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PARAPATRY IN WOODHOUSE'S AND CALIFORNIA SCRUB-JAYS REVISITED

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Geographical variation in the scrub-jays (the *Aphelocoma coerulescens* species group) has intrigued and confounded ornithologists both before and since Pitelka's (1951) extensive review. In part on the basis of the work of Peterson (1990, 1992), the American Ornithologists' Union (1995) elevated the widespread continental scrub-jays (*A. californica*, the "Western Scrub-Jay") and the endemic jay of Santa Cruz Island (*A. insularis*, the "Island Scrub-Jay") to full species rank, restricting the name *Aphelocoma coerulescens* to the isolated Florida Scrub-Jay. Components of the Western Scrub-Jay have at times been given full species rank, in the form of a division between birds of the Pacific coast (the *A. [c.] californica* group of subspecies, hereafter "California Scrub-Jay") and birds of interior western North America (the *A. [c.] woodhouseii* group, "Woodhouse's Scrub-Jay"); an additional group of subspecies (the "Sumichrast's Scrub-Jay," *A. [c.] sumichrasti*) occurs on the southern Mexican plateau. Woodhouse's and California Scrub-Jays were treated as separate species most recently by Swarth (1918).

Minor variation in plumage and measurements, differing identifications of type specimens, and vague type localities for old names have sparked taxonomic disagreements and, indeed, markedly conflicting nomenclature (e.g., Phillips 1986). Pitelka's landmark study (1951) did establish limited intergradation between the two groups in a zone of parapatry around the Pine Nut Mountains of Douglas Co., Nevada, with intergrades encountered north to the Virginia Mountains and south to the California border area of northernmost Mono Co. Pitelka also documented intergradation in the Owens Valley region, Inyo Co., California.

Larry Sansone took the photos on the back cover west of Wellington, Nevada, in the southernmost Pine Nut Mountains. The upper photo (taken 7 December 1996) shows a bird apparently typical of Woodhouse's Scrub Jay in the western Great Basin, *A. c. nevadae* according to Pitelka's (1951) nomenclature. The brighter bird in the lower photo (15 December 1996) shows characters of Pacific Coast birds (the nearest subspecies of the California Scrub-Jay being *A. c. superciliosa* of the 5th edition of the A.O.U. Check-List) but could represent an intergrade.

Woodhouse's Scrub-Jays of the western Great Basin are readily told from California Scrub-Jays by several plumage and structural characters. The head, rump, and tail of *nevadae* are pale blue washed with gray, recalling a Pinyon Jay, and the underparts are gray with a blue wash on the undertail coverts; as a result, *nevadae* shows only a weak contrast between the bluish head and gray-brown back and between the dull bluish collar and the blended gray underparts. California Scrub-Jays are deeper blue dorsally, with strong contrast between the blue head and gray-brown back; they are mainly whitish below with a deep blue collar that is interrupted medially, and the undertail coverts only occasionally show a pale blue wash. California Scrub-Jays also show a blacker auricular patch with a more contrasting white supercilium (again, these areas appear more blended in *nevadae*). Structurally, the bill of *nevadae* has a distinctly thinner base and less decurved culmen than the stouter bill of coastal birds; *nevadae* has relatively longer wings than California Scrub-Jays. We caution here that more easterly Woodhouse's Scrub-Jays of the subspecies *woodhouseii* and *texana* are somewhat brighter blue above than *nevadae*, though the other distinctions from

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the California group still hold; southward through Mexico, culminating in the Sumichrast's Scrub-Jays, the plumage becomes even more "California-like."

We have found Woodhouse's Scrub-Jays to be consistently much shyer than California birds; more easterly Woodhouse's may tame down in a few picnic areas (e.g., in the Davis Mtns. of Texas), but typically *nevadae* is quite skittish. Vocally, at least within the core range of *nevadae*, the common upslurred "jrr-eee?" call is relatively high pitched and almost two parted, so that the first syllable is level and the second rises abruptly. California Scrub-Jays have a somewhat lower, harsher and monosyllabic "shhrrreee?" call. The rapid "shreek shreek shreek..." series of Woodhouse's is, to our ears, higher pitched and squeakier.

Woodhouse's Scrub-Jays wander erratically away from their breeding range in fall and winter, with notable movements occurring every several years (most recently during the fall and winter of 2000–2001). In invasion years they may move as far as the southern Mojave Desert, the Imperial Valley, and the lowlands of southeastern Arizona. Exceptionally birds may wander west over the crest of the Sierra Nevada, e.g., in Yosemite National Park at Tuolumne Meadows (Gaines 1988) and McGurk Meadow, where Dunn observed one on 15 September 1996. There may be even more movement into the Pacific coast region, but vagrants there would be more difficult to detect than in areas where any scrub-jay is unusual. Eastward movements of California Scrub-Jays are far more limited, but birds of this group have occurred, for example, on the northern Mojave Desert at Galileo Hill, Kern Co., California (M. T. Heindel in litt.), and R. Higson collected one of the subspecies *obscura* in El Centro, Imperial Co., California 10 August 1989 (SDNHM 45999).

The California and Woodhouse's groups of scrub-jays were lumped (American Ornithologists' Union 1931) in an era when the polytypic species concept first gained wide acceptance. Given the recognition of species status for the isolated Island and Florida scrub-jays, similar status for the Woodhouse's and California groups is perhaps not unwarranted. Indeed, Woodhouse's and California Scrub-Jays seem to us more distinct from one another than do the Island and California Scrub-Jays. Such a revision, however, requires further elucidation of the status of the *sumichrasti* group in south-central Mexico. Additional field studies of the behavior, vocalizations, ecology, and breeding biology of scrub-jays in the region of parapatry in western Nevada will also be enlightening.

We thank Larry Sansone for obtaining these instructive photos, and Ed Harper for sharing some of his photos of Woodhouse's Scrub-jays from Idaho. Philip Unitt made a number of very helpful editorial suggestions.

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