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BLACK-CAPPED GNATCATCHER, A NEW BREEDING BIRD FOR THE UNITED STATES; WITH A KEY TO THE NORTH AMERICAN SPECIES OF *POLIOPTILA*

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ON 22 June 1971 one of us (S. S.) collected a family of five gnatcatchers, including three fledglings, along Sonoita Creek, 8.5 km north-east of Nogales, Santa Cruz County, Arizona. The adults, male and female, were later determined on careful comparison to be Black-capped Gnatcatchers (*Poliioptila nigriceps*), an endemic species of northwestern Mexico never previously recorded in the United States. Hitherto the northernmost records had been east-southeast of Hermosillo, Sonora (van Rossem, 1945) and near Ures, northeast of Hermosillo (Phillips, 1962), localities approximately 240 and 210 km, respectively, south of Nogales. Thence it ranges south to Colima.

Friedmann (1957) recognized two races, *restricta* Brewster of Sonora and adjacent Chihuahua and nominate *nigriceps* Baird of Sinaloa and Durango to Colima; these he regarded, however, as subspecies of the more southeastern *P. albiloris*—a treatment with which we cannot agree (see below). Brewster's name refers presumably to the more restricted black caps of his Sonora males, which however were taken in late winter and probably had not completed the prealternate (prenuptial) molt; whereas Baird's type was in worn summer plumage. Though this character has been generally recognized, no difference in the extent of black, according to geographic area, is obvious to us. There is, however, a cline of increasing size, best marked in tail length, northward; on this basis birds of northern Sinaloa are nearest *restricta*, though somewhat variable, and all Sonora birds are *restricta*. The Arizona pair, though worn, are of maximum dimensions: wing (chord) 49.8 mm in the male (48.1 in female); tail 55.6 (54.5 in female, despite the loss of the central pair of rectrices). The Arizona birds are thus unequivocally referable to *restricta*.

Observers (W. H. et al.) first saw the male of the family on 22 May

1971, but did not identify it. Not until 15 June was the male thought to be *P. nigriceps* (W. H.). The male and female were feeding three well-feathered young in the nest on 17 June, and on 19 June the young fledged. We (S. S., W. H. et al.) captured and photographed two fledglings and both adults, and made measurements of the latter just after the young fledged. It was later apparent, upon the examination of specimens of *P. nigriceps* and *P. caerulea* (Blue-gray Gnatcatcher) that the photographs and data we had recorded were inadequate for the conclusive identification of both adult birds, especially the female, as true *nigriceps*. On 21 June one of us (W. H.) collected one unhatched egg and the nest. All specimens are now in the University of Arizona bird collection.

Among southeastern Arizona gnatcatchers, the breeding habitat preferences of *P. caerulea* and *P. melanura* (Black-tailed Gnatcatcher) are distinct and nonoverlapping. *P. caerulea* is found here as a breeding bird in the Upper Sonoran Life Zone (chaparral, encinal, and pine-oak woods, in decreasing order of preference; see Marshall, 1957); whereas *P. melanura* is restricted entirely to the arid parts of the Lower Sonoran Life Zone (Phillips et al., 1964; Smith, 1967). In Sonora *P. nigriceps* is found in lowland riparian associations. The *nigriceps* taken in Arizona were in tall (4 m) mesquite (*Prosopis juliflora*) in association with the Sonoita Creek riparian growth, at an elevation of approximately 1,190 m. Other dominant plants in the vicinity included cottonwood (*Populus Fremonti*), willow (*Salix* sp.), netleaf hackberry (*Celtis reticulata*), tapiro (*Sambucus mexicana*), and groundsel (*Senecio* sp.) in the creek bottom, and mesquite and catclaw acacia (*Acacia greggii*) on the slope above the nest site. Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*), and soapberry (*Sapindus saponaria*) are less common in the area.

On 26 June and 18 July 1970 a male gnatcatcher with a black cap was seen and heard scolding (W. H.), each time at the same location along Sonoita Creek, approximately 450 m upstream from where the above *nigriceps* were taken in 1971. Since G. Monson (pers. comm.) agrees with our observations, dating back to 1947, that the area in question along Sonoita Creek is not *P. melanura* habitat, it is quite likely that the bird seen in 1970 was also a *P. nigriceps*. There are no known breeding or summer records of either *P. caerulea* or *P. melanura* along Sonoita Creek in this vicinity.

IDENTIFICATION

The identification of North American gnatcatchers presents serious problems, and is not to be undertaken lightly. The difficulties are

all too obvious to anyone acquainted with the controversies and disagreements about the number of species of *Polioptila*, starting with Griscom (1930) and van Rossem (1931). Indeed Griscom (1930) included in one subspecies, which he called *P. bilineata albiloris*, populations actually belonging to what are here considered three distinct species: *P. plumbea*, *P. albiloris*, and *P. nigriceps*! Later Griscom (1934) lumped under "*P. b. nigriceps*" specimens of at least the latter two plus *P. caerulea*, as pointed out by Brodkorb (1944). Brodkorb (1944) and Phillips (1962) presented keys pointing out the differences in plumages between the Mexican species of black-capped, white-tailed gnatcatchers, but neither key was effective for identifying all individual specimens. Despite these keys of van Rossem and later workers, disagreement as to taxonomy still persists: Friedmann (1957) and Paynter (1964) both treat *nigriceps* as conspecific with *P. albiloris*; but Phillips (1962: 350) pointed out that *albiloris*, in appearance and seasonal changes of plumage, is more like the partially sympatric *P. plumbea* (see also Zimmer, 1942). As *P. nigriceps* shows no approach to these characteristics, even in Colima (where it most closely approaches the range of *albiloris*, so far as known), the treatment of these forms as conspecific by Friedmann and Paynter ignores what biological evidence we possess. Marked differences in plumage sequences, recurring annually, indicate that two forms have diverged to the level of full species, whereas the probable existence of a small gap between their ranges is not necessarily an indication of biological similarity. Biologically, therefore, the evidence is clearly against the treatments of Griscom, Friedmann, and Paynter, particularly in view of the much greater similarity of forms that react as full species in sympatry (*albiloris* and *plumbea*).

Even Ridgway (1904: 711) expressed dissatisfaction with his "tentative" key to the genus and "frankly admit[ted his] uncertainty," stating that "at least five times as many specimens as I have been able to examine would be necessary to enable one to feel any considerable confidence in the results reached after careful study; ten times as many specimens would, of course, be better."

Thus there has never been a key adequate for identifying all individual gnatcatchers! To remedy this clearly frustrating situation, we present the following key (prepared by Phillips):

Key to the species of North American gnatcatchers, including the Middle American mainland (excluding juveniles).

- A. Tail, including its sides, mostly black; the black covers the basal half, or more, of the inner webs of *all* the rectrices (those of the outer pairs, in some races, broadly *tipped* with white; and outer web may be white). Both sexes, in fresh plumage, with back more or less washed with brownish. Lores and superciliary

- region without white. (Male black-crowned in alternate plumage, i.e. mid- or late March to August.) Deserts and arid areas of northern Mexico and adjacent United States *P. melanura* Lawrence.
- A'. Tail largely white laterally; the white covers most or all of the exposed part of *both* webs of the outer pair of rectrices, and the distal half or more of the next pair. Male with back always plain (neutral or gull) gray, without any obvious brown tinge. (Plumage otherwise variable.) Widespread. B.
- B. A narrow but conspicuous white eye-ring (except in alternate-plumaged male *nigriceps*, February or later to about September), complete and in contrast to the darker colors of the lores, superciliary region, upper and posterior parts of the auriculars, etc., none of which are white or whitish; auriculars (in these plumages) concolor with sides of neck, gradually paling ventrally toward the throat but not really white anywhere. No white-striped pattern on head (no white superciliary nor distinct dark postocular line). Both sexes with central parts of crown gray (rarely mixed with dusky, and never black except in alternate-plumaged male *nigriceps*, in which the whitish of the lower auriculars becomes shaded with grayish above, toward the black crown). Canada to Honduras and El Salvador. C.
- C. Female strongly washed, in fresh plumage (fall and winter), with brown above and with buffy brownish on flanks posteriorly. Male with crown wholly black in alternate plumage (gray in basic plumage). Wing more rounded than in northern races of *caerulea*: primary no. 8 (third from outside) shorter than no. 4 (seventh from outside); latter about 1 mm, or less, shorter than no. 7. Primary 9 extends beyond tip of 10 (outermost) for usually 12-14.5 mm (rarely up to 15 or more). Tail more graduated, the longest rectrices usually exceeding the outer pair by 9 to 12 mm, never (?) less than 8 mm, when unworn. Lowlands and coastal mountains of western Mexico, south to Colima (or possibly Michoacán?), and recently in extreme southern Arizona. *P. nigriceps* Baird.
- C'. Neither sex with obvious brown wash anywhere, nor with crown wholly nor largely black; if any black is present on the head (i.e. alternate-plumaged male), it is limited to the forehead and a narrow extension of this as a line extending back along the sides of the crown (above the eyes), to form a thin U. Wing, in western Mexico and north, more pointed: primary no. 8 usually much longer than no. 4; latter 2.5 to 4 mm shorter than no. 7. Primary 9 extends beyond tip of 10 for (usually) 16.3 to 20 mm, rarely less than 16 and always (?) more than 15.0 mm. Tail less graduated, usually for 5.5 to 8 mm (rarely over 9.5) when unworn. United States, southern Canada, and (at least in winter) whole of Mexico; winters south and east to El Salvador. *P. caerulea* (Linnaeus).
- B'. No conspicuous white eye-ring; if present, it is not narrow and not abruptly contrasted to the adjacent loreal, superciliary, and/or subocular regions. Auriculars partly or wholly whitish, not strongly clouded with gray (at least at upper posterior edge), and thus in abrupt contrast to the dark postocular line; latter separated, in its anterior part, from crown by a white superciliary stripe, or else lores whitish (in either case forming a striped face pattern), *except* in alternate-plumaged *albiloris* (about February or March to August or September). Crown of male black at all seasons, usually without gray admixture. South America north to southern Mexico, as far as Yucatan, the Río Balsas basin, and Michoacán. D.

- D. Superciliary stripe white at all seasons. Tail shorter, in male usually less than 44 mm, maximum on mainland 44.7 (maximum in female 43.5); tail 3 to 7 mm shorter than wing (chord). Humid woodland and borders (and, at least from Panama south, semiarid scrub and chaparral), from South America to the Isthmus of Tehuantepec in southern Mexico. *P. plumbea* (Gmelin).
- D'. Supraloral or superciliary stripe white in nonbreeding season (basic plumage) only; crown, including these regions, wholly dark in alternate plumage (about February or March to August or September). Tail longer, minimum 44.5 in male, 44 in female; tail ranges from 2 mm shorter to 5 mm longer than wing (chord), if unworn (but is rarely if ever more than 0.5 mm shorter in Mexico). Low, open arid woodland and scrub from southern Mexico (as above) to northwestern Costa Rica. *P. albiloris* Sclater and Salvin.

In addition to the evidence of specific distinctness just presented (complete separation in seasonal color changes and tail proportions), on morphological grounds, it should perhaps be mentioned that Griscom's claim (in van Rossem, 1931) of direct intergradation of the northern Yucatan *P. albiloris albiventris* with other black-capped forms of *Poliophtila* is impossible in any case; they are widely separated geographically and ecologically (cf. Paynter, 1955).

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LITERATURE CITED

- BRODKORB, P. 1944. The subspecies of the gnatcatcher *Poliophtila albiloris*. J. Washington Acad. Sci., 34: 311-316.
- FRIEDMANN, H. 1957. Family Sylviidae. Pp. 201-208 in Distributional check-list of the birds of Mexico, part 2. (A. H. Miller, H. Friedmann, L. Griscom, and R. T. Moore, Eds.). Pacific Coast Avifauna, No. 33.
- GRISCOM, L. 1930. Studies from the Dwight Collection of Guatemala birds, 2. Amer. Mus. Novitates, No. 414.
- GRISCOM, L. 1934. The ornithology of Guerrero, Mexico. Bull. Mus. Comp. Zool., 75: 367-422.
- MARSHALL, J. T., JR. 1957. Birds of pine-oak woodland in southern Arizona and adjacent Mexico. Pacific Coast Avifauna, No. 32.

- PAYNTER, R. A., JR. 1955. The ornithogeography of the Yucatan Peninsula. Peabody Mus. Nat. Hist., Bull. 9.
- PAYNTER, R. A., JR. 1964. Subfamily Polioptilinae. Pp. 443-455 in Check-list of birds of the world, vol. 10 (E. Mayr and R. A. Paynter, Jr., Eds.). Cambridge, Massachusetts, Mus. Comp. Zool.
- PHILLIPS, A. R. 1962. Notas sistemáticas sobre aves mexicanas, 2. Anales Inst. Biol. Univ. México, 33: 331-372.
- PHILLIPS, A., J. MARSHALL, AND G. MONSON. 1964. The birds of Arizona. Tucson, Univ. Arizona Press.
- RIDGWAY, R. 1904. The birds of North and Middle America, part 3. U. S. Natl. Mus., Bull. 50, part 3.
- SMITH, E. L. 1967. Behavioral adaptations related to water retention in the Black-tailed Gnatcatcher (*Polioptila melanura*). Unpublished M.S. thesis, Tucson, Univ. Arizona.
- VAN ROSSEM, A. J. 1931. Concerning some *Polioptilae* of the west coast of Middle America. Auk, 48: 33-39.
- VAN ROSSEM, A. J. 1945. A distributional survey of the birds of Sonora, Mexico. Mus. Zool., Louisiana State Univ., Occ. Pap. 21.
- ZIMMER, J. T. 1942. Studies of Peruvian birds. No. 42, the genus *Polioptila*. Amer. Mus. Novitates, No. 1168.

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