Lesser Nighthawk: Identification Pitfalls

Tony Leukering

Elsewhere in this issue, Leukering (2016a) summarized the occurrence of Lesser Nighthawk (*Chordeiles acutipennis*) in Colorado. That article also provided a teaser for this column, which treats a number of unappreciated or under-appreciated problems in identifying the species in the state and elsewhere. Chief among these problems is a beast called *Chordeiles minor henryi* (hereafter "Henry's"), the subspecies of Common Nighthawk that breeds in the southwestern United States.

Though Lesser Nighthawk (hereafter "Lesser") averages smaller than Common Nighthawk (hereafter "Common"), the difference is so small as to be only marginally useful in field identification, particularly when considering the range of size variation among the various subspecies of Common, **five of which occur in Colorado** (Bailey and Niedrach 1965). Pyle (1997) reports the range of wing chord (a widely used index of overall size) of Lesser as 158–196 mm (6.2–7.7 in) and that of Common as 163–210 mm (6.4–8.3 in), while Sibley (2014) notes little difference in overall length (Lesser 9 in [229 mm], Common 9.5 in [241 mm]). Thus, plumage characters are critical in *Chordeiles* identification, both in color and pattern, but also in relative lengths of individual feathers.

Flying nighthawks present multiple characters by which well seen individuals can be identified [though see Sibley (2014) for difficulty of differentiating Common and Antillean (*C. gundlachii*) nighthawks in flight], with the plumage features touted as most useful being 1) the placement relative to wingtip or wrist of the pale primaries patch, 2) the relative lengths of the outer two primaries on each wing, and 3) buff spotting on the primaries of Lesser Nighthawk. Identifying perched nighthawks, however, can be surprisingly tricky, though perched birds can often be studied more closely and more thoroughly, offsetting the disadvantages. The mottled camouflage provided by the plumage of all nightjar species is complex and quite variable, both across and within species. This variability is exacerbated in nighthawks (and other nightjar species) by "possible chromatism (gray and brown plumages) in juv[enile]s (and possibly also adults)" (Pyle 1997). Additionally, juvenile plumage in the genus is different from that of adults of the same species: the white throat patch is absent or obscured, the pale primaries patch is reduced in size, the primaries have

distinct white or buff tips forming a contrasting trailing edge (Pyle 1997), the plumage is overall paler by subspecies, and the scapulars are relatively plain brown, lacking the "bold, black and buff pattern" (Pyle 1997) typical of adult scapulars. Finally, males in all but juvenile plumage sport a wide subterminal white band on both inner and outer webs of the tail feathers (so visible from both above and below), a feature lacking in females.

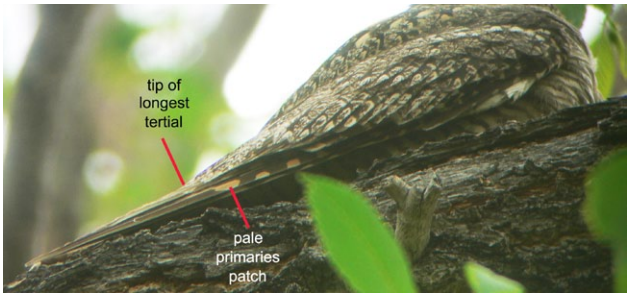

Fig. 3. Note the placement of the relatively non-contrasting pale primaries patch relative to the tertials and the buff spotting on the bases of the outer primaries on this female Lesser Nighthawk. Chico Basin Ranch, Pueblo County, CO, 28 May 2010. Photo by Bill Maynard

Also important in nighthawk identification is foraging behavior. Lesser has a strong tendency to forage low over water or other habitat features (Sibley 2014, W. Russell pers. comm.). While Common also frequently forages at low altitude, the species is much more likely to be seen foraging at relatively high altitudes than is Lesser, thus suggesting that low-foraging nighthawks receive particular attention from those searching for Lesser.

Fig. 1 (back cover). Note the nearly equilateral triangle shape to that part of the wingtip beyond the pale primaries patch and that p10 is shorter than p9 on this adult male Lesser Nighthawk. Also note the rows of buff spots on the secondaries and primaries, particularly the buff spots on the bases of the outer primaries, a feature not matched in any form of Common Nighthawk. See text for details of ageing and sexing. Aravaipa Canyon, Pinal County, Arizona, 10 June 2014. Photo by Ned Harris

Fig. 2 (back cover). Note the attenuated triangle shape to that part of the wingtip beyond the pale primaries patch and that p10 is (barely) longer than p9 on this adult male Common Nighthawk. This illustration represents probably the least equilateral-triangle shape in the species, as the hand is completely extended. The shape of the triangle can vary in a single individual depending upon how the wingtip is held. Note also that among the primaries, only p1–2 sport even vague spotting. See text for details of ageing and sexing. Carrizo Work Center, Comanche National Grassland, Baca County, CO, 31 May 2011. Photo by Tony Leukering

to vagaries of how an individual holds its wing, the patch may be obscured by the tertials or other feathers, though with the more-interior position on Common, the patch on that species seems more likely to be obscured than that of Lesser. However, the female Lesser Nighthawk's buffy patch can be difficult to discern in many situations, as it gets lost in all the other buffy bits on the primaries, though it is the most-distal bit of buff on each of those primaries (Fig. 3).

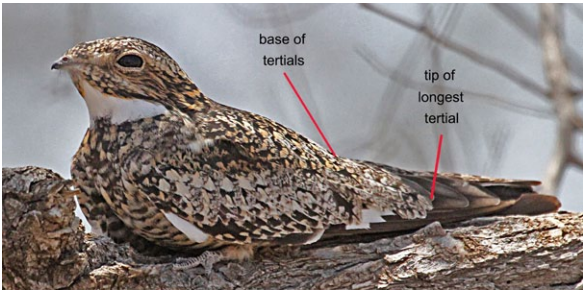

Fig. 4. Note the placement of the pale primaries patch relative to the tertials, as well as the typical stair-step shape of the patch, on this adult Common Nighthawk. The date and location of the photograph strongly suggest that this bird is referable to henryi, a contention supported by the fairly buffy appearance to the plumage. Yeso, De Baca County, NM, 12 June 2011. Photo by Jerry Oldenettel

Fig. 5. Note the placement of the pale primaries patch relative to the tertials, and the nearly straight distal edge of the patch, on this male Lesser Nighthawk, which exhibits oddly little buff spotting on the bases of the primaries. Santa Ana N. W. R., Hidalgo County, TX, 22 February 2005. Photo by Marshall J. Iliff

Relative lengths of p9 and p10. Adult Commons typically have every successive primary from the innermost (p1) to the outermost (p10) longer than the preceding one, resulting in the longest primary being the outermost (Fig. 2 on back cover). However, some individuals exhibit the two outermost (p9 and p10) being of equal length (Pyle 1997) or, even, with p10 being slightly shorter than p9 (15 of >140 adult Commons in pictures on Flickr showed p10<p9). The p10 of Lesser is typically shorter than the next feather inward (p9; Fig. 1 on back cover), though with some having those two feathers of similar length (Pyle 1997). Though the absolute difference in this feature in the two species is rather small,

Fig. 6. This juvenile Common Nighthawk exhibits the white trailing edge to the primaries typical of the plumage class, as well as having p10 shorter than p9. Cape May Point S. P., Cape May Co., NJ, 18 September 2013. Photo by Tom Reed

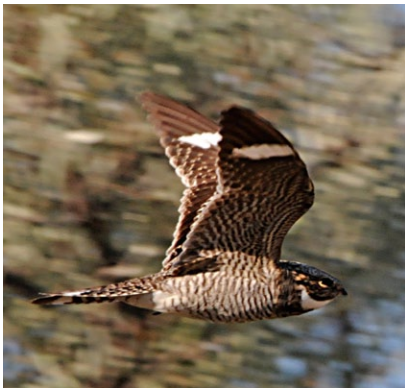

Fig. 7. This Common Nighthawk shows the buff spotting on the primaries typical of henryi, providing, apparently, the first record of the taxon from the county. Crow Valley Campground, Pawnee National Grassland, Weld County, CO, 30 July 2011. Photo by Steven G. Mlodinow

Fig. 8. The extensive buff spotting to the primaries strongly suggest that this bird is referable to Henry's Common Nighthawk. Ageing as a juvenile is straightforward, with the lack of a white throat patch, small size of the pale primaries patch, and the obvious pale tips to the primaries. Crow Valley Campground, Pawnee National Grassland, Weld County, CO, 12 August 2015. Photo by Steven G. Mlodinow

In the discussion below, I expanded on my personal experience with these two species (Common *n*>10,000, Lesser *n*>200) by studying pictures on Flickr (www.flickr.com) of nighthawks with wings open (Common *n*>220, Lesser *n*>50) and folded (Common *n*>125, Lesser *n*>60). Among Common Nighthawks, I studied subsamples of birds in juvenile plumage (*n*=23; photos taken in August and September) and those that I determined to be in their second calendar year of life (SY; photos taken in May through August), that is about one year of age (*n*=12). Finally, I noted the p9:p10 ratio on a subsample of >140 apparent adult Commons.

Pale primaries patch. A large, pale patch cuts across the outer 4–6 primaries (p5–p10) on *Chordeiles* nighthawks. On Commons, this patch is white and is present on at least five primaries (p6–p10), extending to p5 on many (most?) and even onto p4 in a small minority (adult males?; pers. obs.). On Lessers, the patch is white in males, buff (to off-white?) in females, and extends only to p7 in most, but extending to p6 on a minority (e. g., https://www.flickr.com/photos/finaticphotography/11197122063; again, adult males?). However, determining which and how many primaries are involved in the pale patch is difficult, often impossible, to discern in the field. Thus, for nighthawks in flight, determining the placement of this patch relative to the wingtip and wrist is the critical feature (Pyle 1997, Sibley 2014). On Commons, the patch is just a bit closer to the wingtip than halfway out the wing from the wrist, while on Lesser it is nearly ¾ the distance toward the wingtip from the wrist. The result of this different placement might best be determined by the appearance of the shape of the wingtip beyond the pale patch, **which is roughly an equilateral triangle (sides all of about equal length) in Lesser, but a triangle in Common that is taller than the base is wide** (Figs. 1 and 2 on back cover). The pale primaries patch on female Lessers is of such low contrast with the wing (and none at all with the buff primary spotting) that the patch can be difficult to discern (Fig. 3), particularly in low-light conditions. Thus, a nighthawk with no discernible pale patch in the ABA area is a female Lesser.

On perched nighthawks, however, it is the placement of the pale patch relative to the tertials that is important. **On Common, the leading edge of the patch is typically about even with the bases of the tertials** (Fig. 4), **while on Lesser it is about even with, or just short of, the tip of the longest tertial** (Figs. 3 and 5; Sibley 2014). Common also has a strong tendency for the distal (away from the body) edge of the patch to have a stair-step shape cutting diagonally away from the edge, while this appearance is reduced or absent in Lesser. Due

it contributes greatly to the overall more-rounded appearance of the wingtip of Lesser.

Of course, the situation is not as straightforward as all that (we *are* discussing biology!) and there are caveats involving age and molt. Commons, like virtually all birds, leave the nest in juvenile plumage (= first basic plumage; see Leukering 2010). In my sample of 23 individuals of Common Nighthawk in juvenile plumage (in 21 pictures posted to Flickr; see introduction), the exact wingtip formula was determinable in 20. Of those 20, 18 birds had p10 shorter than p9, thus supporting my understanding of this difference in wingtip shape obtained through personal observation of nighthawks (Fig. 6). Since the juvenile flight feathers are retained through the species's preformative molt, a Common Nighthawk that sported a p10 shorter than its p9 in its first month of life will exhibit the same appearance when about a year old in the following summer. [In my sample of 12 apparent SY Common Nighthawks, seven exhibited a shorter p10. This apparent discrepancy in proportions between juvenile plumage (90%) and formative plumage (58.3%) is due to one or more of four causes: 1) an effect of small sample size, 2) my mis-ageing of the subject birds, 3) misunderstanding of the molt strategy of the species (Pyle 1997), and 4) the continued growth of p10 such that the true length of p10 is achieved only after leaving the ABA area. I believe that the first two causes are the most likely, particularly the second, though the fourth has some merit.] **Thus, ageing the subject nighthawk is critical to understanding whether the bird's p10 being shorter than its p9 has species-identification usefulness**.

Finally, wing-molt strategies of the two differ quite dramatically in adults, with Lesser molting on or near the breeding grounds and Common molting on South American winter grounds. Throwing a monkey wrench into an otherwise clear-cut situation is the fact that one-year-old Commons initiate wing molt on or near the breeding grounds and can conduct half (or more) of the wing molt north of Mexico (e.g., https://www.flickr.com/photos/michael_rosenbaum/3849448932).

Buff markings on primaries. Another feature touted as a differentiating characteristic between Lesser and Common nighthawks is the rows of buffy spots on Lesser primaries, a feature that is "supposed" to be lacking on Commons. While the secondaries are spotted on all Lessers (buff), many Commons exhibit secondary spotting (buff to white). [Since the secondaries are typically not visible when the wing is folded, the spotting is of little consequence to identification of such birds. Care should be used in determining which feathers are spotted, as a brief view of spotting on the outer secondaries of a flying night-

hawk might be construed as spotting on the inner primaries. Note also that the secondaries are mostly hidden in many wing postures as seen from below on nighthawks, as the long—and spotted—greater coverts obscure most of the length of the secondaries (Fig. 1).] In fact, though, a small percentage of individuals of most or all subspecies of Common have at least a few spots on one or two inner primaries, though these spots seem to be small and not obvious. However, we have now reached the main reason behind this essay: unlike all other subspecies of Common, Henry's exhibits extensive buff spotting on the secondaries and inner primaries, thus engendering the possibility of additional confusion with Lesser.

Henry's Nighthawk

The precise breeding range of Henry's has yet to be worked out, nor do we know what happens where this taxon meets other subspecies of Common (*hesperis* to the north and west, *howelli* to the north and east). The Common Nighthawk subspecies map in NGS (2014) presents *henryi* as occupying only the very southwest corner of Colorado, while Pyle (1997) notes the species as breeding from southeastern Utah to southeastern Colorado south to southern Arizona and western Texas, with vagrancy to, at least, Florida. However, Bailey and Niedrach (1965 and references therein) note Henry's as breeding "in Mesa and southwestern counties," citing specific specimens housed at the Denver Museum of Nature & Science from Archuleta (#3148), La Plata (#s 3219–3223), and Mesa (#s 22157–22159) counties, all taken in July. Additionally, apparent Henry's have been photographed on multiple occasions in Weld County, a male and a juvenile in different years at Crow Valley Campground, Pawnee National Grassland (Figs. 7 and 8).

Despite the individual variation typical of nighthawks, there are quite a few features of Henry's that may permit subspecific identification, chief among them being the rows of large buff spots on the inner five primaries, a feature that is, to greater or lesser extent, lacking in other subspecies of Common Nighthawk. Adults exhibit brownish upperparts with "coarse, buff or tawny mottling giving an overall cinnamon appearance" and with underparts "buffy, with moderately narrow dusky bars" (Pyle 1997). These features are fairly different from those of *howelli* (the breeding subspecies in much of the rest of Colorado, excepting the northern plains)—"upperparts pale brownish with buff mottling" and "underparts whitish buff with moderately wide, dusky bars"—and *sennetti* (the northern-plains breeding subspecies)—"upperparts medium-pale grayish, without buff tones" and "underparts whitish with narrow, dusky bars" (all Pyle 1997).

As noted previously, juveniles of each of these subspecies tend to be paler than adults of the same subspecies, with juvenile *sennetti* being particularly paler (Sibley 2014; "juvenile northern plains").

A Call to Arms, er, Cameras

Despite the great advances that recent birding effort has made in understanding the geographical and temporal occurrence patterns of Colorado's birds (Leukering 2016b), there is still a plethora of such topics about which we know very little. Heretofore, subspecies distribution has been the province of ornithology, with little that birders could do to advance our understanding. While there are many aspects of ornithology to which birders cannot contribute in meaningful ways, with the advent of high-quality, relatively low-cost digital SLR cameras, that line between ornithology and birding in regards to subspecies ranges has been blurred quite a bit.

Bailey and Niedrach (1965) noted four subspecies of Common Nighthawk as breeding in Colorado—Western (*hesperis*), Henry's, Howell's (*howelli*), and Sennett's (*sennetti*)—and noted Eastern (*minor*; which is better called "Northern/Eastern") as a migrant through the state. Unfortunately, the number and geographical distribution of nighthawk specimens with which they had to work was limited, and much about the distributions of, particularly, the four breeding taxa remains to be discovered. Photographer–birders can assist in that effort. I have created a group on Flickr called "Colorado Nighthawks" (www.flickr.com/groups/coloradonighthawks/) which aims to do just that. I encourage birders to submit high-quality images to that group as a first step in enabling us to tackle this problem. While photos of nighthawks from anywhere in the state are needed, of particular interest and need are pictures of nighthawks from the West Slope, the San Luis Valley, and the southern plains. The pictures would also need to be geo-referenced in Flickr by plotting the precise locations at which individual photos were taken (some cameras and all smart phones—given suitable reception—provide such automatically). Photos of both perched and flying nighthawks are useful, with pictures of flying birds being particularly helpful in identifying Henry's.

Finally, I ask that birders salvage any nighthawks found dead that are still in good condition and get them to the Denver Museum of Nature and Science's collection (or other accredited collection); such specimens provide the underpinnings of virtually all that we know of the distribution of species of birds, particularly at the subspecies level. For each salvaged bird, please provide the details of when (date), how (e.g., road kill), and where (be specific) the bird was found, preferably written in waterproof ink (e.g., with a gel pen), on

a piece of paper that is kept with the bird. Put the bird (and the details) in as large a waterproof plastic bag as will permit the bird to fit without bending wing feathers and keep it frozen until it is delivered (hopefully sooner, rather than later) to the Museum.

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Fig. 1

Fig. 2

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