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Notes on a Race of the Ash-throated Flycatcher, *Myiarchus cinerascens pertinax*, of Baja California

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The Ash-throated Flycatcher, *Myiarchus cinerascens*, is a bird of the temperate desert and scrub communities of western North America. Its breeding range extends from the southern tip of the central plateau of Mexico (southern San Luis Potosi and northern Guanajuato and Jalisco) north to northern Oregon and west to central Texas. Only two races are admitted in the most recent revision (Lanyon, 1961): *M. c. pertinax* Baird (1859), restricted to Baja California south of latitude 29° N.; and *M. c. cinerascens* Lawrence (1851), from the remainder of the range of the species.

In a recent study based on an analysis of some of the vocalizations of these flycatchers, Davis (1961) wrote, "a difference in song pattern suggests that *pertinax* may have attained a development sufficiently different from *cinerascens* to be considered specifically distinct." Davis' suggestion was not supported by morphological or zoogeographical evidence. But specific limits within the genus *Myiarchus* are sometimes more readily and accurately determined by a comparison of vocal repertoires than by the use of morphological characters (Lanyon, 1960, 1961). Since I had had no personal field experience with the Baja California populations, I was unable to evaluate Davis' contention of a difference in "song pattern,"

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nor could I ignore it in the course of my revision of the genus. Consequently, I am most grateful to the administrators of the Leonard C. Sanford Trust Fund of the American Museum of Natural History for enabling me to spend the period from May 7 to 12, 1962, observing and recording *pertinax* near La Paz, at about latitude 24° N. I am indebted to Dr. Richard C. Banks of the Natural History Museum at San Diego,

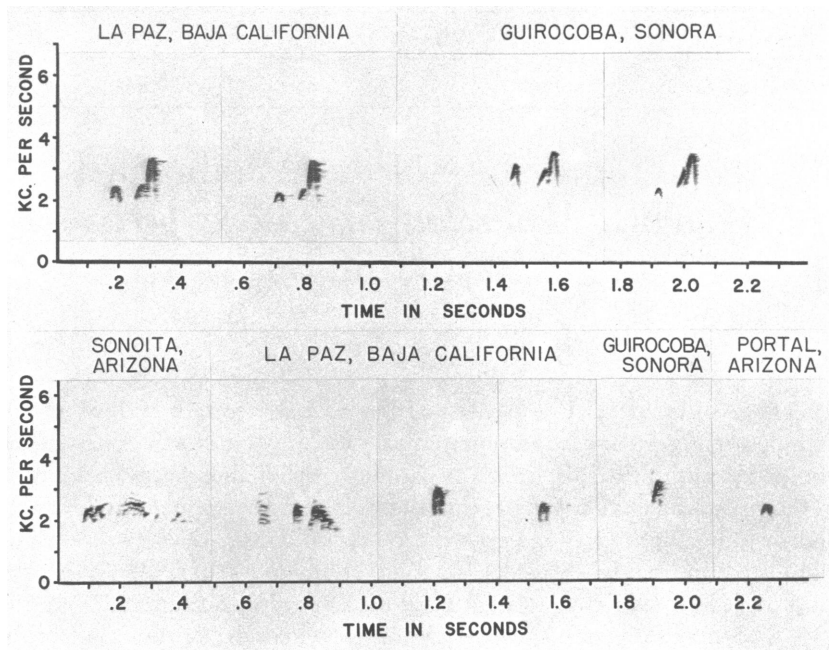


FIG. 1. Sound spectrograms of the "ka-brick" call (top row), derived from a combination of two of the four basic vocal patterns of the species. The initial component of this call, the "huit," appears as a discrete call in the last four graphs of the bottom row. A third basic pattern, the "urg" note, is shown in the first two graphs of the bottom row.

California, for helpful suggestions, and to Mr. Richard Adcock of La Paz for favors granted during my visit. This is a report of the results of that trip and a reëvaluation of the relationship of *pertinax* and *cinerascens*, based on an examination of museum specimens and of field recordings of audio characters.

As reported in greater detail elsewhere (Lanyon, 1961), *pertinax* averages smaller than *cinerascens*, with a more rounded, shorter wing and shorter tail. In samples of 51 *pertinax* and 441 *cinerascens*, both male and female

pertinax had wing lengths that measured (flattened) an average of 3 mm. shorter than those of *cinerascens*, and tail lengths 2 mm. shorter than those of *cinerascens*. This relationship reflects a similar tendency for reduction in size exhibited in the southernmost breeding populations of *cinerascens*, in Sonora and the central plateau of Mexico. However, the bill length (from anterior margin of nostril) of *pertinax* averages 0.3 mm. longer than that of

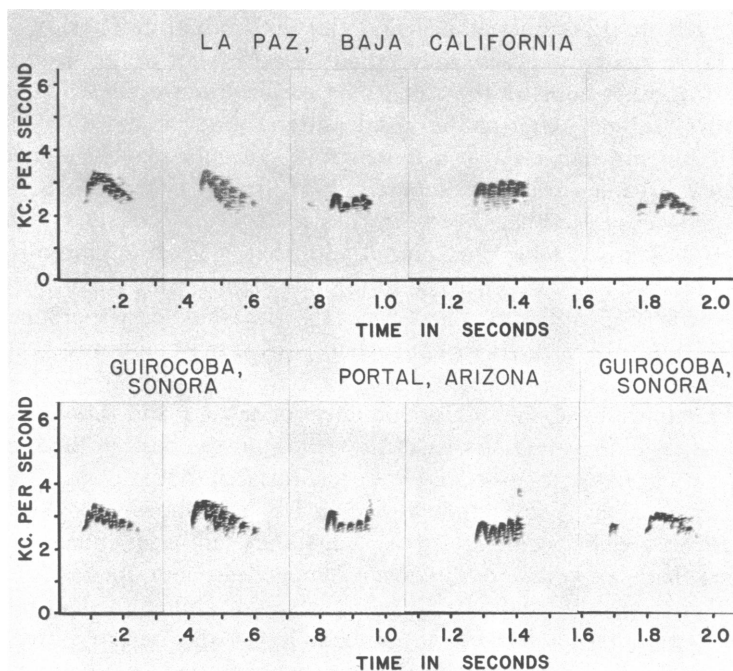


FIG. 2. Sound spectrograms of the "wheer" call recorded from populations at La Paz (*pertinax*) and in Arizona and Sonora (*cinerascens*). A combination of this call and another of the basic vocal patterns produces the "ha-wheer" call shown in the last graph of each row.

cinerascens, while the Mexican populations of *cinerascens* show no such increase in bill length with their decrease in wing and tail lengths.

I can find no significant difference in plumage coloration between the two forms, including the extent and pattern of the fuscous areas on the inner vanes of the rectrices. It has been noted that, in the other species of this genus, one of the first morphological indications of racial divergence and incipient speciation is a differentiation in this rectrix pattern. One of the three races (*brachyurus*) of the Middle American populations of

Myiarchus tyrannulus is so identified, as is the nominate race of *Myiarchus nuttingi*.

Davis (1961) made a distinction between "calls" and "songs" in the vocalizations of *Myiarchus*, and limited his comparative analysis to the latter. These "songs" are the "dawn songs" or "twilight songs" reported for a number of the tyrannid flycatchers (Nice, 1931; Saunders, 1951). The biological function of these dawn songs is not known, though Saunders (1929, p. 129) questions their value in establishing territory and attracting a mate, otherwise they "should start earlier in the season and be sung at other hours of the day." The vocalizations rendered at dawn and dusk include many of the vocal patterns associated with daylight activity but are delivered at a more rapid rate and may be subject to somewhat greater variation (Saunders, 1951, p. 83). Davis reports (1961, p. 341), for example, that the "song" of *M. cinerascens* consists of a rhythmic series of two-syllable phrases and adds that "the same phrase is also frequently used as a call when the bird is not singing." His sound spectrograms clearly identify this disyllabic call with the "ha-wheer" call, a characteristic call of daylight hours that is discussed below and graphed in figure 2.

My comparison of the audio characters of *pertinax* and *cinerascens* will be made, as in my other studies of the genus, on the basis of the species-specific vocal patterns associated with territorial activity during daylight hours. Each of the species studied thus far has been shown to render certain species-specific vocal patterns by which they can be identified readily. We now have experimental evidence that at least four species (*crinitus*, *tyrannulus*, *cinerascens*, and *tuberculifer*) possess the ability to discriminate between these repertoires of the daylight hours and react positively to that repertoire representative of their own species (Lanyon, 1963). Moreover, from a practical standpoint, a larger and more accurate series of sound recordings and associated specimens can be accumulated by concentrating on these vocalizations rather than upon the dawn songs. Such a procedure is especially critical in areas of sympatry where poor visibility could conceivably lead to errors in the collecting of those individual birds whose "songs" had been recorded.

In the population of *pertinax* located 5 miles southwest of La Paz, most individuals were paired, but I found no evidence of feeding of young. Territorial encounters were frequent and noisy, so that it was not difficult to obtain tape recordings of representative vocalizations. My equipment included a Magnemite recorder, operating at 15 inches per second, a preamplifier, and an Altec 660B microphone mounted in a 24-inch parabolic reflector. A minimum of 10 pairs were observed and recorded.

All recordings were analyzed by ear in the laboratory, and subsequently 45 representative vocal patterns were selected for analysis with a sound spectrograph. Spectrographic analyses of representative vocalizations of *cinerascens* were available from a previous study in Arizona and Sonora (Lanyon, 1961).

The vocal repertoire of *cinerascens* has been shown to have four basic patterns (Lanyon, 1961). These same four patterns were found in the repertoire of *pertinax* at La Paz: (1) "huit," seen as the first component of each of the disyllabic calls in the top row of figure 1, and given as a discrete call in the last four graphs of the bottom row of figure 1; (2) "brick," seen as the last component of each of the disyllabic calls in the top row of figure 1, and less often rendered as a separate call; (3) "wheer," a variable, undulating pattern depicted in all the graphs of figure 2; and (4) "urg," the second component of the first graph and the first component of the second graph, bottom row, figure 1. As was the case in Arizona and Sonora, considerable individual variation was noted in all four of these basic patterns within the La Paz population.

The "wheer" call is especially variable, as shown by the variety of patterns in figure 2. Since it is this call that serves as the basis for the dawn song in this species, it follows that recordings of dawn song are likely to exhibit considerable variation from one population to another and, indeed, from one individual to another within a single population. An unawareness of the specific limits of this variability is a possible explanation for Davis' interpretation (1961) of "a difference in song patterns" between these forms.

The two most diagnostic audio characters of *cinerascens*, i.e., those having no counterpart in the repertoire of the sibling species *M. nuttingi* or of any other *Myiarchus* studied thus far, can be phonetically described as the "ka-brick" and "ha-wheer" calls. The "ka-brick" call is a disyllabic call derived from the combination of basic patterns 1 and 2. Two renditions of this call from the La Paz population are compared with their counterparts from Sonora in the top row of figure 1. The "ha-wheer" call is similarly derived from the combination of two basic patterns, 1 and 3, and is presented for comparative purposes in the last graph of each row in figure 2. It is apparent that these diagnostic calls, not found in any other North and Middle American species of *Myiarchus*, are shared by both *pertinax* and *cinerascens*.

CONCLUSIONS

Davis' statement (1961, p. 343) that "*pertinax* and *cinerascens* are not

found together” is misleading in that it implies disjunct, allopatric populations. In reality they are but representative forms along a north-south gradient—a continuous, breeding distribution from San Diego to Cabo San Lucas (Grinnell, 1928). On the basis of a shorter average wing and tail length, but longer average bill length, the breeding populations throughout the southern three-fourths of Baja California are racially separable (*M. c. pertinax*) from the remaining populations throughout the range of the species (*M. c. cinerascens*). The two forms do not differ with respect to plumage coloration, including the fuscous pattern of the rectrices which is considered a valid species indicator in this genus. Furthermore, no differentiation was found between the vocal repertoires associated with territorial behavior in the two races. *Myiarchus c. pertinax* and *M. c. cinerascens* have two identical, diagnostic calls in their vocal repertoire that are not found in any other species of *Myiarchus* in North and Middle America. Davis’ interpretation of a “difference in song pattern” is attributed to an unawareness of the degree of variability of the basic vocal pattern from which the “song” is derived. The lack of appreciable divergence, morphologically and acoustically, between the southern and northern populations in Baja California confirms what one would expect on the basis of distributional data.

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