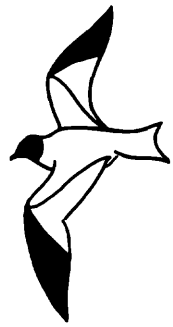


WESTERN BIRDS



Volume 21, Number 2, 1990

IDENTIFICATION OF WHITE AND BLACK-BACKED WAGTAILS IN ALTERNATE PLUMAGE

STEVE N. G. HOWELL, Point Reyes Observatory, 4990 Shoreline Highway,
Stinson Beach, California 94970.

Since the American Ornithologists' Union (1983) considered the White Wagtail (*Motacilla alba*) and Black-backed Wagtail (*M. lugens*) separate species, interest in their field identification in North America has grown. The White Wagtail breeds across Eurasia to western Alaska, while the Black-backed Wagtail breeds primarily in the Kamchatka Peninsula; the two are sympatric along the Bering Sea coast north of the Kamchatka Peninsula (Morlan 1981, A.O.U. 1983). The Siberian (and Alaskan) subspecies of the White Wagtail is *M. a. ocularis*, which, together with *lugens*, differs from other forms of White Wagtail in its black eyestripe; both forms winter in southeast Asia.

The prebasic molt (July to September), partial in juveniles, is mostly completed on the breeding grounds prior to migration. The prealternate molt, which includes the central rectrices and often some tertials, takes place (December to April) mostly on the winter grounds prior to northward migration. Apparently, *lugens* requires two years to attain definitive alternate plumage (Morlan 1981), but this may be variable (see below); *ocularis*, like most passerines, attains definitive plumage in one year.

Adults of *lugens* have mostly white wings, while adults of *ocularis* have mostly dark wings. However, first-year birds of both forms have mostly dark wings, and the juvenal and first basic plumages usually are indistinguishable in the field. Some confusion exists in the literature concerning distinctions between the Black-backed and White wagtails in alternate plumage, and most sources differ in their treatment of alternate-plumaged "adults," particularly females (Morlan 1981, Gibson 1983, National Geographic Society [NGS] 1983, 1987, Wild Bird Society of Japan [WBSJ] 1982). First-alternate-plumaged females of *lugens* and alternate-plumaged *ocularis* (especially females) can be at best difficult to distinguish in the field. Typically, alternate-plumaged males of *lugens* of all ages have much black on the back

WHITE AND BLACK-BACKED WAGTAILS

and usually are not a problem to identify. Here I discuss identification of alternate-plumaged Black-backed and White wagtails, especially the distinctions between *ocularis* and first-year *lugens*.

METHODS

I examined over 200 specimens, of both forms, at the American Museum of Natural History, New York (AMNH), the Museum of Comparative Zoology, Harvard University (MCZ), the Museum of Vertebrate Zoology, University of California, Berkeley, and the British Museum. In particular, I examined all 64 specimens of alternate-plumaged *lugens* collected between mid-April and June, and compared them with 62 alternate-plumaged *ocularis* collected from mid-April to June. Identification of specimens was based upon unequivocal plumage characters and/or locations within the known breeding ranges. Potentially misidentified birds were omitted from the analysis.

The criteria I examined were (1) chin (and upper throat) color, (2) back and rump color, (3) wing pattern, (4) tail pattern, and (5) bill size. Specimens were segregated by age on the basis of differential wear and pattern of flight feathers, and by sex on the basis of specimen labels and measurements (males average larger than females).

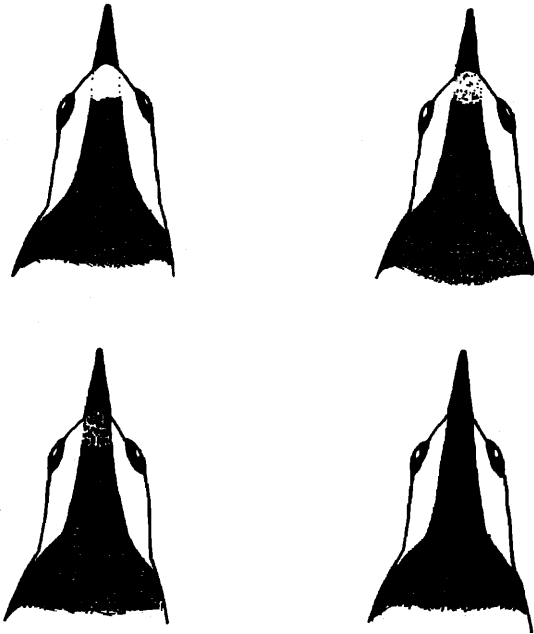


Figure 1. Chin/throat patterns of White and Black-backed wagtails in alternate plumage.

WHITE AND BLACK-BACKED WAGTAILS

RESULTS AND DISCUSSION

Chin Color

I assessed the chin color of each specimen by means of four categories: white, whitish, sooty, and black (Figure 1). Whitish chins were mostly white, variably flecked with black; sooty chins were mostly black, flecked with white.

Morlan (1981) stated that females of *lugens* "can be distinguished [from *ocularis*] by their white chin and upper throat" but then said that eight out of 24 females showed black on the chin. Gibson (1983) stated that the adult female *lugens* has "chin, throat, and back like both sexes of White Wagtail." The NGS (1983, 1987) shows a "breeding female" *lugens* with a white chin and upper throat, while WBSJ (1982) also shows a "female summer" *lugens* with a white chin and upper throat.

My results (Table 1) show that in *lugens* a white chin is more typical of adults than of immatures, ten (28.5%) of which had an all-black chin. Also, even a sooty chin can appear all-dark, and careful views are needed to see this feature clearly. Interestingly, three first-year specimens of *ocularis* had a whitish chin.

In most cases chin color is not diagnostic, though it may be useful in combination with other characters. It appears diagnostic only for those *lugens* that have a clean white chin, and for adult *ocularis* with a solidly black chin.

Back and Rump Color

I estimated the percentage of black on the back and rump (Table 1), and further divided the rump into upper and lower (Figure 2); typically, the upper tail-coverts of both forms are black.

Table 1 Chin, Back, and Rump Color of Black-backed and White Wagtails in Alternate Plumage

	n	Chin				Back (% black)	Upper Rump (% black)	Lower Rump (% black)
		black	sooty	whitish	white			
Black-backed								
1st-year ♂	23	7	5	2	9	15-100	0-100 (53) ^a	20-100 (90)
2nd-year ♂	10		3	3	4	20-100	10-100 (40)	75-100 (94)
Adult ♂	10		2	1	7	95-100	20-100 (77)	80-100 (97)
1st-year ♀	12	3	2	1	6	0-15	0-25 (8)	10-100 (60)
Adult ♀	9		1	2	6	0-80	0-60 (20)	20-100 (79)
White								
1st-year ♂	14	6	7	1	—	0	0	0-75 (40)
Adult ♂	31	24	7	—	—	0-2	0	5-90 (50)
1st-year ♀	10	3	5	2	—	0	0	0-50 (24)
Adult ♀	7	6	1	—	—	0	0	10-45 (21)

^a Mean value in parentheses.

WHITE AND BLACK-BACKED WAGTAILS

Morlan (1981) correctly pointed out that female *lugens* in summer can be gray-backed and "may resemble *ocularis* closely, particularly in the first year when the white in the wing is not fully developed." Gibson (1983) stated that the adult female *lugens* has a "back like both sexes of White Wagtail" and that females of the two are "probably inseperable." Only three females of *lugens* I examined (two first-year, one adult) had an all-gray back but six others had so little black, always on the scapulars, that it might be difficult to see in the field. All first-year males of *lugens* had at least some black mottling on the back that should be noticeable in the field. The lower rump of all specimens of *lugens* showed some black and often was solidly black. Only eight of these had an all-gray upper rump (one first-year male, five first-year females, two adult females).

The sexes of alternate-plumaged *ocularis* are similar. Both male and female have a gray back and upper rump, typically with the lower rump contrastingly darker gray and usually mottled black. The back of most specimens of *ocularis* is a brighter, clearer (or bluer) gray than the relatively dusky gray back of *lugens*, but some approach the dusky gray of *lugens*. Rarely, *ocularis* has slight black mottling on the back (Table 1), though this may indicate an intergrade with *lugens*.

The most visible of these characters is the clearer, brighter blue-gray back of *ocularis* versus the darker, duskier gray back of *lugens*, but judgment of this in the field probably requires prior experience with one or both forms. In addition, a solidly black lower rump and black mottling on the upper rump indicates *lugens*, while an all-gray upper rump and slight or no black mottling on the dark gray lower rump indicates *ocularis*. The rump pattern, however, may be difficult to see or judge in the field and should be used in conjunction with other characters.

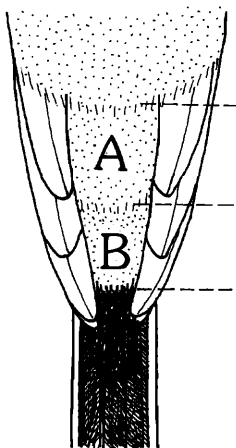


Figure 2. Distinction between upper rump (A) and lower rump (B) of White and Black-backed wagtails.

Wing Pattern

Birds in first alternate plumage retain their juvenile flight feathers, which, in both species, are similar: the remiges are dark brownish, narrowly edged whitish, and often become noticeably faded by spring. Although NGS (1987) stated that immature *lugens* has a whiter base to the flight feathers than does *ocularis*, this character is not readily evident in specimens with folded wings; consequently I did not evaluate it. It is worth noting, however, that photographs of hand-held first-year *lugens* show a distinct whitish stripe across the bases of the remiges (Bird Migration Research Center 1983); unfortunately, I have not found comparable pictures of *ocularis*.

Following the second prebasic molt, the remiges of *lugens* are mostly white and hence quite different from those of *ocularis* (see below). Several specimens of *lugens* (intergrades with *ocularis*?) had the outer two or three primaries mostly dark, as in *ocularis*. The primaries of adult male *lugens* are similar to the second-generation feathers but average more extensively white. In female *lugens*, individual variation makes the distinction between second-generation and older remiges difficult, and I was unable to distinguish these age classes with confidence, although Morlan (1981) stated that "adults differ from second-year birds in the greatly increased amount of white in the wing."

In *ocularis*, the remiges of the second and subsequent basic plumages are similar to the juvenal feathers but darker, with more contrasting white edges. By spring, however, they may fade and appear similar to first-year remiges.

Typically, at least one or two tertials are replaced during the first winter. Morlan (1981) stated that, after the first year, the edges of the tertials become more broadly white in *lugens* than in *ocularis*. I found that the thickness and pattern of white tertial edgings vary greatly within *lugens*, such that individual variation is as great as age-related or sex-related variation. Variation within *ocularis* was slight and the typical pattern was matched by several *lugens*, though all birds with mostly or entirely white outer webs to the tertials were male *lugens*. There appeared, however, to be a difference in the intensity of the white, and specimens of *lugens* with patterns similar to that of *ocularis* had brighter white tertial edgings.

Thus, the birds with mostly white remiges are *lugens*, but mostly dark wings characterize first-year *lugens* and all *ocularis*. Tertial pattern is unhelpful except for some males of *lugens*, which can be readily identified by other characters, e.g., extensive black on the back. The apparently brighter white of the tertial edgings of *lugens* is evident when series of specimens are compared but is unlikely to be useful in the field. The whiter base to the flight feathers of *lugens* may be apparent in the field.

Tail Pattern

Males of *lugens* of all ages rarely show some white mottling on the inner web of rectrix 4, i.e., the third from outermost rectrix. No specimen of *ocularis* showed this feature. More consistent, but of limited field use, was that 85% of *lugens* (of both sexes) had the basal portion of the fourth rectrix shaft white (Figure 3B), typically more extensive in males. However, four first-year males and one first-year female had the fourth rectrix shaft dark brown (Figure 3A). In *ocularis*, typically the shaft of rectrix 4 was dark (Figure

WHITE AND BLACK-BACKED WAGTAILS

3A); a few birds had a slight whitish streak along the shaft which was difficult to see in the hand and probably would be invisible in the field. The white shafts on most specimens of *lugens* were quite bright, clearly more so than the effect caused by light reflected from a shiny dark shaft.

Therefore, a bright white shaft to rectrix 4 indicates *lugens*, but birds with an all-dark shaft rectrix 4 could be either *lugens* or *ocularis*. Observing this character in the field would be difficult but not impossible, given patience and luck.

Bill Size

Morlan (1981) stated that "the culmen of *ocularis* averages slightly shorter: 10.1 mm to the nostril vs. an average of 10.3 mm for *lugens*" in the specimens he measured. I measured the bills of 86 specimens of *lugens* (47 male, 39 female) and 77 of *ocularis* (43 male, 34 female), from the anterior end of the nostril to the tip of the maxilla. Males of *lugens* measured 9.3-11.2 mm (mean 10.2), females of *lugens* 9.2-10.8 mm (10.0); males of *ocularis* measured 8.5-10.2 mm (9.4), females of *ocularis* 8.5-9.8 mm (9.2).

From these measurements, as well as simply standing back and looking at the specimens, *lugens* clearly averages larger-billed than *ocularis*, far more so than might be interpreted from Morlan's figures. Part of the visual difference, not evident from these measurements, is accounted for by the associated greater bill depth of *lugens*; one also should remember that size (i.e., volume) increases as a cube of increase in length. With experience, bill size might be useful in the field, as it is with *Empidonax* flycatchers, even though absolute length differences are not great.

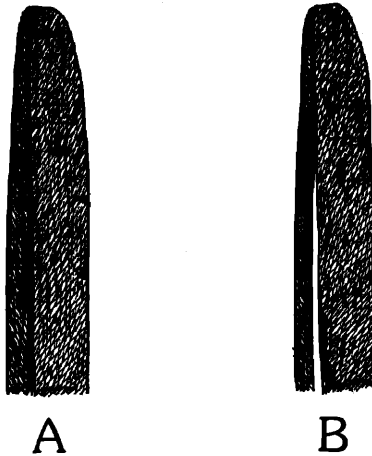


Figure 3. Patterns of rectrix 4 in White and Black-backed wagtails. A, *ocularis*, some *lugens*; B, most *lugens*.

WHITE AND BLACK-BACKED WAGTAILS

Identification Problems

Birds with an extensively black back and/or birds that appear extensively white-winged in flight are *lugens* (with the potential exception of partly albino *ocularis*). However, gray-backed birds with dark wings and a blackish throat are not necessarily *ocularis*.

Two females of *lugens* in first alternate plumage (AMNH specimens 29915 and 29917) could easily be taken for *ocularis*, particularly as their throats are sooty. Their rumps show very little black and, in the field, extremely good views would be needed to see the slight black mottling on the scapulars. AMNH 29915 was collected at "Bering Is." on 11 May 1882; AMNH 29917 was collected at "Petrop. (= Petropavlovsk), Kamchatka" on 15 May 1883. Both, therefore, are from the breeding range of *lugens*.

Figure 4 shows a lineup of *lugens* and *ocularis*, including the two problem birds. AMNH 29915 was identified as *lugens* by Leonhard Stejneger; later, Charles Vaurie amended the identification to *ocularis*, presumably on account of the black chin and throat. However, 29915 has a white shaft to rectrix 4, slight blackish mottling on the scapulars, and a bill length from nostril of 10.0 mm. In all these characters it agrees with *lugens*. The identification of 29917 (bill from nostril 9.8 mm) as *lugens* has not been questioned although it is very similar to 29915. Also, MCZ 276409, labeled *lugens* (bill from nostril 9.6 mm), is extremely similar to the two AMNH birds.

Regardless of their parentage, all three represent identification problems and observers should consider the possibility of intergrade *lugens* × *ocularis* occurring on the west coast of North America.

CONCLUSIONS

The distinctions between alternate-plumaged Black-backed and White wagtails are confused in the literature. The first alternate plumage of female *lugens* and the alternate plumage of *ocularis* (especially females) are at best difficult to distinguish in the field. Even with a bird in the hand, one may be unable to rule out the possibility of an intergrade *lugens* × *ocularis*. Adult females of *lugens* in alternate plumage typically have a white chin and mostly white wings, striking in flight. In alternate plumage, males of *lugens* of all ages have an at least partly black back.

A gray-backed, black-throated, dark-winged wagtail presents the greatest problem. However, careful consideration of the following points should allow the majority of such birds to be identified.

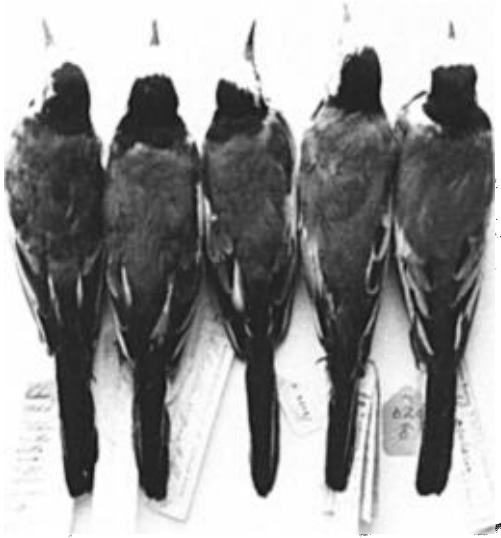
An extensively white chin indicates *lugens*, but in their first year many examples of *lugens*, like *ocularis*, have a black throat.

Some specimens of *lugens* have a gray back like *ocularis*, but most show at least slight black mottling, especially on the scapulars. Typically, *ocularis* has a cleaner, brighter blue-gray back than the darker, dusky gray back of *lugens*, but a few have a dusky gray back.

Black mottling on the upper rump and a solidly black lower rump indicate *lugens*. A gray upper rump and relatively little black mottling on a darker gray lower rump indicate *ocularis*. Examples of *ocularis* with the most black on the lower rump are adult males, which usually have a brighter, bluer gray back than does female *lugens*.

WHITE AND BLACK-BACKED WAGTAILS

A



B



Figure 4. Five specimens in AMNH. Left to right: 56951 (first-year female *lugens*), 29917 (first-year female *lugens*), 29915 (first-year female *lugens*), 77331 (adult female *ocularis*), 77325 (adult male *ocularis*). A, dorsal view. Note extensively black rump and relatively dusky gray back of *lugens*. B, ventral view. Note black and sooty throat, respectively, of 29915 and 29917.

Photos by Steve N. G. Howell

WHITE AND BLACK-BACKED WAGTAILS

The wing pattern of first-year *lugens* is similar to that of *ocularis*, although *lugens* often shows whiter tertial edgings; this difference is subjective, however, and there is overlap in pattern. A whitish base to the flight feathers of *lugens* may be apparent in flying birds but was not evident from specimens.

Many specimens of *lugens* show a contrasting white basal half or more to the shaft of rectrix 4. On some, especially first-year birds, however, the shaft can be dark brown as on *ocularis*.

The bill of *lugens* averages larger than that of *ocularis* but judgment of this requires experience with one or both forms.

ACKNOWLEDGMENTS

I thank the curators and personnel at the American Museum of Natural History, the Museum of Vertebrate Zoology, the Museum of Comparative Zoology, and the British Museum who allowed me access to the skins in their care. I also thank Joe Morlan, Peter Pyle, Philip Unitt, and Sophie Webb for helpful comments on earlier drafts of this paper, and Joe Morlan for drawing my attention to the Japanese Bird-Banding Manual. This is contribution number 470 of Point Reyes Bird Observatory.

LITERATURE CITED

- American Ornithologists' Union. 1983. Checklist of North American Birds. 6th ed. Am. Ornithol. Union, Washington, D.C.
- Bird Migration Research Center. 1983. Bird-banding Manual, Identification Guide to Japanese Birds: 7-11. Yamashima Inst. for Ornithology, Shibuya, Tokyo, Japan.
- Gibson, D. D. 1983. White Wagtail, in (J. Farrand Jr., ed.), vol. 3, p. 76. The Audubon Society Master Guide to Birding, Knopf, New York.
- Morlan, J. 1981. Status and identification of forms of White Wagtail in western North America. *Continental Birdlife* 2:37-50.
- National Geographic Society. 1983. Field Guide to the Birds of North America. 1st ed. Natl. Geogr. Soc., Washington, D.C.
- National Geographic Society. 1987. Field Guide to the Birds of North America. 2nd ed. Natl. Geogr. Soc., Washington, D.C.
- Wild Bird Society of Japan. 1982. A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo, Japan.

Accepted 8 August 1990



Photo by Alan Hopkins

White Wagtail