

RECORDS OF THE BLACK MERLIN IN NEW MEXICO, WITH COMMENTS ON ITS IDENTIFICATION

ROBERT W. DICKERMAN, Museum of Southwestern Biology, Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131; bobdickm@unm.edu

The nesting range of the Black Merlin (*Falco columbarius suckleyi*), adapted to the temperate rain forest, has been reported as southeast Alaska (Gibson and Kessel 1997), coastal British Columbia (AOU 1957), and adjacent Washington (Wahl et al. 2005). Not all of this distribution has been documented with specimens collected in the nesting season, although some nesting individuals have been trapped and examined in Washington state (C. M. Anderson, fide C. M. White, in litt., 2013). Migrants and wintering birds have been recorded in Oregon (Marshall et al. 2003) and California (AOU 1957). Elsewhere, specimens have been reported from Arizona (Monson and Phillips 1981), New Mexico (Jewett 1944, Friedmann 1950), Colorado (Bailey 1942), Nevada (Alcorn 1943), Idaho (Burleigh 1972, Haak and Sawby 2012), Utah (Behle 1985, Haney and White 1999), Wisconsin (Friedmann 1950), and New Jersey (Capainolo and Pitocchelli 1990).

From New Mexico, eight specimens have been previously identified as *F. c. suckleyi*, by Jewett (1944), Friedmann (1950), John P. Hubbard, or me (Table 1). Four of the eight New Mexico specimens are housed in the Museum of Southwestern Biology (MSB).

To reassess the subspecific identifications of the New Mexico specimens, I reviewed the taxonomic treatments of the darker-plumaged Merlins of North America by Ridgway (in Baird and Ridgway 1874), Swarth (1935), Friedmann (1950), Temple (1972a, b), Palmer (1988), Hamilton and Schmitt (2000), Wheeler (2003), and Warkentin et al. (2005).

Ridgway's very brief description of *Falco columbarius* variety *Suckleyi* (in Baird and Ridgway 1874) was poor, but he did designate two syntypes, a male (U.S. National Museum [USNM] 4477) from Shoalwater Bay, Washington, and a female (USNM 5882) from Fort Steilacoom, Washington.

Friedmann (1950), presumably using these type specimens among others, mentioned that *F. c. suckleyi* has only three light-colored bars in the outer rectrices, in contrast to the three or four in *F. c. columbarius*, without specifying the frequency of three versus four bars in *columbarius*. In his count of the number of bars Friedmann apparently disregarded the most basal, which is largely hidden by the undertail coverts.

In a major revision of the species, Temple (1972a, b) analyzed the plumage of the Merlin on the basis of five regional samples, eastern, central, and western taiga (*F. c. columbarius*, including *F. c. bendirei*), "prairie parkland" (*F. c. richardsoni*), and "coastal forest" (*F. c. suckleyi*). No single character distinguished the coastal forest sample from all the others, but a combination of characters did. In over 90% of 104 coastal forest specimens the light bars did not extend to the inner edge of the outermost primary, thus being spots rather than bars, whereas in >90% of the specimens of the other four regional samples they did so. About 90% of the coastal forest specimens had the crown solid dark or with dark streaking far more extensive than the lighter background coloration, a pattern characterizing <20% of the specimens in the other four samples, in which light coloring was more prominent. Less diagnostic was the number of light bars in the outer rectrix; 100% of specimens of *F. c. suckleyi* had four or fewer bars, while only 9% of *F. c. columbarius* did so.

Temple (1972a) took colorimetric readings of the five small regional samples and of all sex/age classes. Regardless of sex/age class, *F. c. suckleyi* was far darker dorsally (ventral data not presented) in "brightness" (15.7 ± 0.3 versus $17.0\text{--}17.9 \pm 0.4\text{--}0.6$,

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means \pm standard error) than specimens of the other four samples. There was a small degree of overlap in dominant wavelength (23.4 ± 0.3 versus $24.1\text{--}25.8 \pm 0.4\text{--}0.7$), especially with the “eastern taiga” sample of nominate *columbarius*.

Four of the eight specimens from New Mexico are in the Museum of Southwestern Biology; I borrowed the others from the museums holding them, the U.S. National Museum of Natural History (USNM), Slater Museum, University of Puget Sound (PSM), and the Department of Biology, New Mexico State University (NMSUB), except for one specimen in the Museum of Zoology, University of Michigan (UMMZ 175043). To gain a better appreciation of the plumage characters of *F. c. suckleyi*, I examined seven additional specimens collected on Vancouver Island, British Columbia, and preserved in the Museum of Vertebrate Zoology (MVZ), University of California, Berkeley: MVZ 15627, ♂, Errington, 2 September 1910; MVZ 15629, ♀, Errington, 10 September 1912; MVZ 15630, ♂, Errington, 21 September 1910; MVZ 15631, ♀, Errington, 22 September 1910; MVZ 89861, imm. ♂, Comox, 9 March 1941; MVZ 99935, Quatsino, 31 August 1934; MVZ 99942, ♂, Seal Islands (Comox), 3 August 1927. I consider 15629, 15630, 15631, 99935, and 99941 to be “ultra-typical standards” of *F. c. suckleyi*. I pooled females and immature males in all comparisons of plumage characteristics.

I evaluated all specimens on the basis of two characters defining *F. c. suckleyi*, both of which are exemplified by the five “ultra-typical” specimens from Vancouver Island: (1) four light-colored bars in the outer rectrix, and (2) light markings on the inner web of the outermost primary appear as spots, rather than as bars as in *F. c. columbarius*. These two criteria accompanied the dark color and pattern of the crown and the darkness of the dorsum and venter. My reassessments of the eight New Mexico specimens are as follows.

1. USNM 194613, immature ♂, Lake La Jara [Rio Arriba Co.], 18 September 1904, collected by J. H. Gaut. This specimen had been identified by W. W. Cooke (in Bailey 1928) and J. W. Aldrich (label annotation, 1947) as *F. c. columbarius*, then as *F. c. suckleyi* by Friedmann (1950) and J. P. Hubbard (in notes, 1991), and finally as *columbarius* \times *suckleyi* by Hubbard in 2012. On the basis of the barring on the inner web of the outer primary and the only moderately dark upperparts and ventral streaking it is *F. c. columbarius*.

2. PSM 10055, ♀, [Ghost Ranch, near] Abiquiu [Rio Arriba Co.], 26 December 1946, shot by an unknown employee of Ghost Ranch. This specimen became 2234 in the collection of S. G. Jewett (1944), who identified it as *F. c. suckleyi*. J. P. Hubbard identified it as *F. c. columbarius* intermediate toward *suckleyi* in 2012. I consider it *F. c. columbarius* \times *suckleyi* because of its only moderately heavy ventral streaking, mainly barred inner web of the outer primary, and having four tail bars.

3. UMMZ 175043, ♀, Reserve [Catron Co.], 12 October 1927, collected by H. H. Kimball. Originally identified on its label as *F. c. columbarius*. In 1962 and 2012 J. P. Hubbard identified it as *F. c. columbarius* \times *F. c. suckleyi* on the basis of its dark coloration, but its outer primaries are barred. I have not examined it.

4. MSB 4613, ♀, Albuquerque, Bernalillo Co., 16 September 1979, collected by J. Johnson, prepared by D. L. Pennington. I identified this specimen as *F. c. suckleyi* in 1995, as did J. P. Hubbard in 1998 and 2012. On the basis of the spotted inner webs of the outer primaries, darkness of the venter, and four tail bars it does appear to be *F. c. suckleyi*.

5. MSB 6738, ♀, Albuquerque, Bernalillo Co., 4 January 1990, received from Wildlife Rescue, Inc., of Albuquerque. In plumage color, this specimen looks like *F. c. columbarius* dorsally and *F. c. suckleyi* ventrally, as I noted in 1995 and did J. P. Hubbard in 1998. On the basis of its more barlike marks on the inner web of the outer primaries, less deep ventral coloration, and five tail bars I now regard it as *F. c. columbarius* \times *F. c. suckleyi*.

6. MSB 20581, “♀” on label (but immature ♂ by size), Manzano Mountains, Tor-

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rance Co., 20 January 1998, received from Shirley Kendall. Though J. P. Hubbard identified this specimen as *F. c. suckleyi* in 1998, I consider it *F. c. columbarius* × *F. c. suckleyi* on the basis of the barred inner webs of the outer primaries and darkness of the underparts.

7. NMSUB 3858, ♀, Albuquerque area, Bernalillo Co., 20 March 1999, received from M. Hamburg. As did J. P. Hubbard in 2012, I identify this specimen as *F. c. columbarius* intermediate toward *F. c. suckleyi* on the basis of the inner web of the outer primary being both spotted and barred and the outer rectrix having five pale bars.

8. MSB 23665, immature ♀, Villanueva, San Miguel Co., 3 October 2000, found by G. Sena, sent to K. Ramsey, from whom the MSB received it. Again, this specimen may be regarded as *F. c. columbarius* × *F. c. suckleyi*, not qualifying as clearly *suckleyi* because of its insufficiently dark venter, mixture of spots and bars on the inner webs of the outer primaries, and five tail bars.

My results support the suggestion of Wheeler (2003) that away from the subspecies' usual range, any prospective *F. c. suckleyi* needs to be compared rigorously to the standards. It demonstrates that *F. c. suckleyi* cannot be identified definitively in the field or casually in the museum (as evidenced by the misidentifications I correct here, including some of my own!). For example, three of the four specimens from southern California illustrated by Hamilton and Schmitt (2000) are identified in error as *F. c. suckleyi*: they have too many tail bars, and the markings visible on primaries are bars rather than spots. Likewise, my results strongly suggest that the numerous records of *suckleyi* from the interior of North America be re-examined on the basis of these more stringent criteria. Many of the records based on observations or photographs will prove to be inconclusive.

Nevertheless, *F. c. suckleyi* does occur casually at least as far south and east as New Mexico, as attested by MSB 4613, collected at Albuquerque on 16 September 1979.

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