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20 Barred Quail

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Barred Quail

Philortyx fasciatus (Gould) 1844

OTHER VERNACULAR NAMES

BANDED quail, Chorrunda, Codorniz listada.

RANGE

Resident in semiarid tropical scrub of the Pacific slope from southwestern Jalisco to southeastern Guerrero, and inland to Morelos and Puebla, Mexico.

SUBSPECIES

None described.

MEASUREMENTS

Folded wing: Adults, both sexes, 94–104 mm (no consistent differences in the sexes).

Tail: Adults, both sexes, 58–68 mm (no apparent sexual differences).

IDENTIFICATION

Adults, 8–8.5 inches. The sexes are almost identical in appearance. This small quail of the arid parts of western Mexico has a brownish to grayish white head with a nearly straight crest of several feathers that are barred with black and brown. The body is generally grayish brown to gray, with the flanks and breast strongly barred vertically with brownish black and white.

FIELD MARKS

The heavy vertical barring of the flanks, and the generally grayish barred coloration throughout are distinctive field marks, as is the relatively straight crest of the same coloration. The elegant quail is somewhat similar to the barred quail and their ranges may partially overlap, but the elegant quail has spotted flanks and a larger, more differentiated crest.

AGE AND SEX CRITERIA

Females are difficult to distinguish from males, but on the basis of a few captive birds they apparently have a more brownish rather than grayish head and neck than do males, and the crest of females is shorter and less recurved than in males. However, examination of skins does not show consistent separation by these criteria. Judging from twenty-nine specimens, adult individuals with maximum crest length of 25 mm or longer are males, while those with crests of under 21 mm are females, but crests of intermediate length occur on both sexes.

Immatures have their outer two primaries relatively pointed and frayed and have buffy-tipped upper primary coverts (Leopold, 1959). Up until 4½ months of age, black feathers persist on the cheeks, throat, chin, and forehead.*

Juveniles acquire black facial feathers which (in captive birds) first appear at sixty-three days of age.* Prior to that time their throats are whitish and white shaft-streaks are evident in their body feathers.

Downy young of this species (illustrated in color plate 110) have not been described heretofore, but three specimens of known age (ranging from two days to three weeks old) in the Los Angeles Museum provide an excellent basis for description. In all, the throat is bright mustard yellow, darkening to olive yellow on the breast, sides, and abdomen, and to dull

*F. E. Strange, 1970: personal communication.

brown on the legs and under the tail (this dull brown extends considerably farther forward in the youngest bird than in the older ones, in which it is progressively less conspicuous). The back color is a dull chestnut, nearest that of *Colinus* but lacking any indication of darker or lighter streaking, being similar in this regard to *Dendrortyx* downies. The crown is a brighter chestnut than the back and is indistinctly margined with blackish, again similar to that of *Colinus*. No crest is evident, even on the oldest specimen. A conspicuous ochre-tinged superciliary stripe and subocular patch are present, between which a large brown auricular mark occurs, somewhat larger than in the mountain quail and similar in size and shape to that occurring in downy spotted wood quail. Juvenal primaries approximately 1 cm long are already present in the intermediate-aged (about one week old) specimen, and scapulars with conspicuous buffy shaft-streaks that widen at their tips, are starting to appear in the three-week-old specimen. In summary, the *Philortyx* natal pattern provides an excellent transition point between the relatively unpatterned and presumably primitive condition of *Dendrortyx*, and the highly patterned condition existing in *Oreortyx*, *Colinus*, and *Callipepla*.

DISTRIBUTION

Although the barred quail is often said to be limited to the "highlands" of western Mexico, it is in general much more typical of low and arid country, such as rain-shadow areas and interior river basins. Leopold's range map (1959) illustrates this situation, and he mentions that although the birds may occur at elevations of up to 5,000 feet or more, the densities are greater at lower elevations. To point out this altitudinal relationship more clearly, a more detailed range map has been prepared, with elevations above the 1,600-meter (5,200-foot) contour level indicated by shading. The predominance of records at lower elevations is quite clearly apparent in this map, as is the relationship of the species' distribution to the Río Balsas, Río Tepalcatepec and Río Armería drainage basins. Except for these major river systems, the species is largely limited to coastal regions, where it is abundant in thorn forest or tropical scrub habitats.

The species extends into Jalisco at the northern edge of its range (Schaldach, 1963) and to the south extends virtually to the Guerrero-Oaxaca border. I know of no specimens from Oaxaca, nor does Binford (1968) list the species for that state, but potential coastal scrub habitat does occur at the western limit of the state. At Copala, Guerrero, I was told by local residents that both barred quail and bobwhites occur (by showing them live specimens of each and asking them to comment on them),

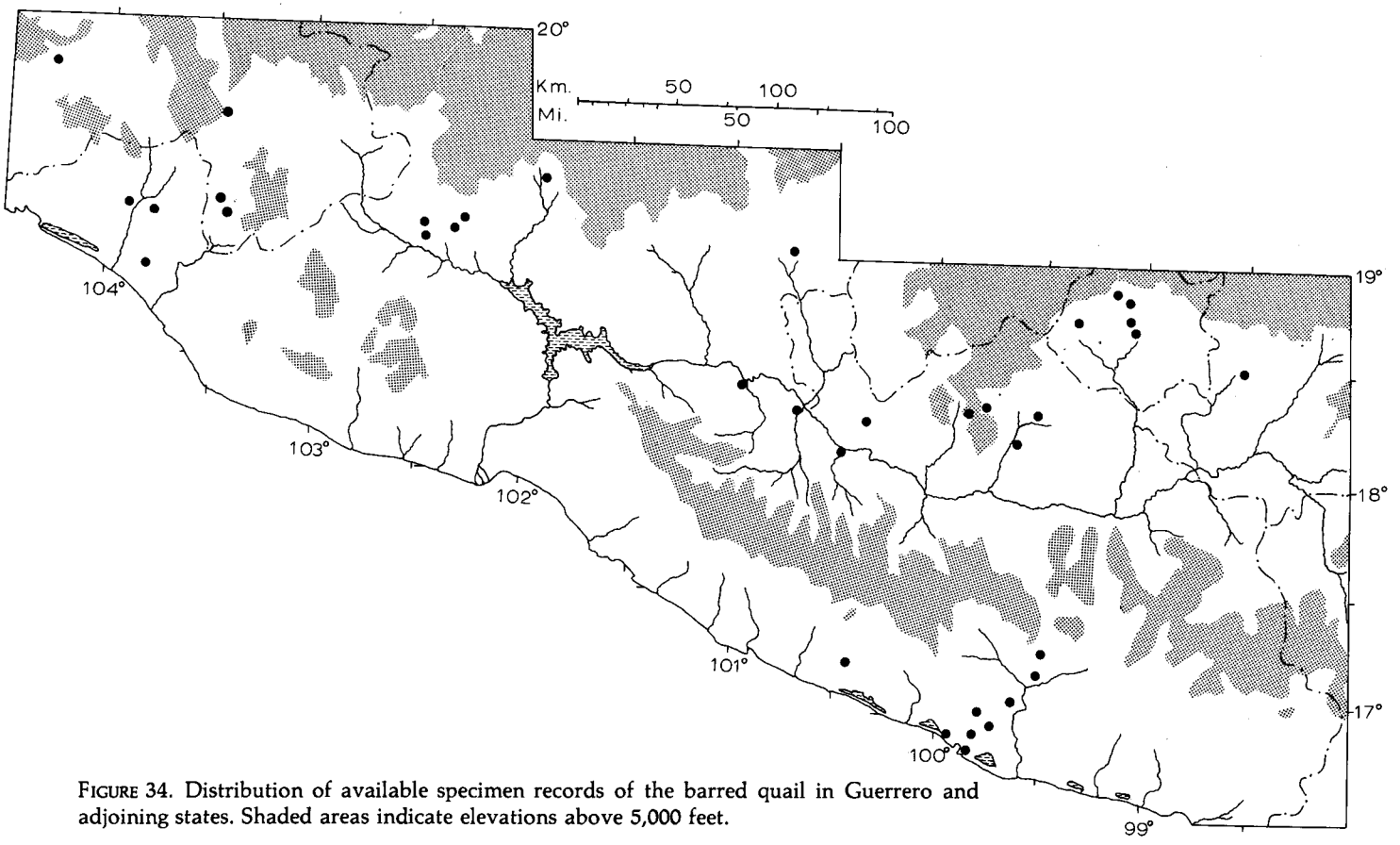

FIGURE 34. Distribution of available specimen records of the barred quail in Guerrero and adjoining states. Shaded areas indicate elevations above 5,000 feet.

however, persons from Pinotepa Nacional, Oaxaca, who were asked to identify these birds were not familiar with the barred quail.

I have seen no specimens of barred quail from the state of Mexico, but it is listed as occurring there by Friedmann, Griscom, and Moore (1950).

HABITAT AND DENSITY

Schaldach (1963) describes the preferred habitat of this species as open lowland thorn forest near cultivated fields, but also occurring as high as 5,000 feet on the Volcanes de Colima, Jalisco. Leopold (1959) noted that the birds were most abundant in weed-bordered agricultural areas in the valleys and alluvial flats of the lower Río Balsas basin. At Emiliana Zapata, near Cuernavaca, I found barred quail in an area that consisted of irrigated sugar cane and rice fields alternating with thorny brush thickets, but the birds were far more abundant near Acapulco, where they inhabited ungrazed or lightly grazed coconut plantations that contained brush thickets of mimosa and staghorn acacia that largely covered depressions or excavations where the moisture availability was favorable. In these nearly impenetrable thorn thickets the birds found shade and protection, and weedy herbs no doubt provided abundant food in the form of seeds and green leaves.

Leopold (1959) estimated that in favorable situations the density of barred quail probably exceeded one per acre, and coveys were spaced as closely as 150 to 200 yards apart. I flushed several coveys less than 100 yards from one another and would agree that at least one bird per acre would be a reasonable estimate of density in ungrazed or lightly grazed plantations near Acapulco. Barred quail appeared to be more common near waterways, but this probably reflected the increase in woody or brushy cover, rather than any need for drinking water.

FOOD AND FORAGING

Leopold (1959) examined a considerable number of these birds and found a wide variety of weed seeds, especially those of legumes such as *Desmodium* and *Crotalaria*. He also found a variety of seeds from various weedy herbs, such as sunflowers, thistles, corn cockle, and doveweed (*Croton*). He noted that beans and sesame seeds were also present in the crops. I found that a captive specimen preferred smaller seeds than those taken by bobwhites in the same cage, and it particularly liked sesame seeds. Barred quail also probably consume some insects, judging from observations of Blake and Hanson (1942).

It is doubtful that the birds do any arboreal foraging, but they often,

if not regularly, roost in trees. On several occasions I flushed small coveys out of trees in early morning hours, and once a flock of about ten birds flew into some trees in late afternoon after being flushed. Leopold (1959), however, noted that they may also roost in open low grass or weeds.

MOBILITY AND MOVEMENTS

Judging from my limited observations, the barred quail are highly sedentary. Most flights made by the birds were relatively short, under one hundred yards in length, and it was possible to return to the same area a day or more after flushing a covey and be confident of finding it not far from the earlier point of observation. The birds seemed highly reluctant to run, probably because of the irregular distribution of thorny bushes, and once hidden in such shrubs they could scarcely be flushed without thrashing the shrubbery with sticks, throwing objects such as coconuts into the middle of the brush, and making a considerable amount of noise.

Davis (1944) noted that in areas of sparse cover the quail tended to seek cover by flying a short distance, landing, and then running. More typically, they flew to the nearest dense brush and hid among small trees. When flushed from one tree they would simply fly to another.

SOCIAL AND REPRODUCTIVE BEHAVIOR

The barred quail is highly social, and rarely will single birds remain alone when separated from a covey. Indeed, I have sometimes seen a single bird flush from a brush patch in which a covey was hiding, hover in the air, and drop back down again in the brush if its flockmates did not take off. When flushing the birds utter a squealing *pee-urr* sound that is highly distinctive and is the basis for the local name *chillona*, or screamer, in the area around Cuernavaca. The other local name, *chorrunda*, is apparently onomatopoetic.

Leopold noted that the average size of eighteen coveys he observed was twelve birds and ranged from five to twenty. These were apparently fall and winter coveys, containing perhaps 50 percent young birds, and were considerably larger than the coveys I saw in June, which consisted of mature birds that had not yet separated into pairs for breeding. The average of seventeen coveys (some of which were doubtless repeats) was 5.8 birds, and the range was from 3 to 10 birds. This reduction of average covey size by at least half prior to breeding would suggest a fairly high annual mortality rate for the species, certainly in excess of 50 percent.

It is clear that the breeding season of barred quail is unusually late, and

certainly later than that of bobwhites breeding in the same area. I observed thirty bobwhites in the vicinity of Acapulco, all but eight of which were already paired, whereas none of the approximately one hundred barred quail I observed there between June 17 and June 25 were yet paired. Blake and Hanson (1942) collected a female barred quail with a hard-shelled egg in August in Michoacán, and Davis (1944) collected birds in breeding condition near Acapulco in early August. We were likewise told by natives near Cuernavaca that this species nests in August and lays fourteen to sixteen white eggs. None have been found in the wild by ornithologists to my knowledge, and Leopold (1959) had no information on nests or eggs.

Although the timing of egg-laying by captive birds cannot be regarded as typical of wild ones, it is interesting that the captive barred quail of F. E. Strange, Redondo Beach, California, have shown such a delayed breeding period. In 1967, the first year he had the wild-caught birds, they laid three eggs in early August. In 1968 they laid seven eggs in sixteen days, starting July 30. In 1969 they also laid seven eggs in sixteen days, starting July 26. In 1970 the laying began about a month earlier (July 1) than in the previous years, with seven eggs being laid. A second pair laid five eggs between August 25 and September 14, 1970. The eggs are entirely white, with five having measurements of 23–24.5 mm by 30–31 mm, averaging 23.7 by 30.2 mm. The eggs were laid in a simple nest in grass, which was slightly roofed over. Sixteen of these eggs had an average incubation period of 22.6 days, ranging from 21 to 23.

The role of the male in caring for the nest and young has not yet been determined, but the highly social nature of this species would lead one to expect that both sexes might attend the brood.

Vocal Signals

The characteristic squealing *pee'-urr* notes, which are uttered with a downward slur, can be heard nearly every time a covey is flushed. When individual birds are separated from the covey after flushing, they regain contact by uttering soft *cheep-cheep'* whistled calls. On one occasion I saw a bird that had been separated after flushing stand near the edge of an acacia thicket with crest erect and utter a fairly loud *ca-ut'-la* call over twenty times in fairly rapid succession, which finally terminated with two whistled *pee'-urr* notes. This three-noted call, which I heard on only a few occasions, would seem to be the basis for the Spanish name *chorrunda.* It may well correspond to the *pay-cos* call of the scaled quail and the comparable *chi-ca-go* call of the California quail, for it has very similar sound characteristics and may fulfill a comparable separation call function. Zim-

merman and Harry (1951) heard *pip-pip-pip* notes uttered by birds fleeing on foot and described the flight call as *pee-pee-pee-eeee.*

The single bird which I have kept in captivity has produced several calls, but their functions are uncertain. Judging from crest length and the appearance of the head plumage, the bird seems to be a male. Often in late afternoon or early morning it will utter a long series of *ca* or *cow* notes, like the first note in the *ca-ut'-la* call described above. These series may consist of as few as ten or as many as twenty-six individual notes, all uttered at about the same amplitude and frequency, but increasing slightly in cadence. One recorded series of thirteen notes lasts seven seconds, while another of fifteen notes lasts eight seconds. The male could be stimulated to utter this call by our playing it back to him, and this, plus the conditions under which it was normally uttered, made me believe that it serves as a location-announcement call.

I was never able to elicit a typical hand-held distress call from this bird, but sometimes while being held or otherwise disturbed it frequently utters a low, rattling note, quite similar to that produced by the bearded tree quail under the same circumstances. However, a juvenile that I once handled produced a long series of typical quail distress notes.

The general sounds of the non-whistled *ca* and *ca-ut'-la* calls of the barred quail are surprisingly similar to calls such as the *pay-cos* of the scaled quail, and I heard a few calls of interest that were produced by some barred × scaled quail hybrids, reared by Alvaro Aragon at the Estación de la Fauna, Centro de Investigaciones Basicas, Progreso, Morelos. These birds, when disturbed, produced a series of low rattling or "chittering" notes, apparently comparable to the barred quail's rattling notes mentioned above and the repeated *pit* sounds of disturbed scaled quail. As I left the cage, one of the males uttered five rapid nasal notes with a slight head-throw as each note was uttered, doubtless representing the "head-throw" call of the scaled quail. One hybrid female was held in the hand, but did not utter a distress call. These twelve hybrids are the only ones that have yet been reported involving the barred quail. Since none of the females, then two years old, had yet laid any eggs, it may be presumed that they are completely infertile.

EVOLUTIONARY RELATIONSHIPS

The barred quail seems to represent an important "transition" species, with some traits, primarily skeletal, that appear to be primitive and suggest affinities with the tree quail group. In its social behavior and its vocalizations, however, it appears to be closer to the *Callipepla* group of arid-adapted terrestrial quails, which it also resembles in its ecology. There

would seem to be no good reason for merging *Philortyx* with *Callipepla*, as Delacour (1961) has suggested doing; if anything the species may be more closely related to *Oreortyx* or *Colinus* than to *Callipepla*, but in neither case does the relationship appear to be particularly close.

The adult plumage pattern of the barred quail is probably more like that of the scaled quail than any other species, and the plumages of the hybrid barred × scaled quail mentioned earlier emphasize the great similarities in adult plumage patterns. The appearance of a black throat in the juvenal plumage is unique to the barred quail and presumably represents an ancestral trait that has been suppressed in adults. Black throats are, of course, found in many New World quails, such as the long-tailed tree quail and adult males of Gambel and California quails, as well as in some races of bobwhites.