with unbroken series of up to 31 such notes represented in the recordings by Davis. The second song type (recorded in April, 1958) was preceded by ten plaintive *wee-oh'* notes uttered at 1.8-second intervals, which led directly into a prolonged "song" consisting of repetitive and distinctively cadenced phrases, each lasting about 1.5 seconds and the individual phrases sounding like *whet'-o-wet, whe'-oo* (or *bo'-lon, cha'-co*). It seems probable that one bird sang the preliminary sequence of notes and a second bird sang all or part of the complex

note phrases. The similarities of this song type to that typical of the singing quail are clearly apparent.

I was not fortunate enough to hear this call under natural conditions, but I talked with a man who had a pair of wood quails in captivity. According to him the birds sang both at dawn and at dusk, during the daytime on cloudy days, and often just before a rainstorm. Both sexes of the pair sang simultaneously but had recognizably different voices, and the song usually lasted about two minutes. For a time, when the male was sick, the female would not sing, suggesting that the antiphonal calls may play an important role in pair bond maintenance as well as presumably serving as a pair contact call. Wetmore (1965) also noted that the call probably is uttered as a duet, as occurs in various other wood quails. Chapman (1929) thus described how a presumed pair of Colombian marbled wood quail (*O. gujanensis marmoratus*) faced each other and sang a song in unison, with one bird singing *corcoro* and the other ending *vado* so perfectly that the entire *corcorovado* sequence could almost have been coming from a single bird. Wetmore (1965) confirmed this and noted that when he collected the female of a pair the male continued to sing the first part of the song alone, until it apparently obtained a new mate some time later, and the complete song was once again heard.

When disturbed, the birds utter "mournful whistles" (Wetmore, 1965). These disturbance notes are very much like those of tree quails, being rapidly repeated whistling notes of varying pitches and amplitudes, occasionally interspersed with more rattling sounds. The birds usually raise their crests when uttering such calls, exposing the orange red feathers of the male or the more fuscous feathers of the female. When held in the hand, both sexes often utter strong and rapidly repeated piercing whistles of the typically down-slurred type characteristic of New World quails.

EVOLUTIONARY RELATIONSHIPS

Holman (1961) regarded the genus *Odontophorus* as the most primitive of the group of genera that also included *Dactylortyx*, *Cyrtonyx*, and *Rhynchortyx*. All of these species are terrestrial forms that are typical of forests or woodlands and probably obtain much of their food (not definite for *Rhynchortyx*) by scratching for soft vegetative materials such as rootlets, bulbets, and the like. Holman believed that the pelvic skeletal condition of *Odontophorus* exhibited strong affinities to that of *Dendrortyx*, and both are presumably more primitive than the other three genera of the group.

It would seem that the pattern of evolution of the *Odontophorus* group

was from a tree quail–like ancestral type that became more highly terrestrial and developed structural modifications that improved its foraging efficiency on the floor of wet tropical forests. This niche exploitation evidently opened the way to considerable range spread and speciation through the tropical forest of the New World, and the group must be regarded as the most successful of the New World quail genera on the basis of over-all range and number of extant species. Most of the species, however, exhibit allopatric distribution patterns, since presumably niche opportunities for foraging in this way are limited. Where more than one species does occur in a common area, there are apparently altitudinal differences that reduce interspecies contacts. Thus, for example, from Nicaragua southward to Costa Rica the spotted wood quail occurs with the dark-backed wood quail (*O. melanotis*), but there the latter occupies the tropical zone while the spotted wood quail occurs in cloud forest (Griscom, 1932). In Costa Rica and western Panama the black-breasted wood quail (*O. leucolaemus*) and the marbled wood quail (*O. g. castigatus*) also occur. Here the marbled wood quail occupies the tropical zone forests and the black-breasted wood quail occurs at intermediate elevations (in Panama) of from 1,350 to 1,600 meters (Wetmore, 1965). Slud (1964) gives the distribution of *leucolaemus* in Costa Rica as including upper subtropical and lower montane zones. Thus in the Dota region there is perhaps some contact with the spotted wood quail, which ranges from the subtropical zone to timberline.

The center of distribution of the genus *Odontophorus* would seem to be extreme northwestern South America, with five species occurring in both Colombia and Panama. To the north of this region, four species occur in Costa Rica, two in Nicaragua and Honduras, and only *guttatus* occurs in British Honduras, Guatemala, and Mexico. To the south and east, four species occur in Bolivia and Ecuador (assuming that *melanonotus* and *speciosus* are conspecific), three occur in Brazil and Venezuela, and one in Surinam, Guyana, French Guiana, Argentina, and Paraguay.

The two species with the largest ranges, the marbled (*gujanensis*) and spot-winged (*capueira*) wood quails, have allopatric lowland distributions and seem to represent a superspecies. Another large group of apparently allopatric populations is the highly variable *erythrops* group, which extends from Honduras southward via Colombia (including *hyperythrus*) to western Ecuador, where it is represented by *melanonotus*, and continuing on into Peru and Bolivia as *speciosus*. Some or all of these should probably be considered conspecific (Meyer de Schauensee, 1966).

In Panama and northern South America a group of generally white-throated (except for *atrifrons*) species occur in the subtropical zone, including the black-breasted (*leucolaemus*), Tacarcuna (*dialeucus*), gorgeted

(*strophium*), Venezuelan (*columbianus*), and black-fronted (*atrifrons*) wood quails. Some of these are of questionable specific rank and probably should be merged, as Hellmayr and Conover (1942) suggested for *columbianus* and *strophium*. Certainly *strophium* and *dialeucus* are also close relatives and probably represent geographic replacement types. The relationships of the melanistic forms *atrifrons* and *leucolaemus* to these populations and to one another are less clear at present.

The two remaining species are gray-throated, with chestnut underparts variably spotted with white. These are the apparently closely related stripe-faced wood quail (*balliviani*) of Peru and Bolivia and the more tropical starred wood quail (*stellatus*), which ranges from Bolivia to eastern Ecuador.

The spotted wood quail is in my view probably not so closely related to these two latter species with similarly spotted underparts as it is to the white-throated species group, particularly *dialeucus*. The relative geographic relationships between *guttatus* and *dialeucus* would also support a possible common origin, with the lowlands of the Panama isthmus providing a possible barrier. Only in the northern part of the spotted wood quail's present range is it adapted to lowland tropical rain forest, and there its niche in higher and also in somewhat drier habitats is taken over by *Dactylortyx*.