

CONTINENTAL BIRDLIFE

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Snap Judgment 7

On a winter birding trip in the South, visiting a local botanical garden, you see a small bird fly out from a Date Palm ahead of you. It pauses for a moment in the open, allowing an unobstructed view. What is the bird?

The answer, a discussion of the identification, and the name of the photographer will appear in the April 1981 issue of *Continental Birdlife*.





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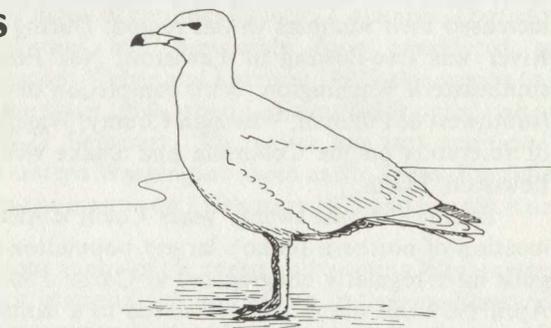
Cover Photograph: Although the mood of this quiet and misty scene is vaguely Oriental, the locale is Mexican. This Green Kingfisher *Chloroceryle americana* was photographed by Kenneth V. Rosenberg on the Rio Magdalena, Sonora, in November 1980. For notes on winter birds in Sonora, see the article by Scott B. Terrill beginning on p. 11 in this issue.

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The *Larus* Gulls of the Pacific Northwest's Interior, with Taxonomic Comments on Several Forms (Part I)

JOHN W. WEBER



Editors' note: The peripheral effects of Civilization have done some odd things to the distribution of gulls. We know that, in a general way, but the local and regional details of the phenomenon often go unreported. Gull distribution in the interior of the Pacific Northwest has undergone some marked changes recently, but fortunately the changes have not gone undocumented: John W. Weber, of Pullman, Washington, has taken a special interest in the gulls of his region and has been monitoring their status for several years. In this paper he presents his findings, documenting changes in both gull distribution and in human understanding of it.

Anyone who looks at gulls is bound to wonder occasionally about their complex taxonomy. John Weber has done more than wonder: he has researched the factual and theoretical background for current gull classification, and formulated his own theories. Although some of Weber's conclusions may be at odds with the prevailing opinions on the subject, his ideas certainly merit consideration in the evolving field of gull taxonomy.

SINCE publication of the most recent distributional account of Idaho birds (Burleigh 1972), noteworthy information on the status of gulls in Idaho has accumulated in the form of sight, photographic, and specimen records. This paper presents details of records of gull species new to Idaho and discusses recent distributional changes for some of the known species of gulls from Idaho. The state's first specimen records of Glaucous *Larus hyperboreus*, Iceland *L. glaucoides*, and Thayer's *L. thayeri* gulls are described, and several new records from eastern Washington (east of the Cascades) are presented. In addition, taxonomic comments on the *glaucoides-kumlieni-thayeri* and *glaucescens-occidentalis-argentatus* complexes are included. Data are also given for mantle and wing tip coloration for most of the medium- to large-sized *Larus* gulls known to occur in the Pacific Northwest's interior.

Because the last period of Burleigh's field work in Idaho was from 1947 to 1958, his book does not include some of the state's recent changes in avifaunal distribution. Of the many environmental changes that have occurred since 1958 in Idaho and adjacent areas, two factors probably account for the changes in both abundance and distribution of some species of gulls in this region: man-made reservoirs that satisfy habitat requirements, and nearby garbage dumps which provide an abundant and easily obtainable source of food. The increased number of impoundments in eastern Washington over the last five decades has increased irrigated farmland acreage, providing additional foraging habitat (in warm weather months) for California *L. californicus* and Ring-billed *L. delawarensis* gulls, both of which have apparently increased their numbers in this region. During Burleigh's stay in Idaho, the Snake River was free-flowing at Lewiston, Nez Perce County, and through much of southeastern Washington. With completion of construction of Lower Granite Dam (southwest of Pullman, Whitman County, Washington) on the Snake in 1975, a chain of reservoirs on the Columbia and Snake rivers now links the Pacific Ocean to Lewiston, Idaho.

During the past twenty years Coeur d'Alene, Kootenai County, has been the location of northern Idaho's largest population of wintering gulls. As many as 500 gulls have regularly congregated at Coeur d'Alene's garbage dump each winter. In April 1979 this dump was converted to a sanitary landfill, a site where garbage is deposited and soon covered with soil, reducing the quantity of food available to gulls. As a consequence, fewer gulls might henceforth winter at nearby Coeur d'Alene Lake. Before Walla Walla, Walla Walla County, Washington, substituted a sanitary landfill for a dump in 1978, hundreds of wintering gulls from the Columbia River near Wallula, Walla Walla County, made daily foraging flights (round trip distance, 90km) to the Walla Walla dump. After the dump's conversion to a landfill, the winter population of gulls at Walla Walla plummeted; the writer saw no gulls at this landfill during the 1978-79 winter. As more garbage dumps are replaced by sanitary landfills, it will be interesting to note possible changes in gull distribution over a larger region.

Unless otherwise stated, all of the specimens referred to herein are deposited in Washington State University's Conner Museum (WSUCM).

GLAUCOUS GULL *Larus hyperboreus*

LaFave (1965) recorded this species in Kootenai County, Idaho, and states: "Three immatures were noted at Coeur d'Alene Lake and on the Spokane River at Coeur d'Alene, Idaho, on the 22 February 1963 whereupon photographs were taken at close range by J. Acton. Another immature was noted at Coeur d'Alene on the 16 February 1964." Burleigh (1972) cites LaFave's records, and on the basis of these records says the following of *hyperboreus*: "Apparently of casual occurrence in the northern part of the state . . . It is rather surprising . . . that it is of more than accidental occurrence in Idaho, and it will be of interest to see if in future years it again appears in the state during the winter months."

The writer has three records of this species from Coeur d'Alene, Kootenai County: two first-year immatures (both seen with I.O. Buss; one collected by the writer) on 28 December 1977; one adult and one first-year immature on 31 December 1977; one first-year immature on 26 December 1978. The Glaucous Gull collected on 28 December 1977 is Idaho's first specimen record (WSUCM No. 78-33) of

hyperboreus. This specimen, a male, has the following measurements: wing, 461.5mm; tail, 188.0mm; exposed culmen, 60.5mm; depth of bill at angle of gonys, 20.5mm; tarsus, 76.0mm; weight, 1898.0g. Dimensions compare closely with those listed by Dwight (1925) for male *hyperboreus*. Plumage is pale, mottled brown; the sharply bicolored bill has a pale base and a blackish tip; the tail is mottled.

In addition, the writer observed three first-year Glaucous Gulls near the confluence of the Snake and Clearwater rivers at Lewiston, Nez Perce County, Idaho, and in adjacent Washington (Asotin and Whitman counties) from 21 January to 5 March 1978 (photographs by L. McVicker and the writer on file at WSUCM). This record represents the southernmost occurrence of this species in Idaho and is the first from Washington's southeasternmost block of counties (Asotin, Columbia, Garfield, and Whitman). Although *hyperboreus* had previously been considered as hypothetical in this region of Washington (Weber and Larrison 1977), this species has been known from eastern Washington since 1960, when LaFave (1965) noted two at Spokane, Spokane County, on 25-27 February. The writer has two additional sightings of the Glaucous Gull from eastern Washington (both at the Pasco, Franklin County, garbage dump): one first-year immature on 3 February 1979 and one adult on 28 December 1979.

Jewett *et al.* (1953) list *hyperboreus* as one of the rarest gulls visiting Washington (then known only from coastal waters) in spring, fall, and winter. In Oregon, Bertrand and Scott (1973) list this species as a rare winter visitor along the coast. Recent records suggest that *hyperboreus* is more numerous along coastal areas than previously known. Mattocks and Hunn (1980) report that usually about 25 are now sighted in winter in the northern Pacific Coast region (western regions of Oregon, Washington, and British Columbia). In the interior of the Northwest, however, the records presented herein indicate that the Glaucous Gull now occurs as a scarce but probably regular winter visitor to at least northern Idaho and eastern Washington.

ICELAND GULL *Larus glaucoides*

Discussion of specimen

Burleigh does not include *glaucoides* in Idaho's avifauna, and neither the A.O.U. check-list (1957) nor Godfrey (1966) lists this species occurring west of the Rocky Mountains in North America. Overlooked by Burleigh and Godfrey is the WSUCM specimen (No. 66-129) of a first-year immature female *L. glaucoides* (= *L. leucopterus*) collected by L.D. LaFave at Coeur d'Alene, Kootenai County, on 22 February 1965, noted by Rogers (1965) in Audubon Field Notes, and tentatively identified as *L. g. kumlieni* by the writer. No mention of the disposition or the details of this specimen has heretofore appeared in the literature.

To the best of the writer's knowledge, No. 66-129 is the first specimen of *L. glaucoides* from west of the Rocky Mountains in North America. Purported specimens of the Iceland Gull from California and Washington have been reidentified as other species (Grinnell and Miller 1944; Devillers *et al.* 1971; Mattocks *et al.* 1976). Gabrielson and Lincoln (1959) list two specimen records of the Iceland Gull from Alaska, but their description of these gulls as having "slightly larger" bills than *L. glaucoides* (= *L. leucopterus*) suggests that the specimens are possibly Thayer's Gulls *L. thayeri*. Since the Iceland Gull is not listed in the latest checklist of Alaska birds (Kessel and Gibson 1978), the two purported specimens of *glaucoides* from Alaska

have presumably been reidentified as other species.

Because immature *glaucoides* are sometimes difficult to distinguish from immature *thayeri* (Dwight 1925; Macpherson 1961; Oberholser and Kincaid 1974), the measurements of the LaFave specimen are shown in Table 1 in juxtaposition with those given by Dwight (1925) for Thayer's and Iceland gulls. It should be noted that Dwight did not consider *kumlieni* a race of the Iceland Gull but treated it as a hybrid between *L. thayeri* (= *L. a. thayeri*) and *L. g. glaucoides* (= *L. leucopterus*). Therefore, his measurements and plumage descriptions for *L. leucopterus* pertain only to those gulls he recognized as the eastern race (*L. g. glaucoides*, which breeds in Greenland) of the Iceland Gull. Table 2 gives measurements of No. 66-129 alongside those listed by Smith (1966) for *L. g. kumlieni* and *L. thayeri*. Table 1 shows that the measurements of LaFave's specimen are probably too small for it to be *thayeri*; instead, No. 66-129 appears to be a small Iceland Gull by Dwight's data. Table 2 indicates that the measurements of the LaFave specimen are nearly identical to the average measurements listed by Smith for *L. g. kumlieni*. More significantly, all of the measurements (except wing length) of No. 66-129 fall within Smith's extreme measurements for *kumlieni*, while only one (bill depth at posterior nares) is within Smith's extremes for *thayeri*. Therefore, measurements of this specimen favor its identification as an Iceland Gull and reasonably preclude Thayer's Gull.

Plumage of the LaFave specimen is buff-colored and only slightly darker than the aforementioned *hyperboreus* specimen (No. 78-33), and the bill, except for slight fading at the base, is entirely dark (blackish). The primaries and mottled tail of No. 66-129 more closely resemble those shown by Dwight (1925) for first-year *kumlieni* than those he shows for first-year nominate *glaucoides*. The brownish primaries, slightly darker than the general tone of the wing coverts, of LaFave's specimen lack the subapical spots found in many immature *L. glaucoides*; however, not all immature Iceland Gulls have subapical spots (Macpherson 1961; Andrie, pers. comm.).

TABLE 1. Measurements (mm) of WSUCM No. 66-129 and those from Dwight (1925). No. of specimens, n. Mean values are in parentheses. Weight of No. 66-129 is 885.0g.

	WSUCM No. 66-129	Female Iceland Gull n = 6	Female Thayer's Gull n = 12
Exposed culmen	40.0	39-44 (41.3)	43-56 (48.4)
Depth of bill at angle of gonys	14.7	14-16.5 (15.2)	15.5-17.5 (16.5)
Tarsus	51.5	52-59 (55.8)	58-65 (60.3)
Wing	366.0	378-403 (391.5)	380-405 (395.0)
Tail	145.0	156-165 (160.3)	145-165 (156.8)

TABLE 2. Measurements (mm) of WSUCM No. 66-129 and those from Smith (1966).
 Mean values are in parentheses. No. of specimens, n.

	WSUCM No. 66-129	Females from e. coast of Baffin Is. (<i>hyperboreus</i> , <i>thayeri</i> , <i>kumlieni</i> , and <i>argentatus</i> sympatric).		Females from s.w. Baffin Is. (<i>hyperboreus</i> , <i>kumlieni</i> , and <i>argentatus</i> sympatric).	Females from Frozen Strait (<i>hyperboreus</i> , <i>thayeri</i> , and <i>argentatus</i> sympatric).
		<i>kumlieni</i> n = 341	<i>thayeri</i> n = 187	<i>kumlieni</i> n = 103	<i>thayeri</i> n = 139
Flattened wing	371.0	377-401 (387.3)	380-407 (392.6)	383-407 (392.2)	380-407 (393.9)
Tarsus	51.5	47.3-57.4 (51.65)	53.6-61.0 (58.20)	48.0-57.0 (53.00)	53.2-63.0 (58.07)
Exposed culmen	40.0	34.1-40.1 (37.61)	44.0-51.0 (46.77)	38.0-44.0 (40.77)	42.0-52.7 (46.22)
Bill: anterior nares to tip	19.5	18.0-21.0 (19.50)	21.7-24.8 (23.35)	19.3-22.5 (20.51)	21.0-26.0 (22.97)
Bill: depth at posterior nares	14.2	13.6-15.1 (14.21)	13.9-17.5 (15.02)	13.9-15.3 (14.41)	13.7-17.5 (15.00)

Thus, the preponderance of evidence, in the writer's opinion, suggested the identification of No. 66-129 as *L. g. kumlieni*. This specimen was subsequently examined by R. F. Andrle at the Buffalo Museum of Science, where he compared it with known skins of nominate *glaucoides*, *kumlieni*, and *thayeri*. Andrle found the measurements of No. 66-129 to be smaller than mean measurements given in the literature for *thayeri*. Moreover, he found the primary shading (inner vane of first primary) of No. 66-129 to fall within the color range given by Macpherson (1961) for *kumlieni* but outside Macpherson's range for *thayeri*. Based upon the evidence available to him, Andrle says he "can only conclude that it [No. 66-129] is probably an Iceland Gull." Since he is unaware of constant characters that can be relied upon to distinguish between immature nominate *glaucoides* and immature *kumlieni* (an observation shared by Rand 1942), Andrle did not make a subspecific determination. The writer defers to Andrle's judgment on this matter and believes that the identity of LaFave's specimen should be designated simply as *L. glaucoides*, rather than *L. g. kumlieni*.

Taxonomic discussion of the *glaucoides-kumlieni-thayeri* complex

Because recent investigations at Home Bay, Baffin Island, have revealed hybridization between *thayeri* and *kumlieni* (W.E. Godfrey, unpublished data; *vide* Andrle), Andrle considered the possibility of No. 66-129 being a hybrid; however, he thinks this possibility is "perhaps remote" since the color of this specimen is similar to that of some Iceland Gull birds of the year taken from or near colonies of *kumlieni* along southwestern Baffin Island, where there are no *thayeri* breeding. Aside from its bearing on the identification of the LaFave specimen, hybridization of these two forms poses interesting questions on the taxonomy of the *glaucoides-kumlieni-thayeri* complex. Are these three forms merely races of one polytypic species? Is gene flow between *kumlieni* and *thayeri* sufficient to maintain a plastic species embracing all three forms?

Before addressing the foregoing questions, a synopsis of the taxonomic history of *kumlieni* and *thayeri* is in order. The form *kumlieni* has been variously treated as: (a) *L. glaucescens* (Kumlien 1879); (b) a full species (Brewster 1883, Taverner 1933); (c) a hybrid of *L. glaucoides* and *L. argentatus* (Dwight 1925); (d) a race of *L. glaucoides* (Rand 1942, A.O.U. check-list 1957). Macpherson (1961) indicates that Thayer's Gull was known to early explorers and was considered by some to be a variety of the "Silvery," or Iceland, Gull. Although W. S. Brooks (1915) described Thayer's Gull as a new species, Dwight (1917, 1925) considered it to be a race (*L. a. thayeri*) of *L. argentatus*, the taxonomic status accorded this form by A.O.U. from 1931 (A.O.U. check-list 1931) until 1973 (Eisenmann 1973); thereafter, A.O.U. treated Thayer's Gull as a distinct species, *L. thayeri*. However, the artist-naturalist Allan Brooks (1937) considered Thayer's Gull specifically distinct from *argentatus* at an earlier date.

Salomonsen (1950) and Macpherson (1961) considered *L. glaucoides* and *L. thayeri* conspecific. Macpherson recognized significant similarities in the *glaucoides-kumlieni-thayeri* complex: preference for cliff-nesting; no divergence in orbital ring coloration; general appearance and proportions. Macpherson, unaware of sympatry in *kumlieni* and *thayeri*, believed that geographical isolation was not an intrinsic isolating mechanism. On the other hand, Smith (1966) established that *kumlieni* and *thayeri* are sympatric on the eastern coast of Baffin Island but was not cognizant of hybridization of these two forms; he believed certain isolating mechanisms effectively prevented interbreeding and therefore treated *kumlieni* and *thayeri* as different species. Smith also observed distinct similarities between these two forms: coincident peaks of reproductive activity where *kumlieni* and *thayeri* are sympatric; randomly mixed nests of *kumlieni* and

thayeri on cliffs where the two forms nest together. In this latter regard, as Smith noted, *kumlieni* and *thayeri* behave as one species. Had Smith known of hybridization of the two forms, perhaps he would have treated them differently.

Smith (1966) considers several factors that reduce the chance of hybridization among four *Larus* gulls (*hyperboreus*, *glaucoides*, *argentatus*, and *thayeri*) that are sympatric in various combinations in the Canadian arctic. He lists three major factors, or isolating mechanisms: temporal pattern of breeding cycle; location of nest site; use of morphological characters in species discrimination. The morphological characters include pigmentation of eye, eye-ring, and wing tips; however, Smith believes that sexual isolation depends almost entirely upon color of eye and eye-ring. He found reproductive isolation complete among the four species. Between *hyperboreus* and *argentatus*, the above mechanisms are understandably effective. As noted by Smith, the peak of sexual activity for *hyperboreus* precedes that of *argentatus* by about two weeks. For nesting, *hyperboreus* uses cliffs, while *argentatus* uses tundra valleys and flat, marshy areas. Contrasting coloration of both orbital ring (*hyperboreus*, yellow; *argentatus*, orange) and wing tip (*hyperboreus*, white; *argentatus*, black) serves to separate these species during breeding (both forms have yellow irides). Hence, the isolating mechanisms discussed by Smith for these two species cogently reduce potential interbreeding. But it should also be noted that these two forms are now known to hybridize in Iceland (Ingolfsson 1970).

However, in the case of *kumlieni* and *thayeri*, two of the three major isolating mechanisms are inoperative since both the breeding cycles and nesting sites of these two forms are the same. Moreover, both forms have a reddish-purple orbital ring. Irises in *kumlieni* vary from completely light to completely dark, while those of *thayeri* are predominately dark. In addition, wing tip darkness of the two forms occasionally overlaps (Smith, p. 64). Where *kumlieni* and *thayeri* use the same nesting sites and occur in randomly mixed nests, what isolating mechanism is effective in reducing hybridization? Smith (p. 96) says the observational and experimental evidence "suggest" assortative mating among *kumlieni* sympatric with *thayeri*; that is, among *kumlieni*, light-eyed females mate with light-eyed males, and dark-eyed females with dark-eyed males. He also states that neither female *kumlieni* iris-morph mates with dark-eyed *thayeri* and that *kumlieni* allopatric with *thayeri* (about 13km southeast of the overlap zone; Smith, p. 69) mate randomly with respect to iris type. The writer wonders how often *thayeri* breach this 13km zone to possibly hybridize with those *kumlieni* showing no preferences as to eye coloration. Smith (p. 69) also says ". . . the assortative mating interpretation [of the data] was reached through hindsight and not via hypothesis and controlled experiment . . ." Smith's choice of words indicates that assortative mating as a barrier to hybridization of these forms has yet to be proved. If so, his treatment of *kumlieni* and *thayeri* as different species is open to question.

The relationship between Iceland and Thayer's gulls can be better understood by hypotheses on the origin and evolution of these forms. Smith (1966) proposes that both *glaucoides* and *thayeri* evolved from isolated populations of *argentatus* during the Pleistocene, while Macpherson (1961) theorizes that these forms differentiated from isolated populations of a nearctic immigrant during the same period; Macpherson also suggests that *L. glaucescens* is probably the nearest relative of *L. glaucooides*. The writer believes that *hyperboreus*, *glaucoides*, *thayeri*, *argentatus*, and certain other *Larus* gulls (*glaucescens*, *schistisagus*, *occidentalis*, *fuscus*, *californicus*, *marinus*, and possibly *delawarensis* and *canus*) are cladogenetic descendants of an unknown *Larus* form from the late Pliocene or early Pleistocene. Geographic separation of ancestral forms during successive glacial and interglacial stages of the Pleistocene resulted in various combinations of isolated populations; among the forms comprising these populations, there were probably varying degrees of hybridity. Intermittent gene flow during past eras accounts for the similarities shared by today's species, and present-day interbreeding among a number of these forms attests to their evolutionary plasticity. As an alternative

to the hypotheses offered by Macpherson and Smith, the writer suggests that *glaucoides* and *thayeri* were conspecific, but distinct from *argentatus*, before the last Pleistocene glacial (Wisconsin stage). With the advent of the ice movements of the Wisconsin, the conspecific *glaucoides-thayeri* form separated into two isolated populations, evolving into two incipient species, Thayer's Gull in the western arctic and Iceland Gull in the eastern arctic. Before speciation was complete, the glaciers retreated, bringing the two forms in contact along eastern Baffin Island. Interbreeding produced an intermediate form, *kumlieni*. The remarkable similarities existent in the *glaucoides-kumlieni-thayeri* complex can be more plausibly explained, perhaps, by the writer's conjecture on the origin of these forms.

Although Dwight's (1925) taxonomic designation of these three forms is different from that of today, he came close to treating them as one species. Dwight considered Thayer's Gull a race (*L. a. thayeri*) of the Herring Gull, and as mentioned earlier, he did not recognize *kumlieni* as a subspecies of the Iceland Gull. *L. glaucoides* (= *L. leucopterus*), as treated by Dwight, included only the eastern race (*L. g. glaucoides*) of the Iceland Gull. Perplexed by *kumlieni*, Dwight devotes considerable discussion to this form, including the following (p. 195): "Surprising as it may seem, a large series shows that with increase of the white element whatever it is, as indicated by paler and paler primaries and larger areas of white, there is complete intergradation, first between *Larus argentatus thayeri* and the bird now known as '*Larus kumlieni*,' and then between '*Larus kumlieni*' and *Larus leucopterus*. There is no escaping from this fact, explain it as we may. As no new character appears we are obliged to discard mutation as an explanation and we are, therefore, forced to the conclusion that '*kumlieni*' is some sort of hybrid, unless we are prepared to consider *Larus argentatus* and *Larus leucopterus* a single species because completely connected by intergrades in size, in color and in pattern. Nobody is likely to accept this latter conclusion so foreign to generally accepted ideas of species and therefore hybridity is the most plausible explanation of '*kumlieni*.'" If Dwight were making a determination of the relationship among *thayeri*, *kumlieni*, and nominate *glaucoides* in light of our present knowledge of these forms and of speciation in general, the writer believes he would have regarded them as conspecific.

Unfortunately, our knowledge of these arctic gulls is lacunary, and more work must be done, both on the gulls' breeding grounds and in the laboratory, before the relationship among these forms is clarified. In particular, Smith's observation of assortative mating among *kumlieni* sympatric with *thayeri* requires further study. The degree of interbreeding between *kumlieni* and *thayeri* has yet to be determined, but extensive hybridization would clearly be a strong argument for conspecificity. While limited hybridization is insufficient evidence for conspecificity, the taxonomic expedient of treating the *glaucoides-kumlieni-thayeri* complex as conspecific would not only explain the behavioral similarities among these forms but would also reconcile the puzzling problem of the considerable variation and apparent overlap in coloration of both the primary patterns and irides of *kumlieni* and *thayeri*. The generally larger size of *thayeri*, the most northern breeding race of this polytypic species, could be accounted for by Bergmann's rule.

Possible other records of the Iceland Gull from the Pacific Northwest and adjacent regions

Idaho: a second-year immature seen and photographed by T.H. Rogers and others on 29-30 January 1977 and 5 February 1977 at Coeur d'Alene, Kootenai County (Rogers 1977); a first-year immature seen by I.O. Buss and the writer on 28 December 1977 at Coeur d'Alene.

Washington: individual immature gulls noted in the Spokane area (presumably

Spokane County) from 18 January to 27 February 1960 and on 14-17 March 1961 (LaFave 1965); one immature seen at Banks Lake, Grant County, by W.A. Hall on 5 April 1967 (Rogers 1967).

Montana: one immature studied and photographed by P.D. Skaar and others at Canyon Ferry Dam near Helena on 2-25 February 1978 (Skaar pers. comm.; Rogers 1978).

The above sight records, including the one by the writer, are dubious because of the similarity of some very light-colored immature *thayeri* to immature *glaucoides*. For the same reason, separation of these species in immature plumage on the basis of photographs is uncertain. Any sight records of adult *glaucoides* from the Pacific Northwest should also be treated with caution, for they can possibly be attributed to leucistic or albinistic gulls of other species. The writer has observed numerous *thayeri* birds of the year along coastal Washington during the past several winters, but none has been as light-colored as LaFave's specimen (No. 66-129) of *glaucoides* or the immature gull seen by I.O. Buss and the writer at Coeur d'Alene on 28 December 1977. There is a good possibility, then, that one or more of the above-listed sight or photographic records is of *glaucoides*, but at present, there is no evidence to indicate that the Iceland Gull is anything more than accidental in this region.

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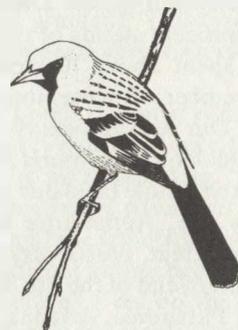
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To be continued.

Notes on the Winter Avifauna of Two Riparian Sites in Northern Sonora, Mexico

SCOTT B. TERRILL

Explorations just south of the border yield some intriguing comparisons to the winter birdlife of the southwestern U.S.: some continuums, some contrasts



FOR MANY YEARS the region of the border between Mexico and the United States has been relatively well known in terms of bird species distribution. This is especially true in southeastern Arizona, southernmost Texas and southwestern California.

In the first two cases, the ecological communities of these areas are unique in the United States. This offers the birder an opportunity to observe what are essentially tropical and sub-tropical species within U.S. boundaries. The border area in southwestern California (i.e., San Diego — Imperial Beach area) is heavily birded due to a relatively high probability of encountering “vagrant” transients, a somewhat different situation.

Unfortunately, most of this border area coverage has been unilateral. The reasons for this are straightforward: bird listers are concerned with recording species within the standardized A.O.U. Check-list area; observers in general prefer to observe these birds and natural communities in the socially comfortable confines of their native country; birders headed south of the border are usually eager to reach more southerly latitudes where the species represent a greater difference from those of the U.S.; and finally, most interested persons would predict that the border areas of Mexico would support avifaunas quite similar to those just north of the border.

During the winter of 1979-1980, Ken Rosenberg, Gary Rosenberg and I undertook some field work in northern Sonora. Our primary objective was to continue a field study on several migratory insectivores. We were intentionally selecting areas which were as similar as possible (in a general sense) to several study sites in central Arizona.

Two Sonoran sites are under discussion here. One is along the Rio Sonora a few kilometers downstream from Ures, Sonora, at the small farming community of San Rafael. The area we covered is about 3km along the river by approximately .5km on either side. This area includes narrow strips of riparian habitat along the river itself (which was at the time about 6m - 10m wide and no more than .75m deep). This riparian zone supported primarily cottonwoods *Populus* and willows *Salix*, with a dense understory of vines, cane and perennial shrubs. Several irrigation canals branched off the river, and these were bordered by thick annuals providing a tremendous seed crop. Slower areas of the canals widened and harbored cattails,

rushes and dense perennial thickets. On one side of the river there was a dense bosque of mesquite *Prosopis*. An estimated 80% - 85% of the site was agriculture (corn, alfalfa, pasture). A row of mature cottonwoods and willows with a dense understory of tall, dormant annuals divided the fields for about .25km. The area is surrounded largely by arid, rocky hillsides with a sparse thorn-scrub community. This is one of two localized cottonwood-willow areas along the Rio Sonora today, although upstream there are magnificent stands of riparian vegetation in which mesquite is the dominant species. We spent about 70 hours of observation time at the Ures site on the dates of 30 November - 2 December 1979, and 14, 15 and 26 January 1980.

Our second locality is much closer to the United States. This area is along the Rio Magdalena near Imuris at San Ignacio, which is about 70km or 43 miles (as the Streak-backed Oriole flies) due south of Nogales, as compared with 225km (140 miles) for the Ures site. Agriculture occupied most of this area as well. The river flow was intermittent, mostly dry with the exception of a spring rising in the riverbed at the southern end of the site. The cottonwood-willow forests reminded us of Sonoita Creek near Patagonia, Arizona, but the trees here were fewer and the patches of mature trees more scattered. All the trees were leafed out (mesquite included), the tree-tobacco *Nicotiana* was in bloom, and there was a tremendous seed crop from tall, dense weeds surrounding the agriculture and in the understory of the cottonwood-willow forest and mesquite hedgerows.

At this site we made direct counts of the birds encountered in an area approximately 1km X 1km over a three-hour period (0800-1100 MST) on 16 January 1980. Returning on 27 January we again censused this area; we also kept a separate tally of birds seen in an additional strip of river habitat .5km X .25km in area.

We were overwhelmed by the representation of species and high numbers of individuals at the Imuris site. To give the reader some idea of the intensity of the birding here: on 27 January, Gary Rosenberg and I counted 85 species and more than 3000 individuals. These numbers include no waterfowl and only a single species of shorebird. The area supported remarkable numbers of passerines.

Relative to our knowledge of bird distribution north of the border, we did note a "gradient" phenomenon in the distribution of some species. That is, the numbers or absence of certain species matched more or less closely the pattern we would have predicted, based upon an extrapolation from distribution patterns in southern Arizona. On the other hand, with other species we encountered an unexpected dramatic departure from predictions based on winter birding in the southwestern United States. As an isolated example, one small flock at the Imuris site included three tanagers of two species (Hepatic *Piranga flava* and Summer *P. rubra*), three species of orioles (Hooded *Icterus cucullatus*, Streak-backed *I. sclateri*, and Baltimore *I. g. galbula* — all adult males), and two adult male Black-headed Grosbeaks *Pheucticus melanocephalus*. Such a winter flock is unheard of forty miles to the north in Arizona. The species list below will speak for itself.

Thus, observations of certain birds represented a deviation from what we would have predicted based on past observations outside of the areas. However, this may reflect only a relative lack of coverage of northern Sonora. Whether or not these individuals do indeed fit a more predictable gradient pattern, rather than isolated occurrences, will be established as there is greater coverage of these areas in the future. Our understanding of bird distribution in Arizona will be augmented and clarified by increased ornithological exploration in northern Sonora.

How well our observations fit into any pattern cannot even be guessed at this

point. Many variables are involved, and the variables and their interactions can change rapidly from year to year. For example, the Imuris area of the Rio Magdalena was the first area south of the border which had full green foliage on the cottonwoods, willows, and mesquites. There was a sharp transition from the brown, barren woodland just a few miles north on the same river. There is a downward elevational slope from Nogales to Hermosillo, and for some reason in 1979-1980 the Imuris area was the first green point on this elevational and latitudinal gradient. This type of "oasis" condition could vary greatly from winter to winter. In more severe winters, the green oasis effect might be lacking in the Imuris area.

For the birder we can state that these sites offered just about the most exciting temperate-zone winter birding we've ever had, at a remarkably short distance from Arizona. Exploring new areas such as this can prove exciting and rewarding.

For the ecologist, such areas in Sonora offer a nice comparative situation. The riparian habitat in the Southwest is almost completely gone, and the majority of what is left is in a condition greatly altered by man. We found magnificent untouched stands of mesquite trees (many exceeding forty feet in height) north of Ures on the Rio Sonora, a condition which used to exist in Arizona but has now completely vanished. We found cottonwood-willow-sycamore associations on the Rio Magdalena with complete regeneration, represented by trees of all ages: again, a very rare situation in the United States' arid southwest. Studying these areas could increase our knowledge of these systems in a more natural state. Finally, these areas are void of Salt Cedar! This introduced species is rampant in similar riparian systems in the southwestern U.S.

The following annotated list presents the high count (per visit) for each species at each site. Included are a number of species for which there are very few Sonoran records. One need only examine the species and the numbers of individuals recorded within these small areas to understand why we could only call the birding spectacular. Many of these species and/or numbers would have been boldfaced on any southwestern U.S. "Christmas bird count."

This species list follows the taxonomical order and English names of "A Field Guide to Mexican Birds" by Peterson and Chalif, 1973. In Column I are the high counts for species in the Ures area, in Column II are the highs for the Imuris area. Following the lists are selected species accounts. The reader should keep in mind the small size and the limited habitat of these areas while reviewing the lists.

Great Egret	1	0	American Kestrel	13	0
Green Heron	1	0	Prairie Falcon	1	0
Mallard	22	0	Gambel's Quail	0	54
Green-winged Teal	4	0	Elegant Quail	32	0
Cinnamon Teal	3	0	Killdeer	14	8
Turkey Vulture	47	36	Greater Yellowlegs	4	0
Black Vulture	41	154	Spotted Sandpiper	4	0
Marsh Hawk	2	1	Common Snipe	1	0
Sharp-shinned Hawk	1	1	Mourning Dove	446	135
Cooper's Hawk	1	1	White-winged Dove	120	38
Zone-tailed Hawk	0	1	Inca Dove	0	1
Red-tailed Hawk	3	2	Common Ground-Dove	3	1
Ferruginous Hawk	1	0	Greater Roadrunner	2	2

Barn Owl	1	0	Blue-gray Gnatcatcher	2	3
Common Screech-Owl	1	1	Black-tailed Gnatcatcher	4	3
Great Horned Owl	1	1	Ruby-crowned Kinglet	9	88
Northern Pygmy-Owl	0	1	Water Pipit	37	10
Long-eared Owl	0	1	Loggerhead Shrike	7	4
<i>Asio (flammeus?)</i>	1	0	Starling	80	48
White-throated Swift	0	45	Hutton's Vireo	0	1
Broad-billed Hummingbird	0	1	Bell's Vireo	1	0
Anna's Hummingbird	0	7	Solitary Vireo:		
Costa's Hummingbird	0	6	<i>cassinii</i> form	1	1
Belted Kingfisher	1	1	<i>plumbeus</i> form	3	2
Green Kingfisher	1	0	Orange-crowned Warbler	5	30
"Red-shafted" Flicker	4	0	Yellow-rumped Warbler:		
"Gilded" Flicker	2	2	<i>auduboni</i> form	38	125
Gila Woodpecker	23	98	<i>coronata</i> form	1	0
<i>Sphyrapicus "nuchalis"</i>	1	0	Black-throated Gray Warbler	1	10
Ladder-backed Woodpecker	5	16	Townsend's Warbler	0	1
Eastern Phoebe	1	0	Common Yellowthroat	12	4
Black Phoebe	8	9	Wilson's Warbler	6	1
Say's Phoebe	4	5	House Sparrow	0	37
Vermilion Flycatcher	10	0	Brown-headed Cowbird	80	0
Cassin's Kingbird	5	0	Great-tailed Grackle	60	41
Ash-throated Flycatcher	0	2	Brewer's Blackbird	250	8
<i>Myiarchus (nuttingi?)</i>	2	0	Hooded Oriole	0	1
Olivaceous Flycatcher	1	0	Northern Oriole:		
Coues' Flycatcher	0	1	Baltimore form	0	1
Least Flycatcher	1	0	Bullock's form	1	0
Hammond's Flycatcher	1	1	Streak-backed Oriole	16	2
Dusky Flycatcher	1	1	Red-winged Blackbird	500	95
Gray Flycatcher	6	4	Yellow-headed Blackbird	1	1
Western Flycatcher	1	3	Eastern Meadowlark	10	5
Horned Lark	18	0	Western Meadowlark	50	12
Common Raven	60	15	Summer Tanager	1	1
White-necked Raven	12	16	Hepatic Tanager	0	2
Scrub Jay	1	0	Western Tanager	0	1
Bridled Titmouse	0	4	Cardinal	16	31
Verdin	10	43	Pyrrhuloxia	28	36
White-breasted Nuthatch	0	5	Black-headed Grosbeak	2	2
Brown Creeper	0	1	Blue Grosbeak	3	1
Long-billed Marsh Wren	14	1	Indigo Bunting	2	0
Cactus Wren	12	36	Lazuli Bunting	42	0
Bewick's Wren	8	20	Varied Bunting	1	0
Northern House-Wren	47	15	Green-tailed Towhee	13	42
Brown Thrasher	0	1	Rufous-sided Towhee	2	1
Bendire's Thrasher	0	6	Brown Towhee	16	37
Curve-billed Thrasher	6	51	Lark Bunting	8	1
Crissal Thrasher	2	3	Savannah Sparrow	14	15
Northern Mockingbird	5	49	Grasshopper Sparrow	2	0
Hermit Thrush	2	2	Vesper Sparrow	35	27

Lark Sparrow	58	19	Song Sparrow	21	12
Rufous-winged Sparrow	6	1	White-crowned Sparrow:	280	1315
Cassin's Sparrow	12	0	light-lored type	(30)	(483)
Chipping Sparrow	5	45	dark-lored type	(250)	(56)
Clay-colored Sparrow	4	0	White-throated Sparrow	0	2
Brewer's Sparrow	180	65	Dark-eyed Junco	1	1
Field-Worthen's type	1	0	House Finch	50	170
Black-chinned Sparrow	1	0	Pine Siskin	0	2
Fox Sparrow	1	0	American Goldfinch	6	5
Lincoln's Sparrow	43	18	Lesser Goldfinch	12	160
Swamp Sparrow	13	0	Lawrence's Goldfinch	2	2

SPECIES ACCOUNTS

ZONE-TAILED HAWK

Buteo albonotatus

One was at the Imuris site 27 January 1980. Mid-winter records in Arizona are very rare; this record is of interest because of the site's proximity to Arizona.

NORTHERN PYGMY-OWL

Glaucidium gnoma

One seen and heard 27 January 1980 at the Imuris site represents a lowland riparian record for this essentially montane species. Forests seemingly more suitable for the species are visible on a nearby range of mountains northeast of this location.

BROAD-BILLED HUMMINGBIRD

Cynanthus latirostris

One was at the Imuris site on 16 and 27 January 1980. This species is occasionally recorded in central and southeastern Arizona in winter, primarily at feeders. The presence of one at this site was probably related to the fact that this was the northernmost area in the Magdalena Valley where we found Indian Tree Tobacco *Nicotiana glauca* in bloom during the winter.

EASTERN PHOEBE

Sayornis phoebe

One at the Ures site 30 November - 2 December 1979 represents one of the few sight records for Sonora. The species is a rare but regular winter resident in Arizona, and there are winter sight records for Sinaloa as well.

NUTTING'S FLYCATCHER

Myiarchus nuttingi

This *Myiarchus* breeds in the area, but we know of no specific winter records. Two individuals were observed in the mesquites at the Ures site 30 November - 2 December 1979, and another was seen in thorn scrub near Moctezuma, Sonora, 15 January 1980. None of these birds was calling, but plumage characters suggested these

birds were *nuttingi*. The dark stripe along the outer edge of each unworn tail feather had a straight inner edge, not curving inward to cover the entire tip of the rectrix as in Ash-throated Flycatcher *M. cinerascens*. The uniform brown of the cap, auriculars and nape extended down to the bill and the sides of the neck, without the brown and gray contrast that is present on the forehead and hind-neck of the Ash-throated. These tentative winter sightings at the northern edge of Nutting's breeding distribution suggest the species may be a permanent resident throughout its range.

OLIVACEOUS FLYCATCHER

Myiarchus tuberculifer

A winter record at this northerly location is noteworthy. This species withdraws in winter from the northern fringe of its breeding distribution, and winter records for the U.S. are virtually nonexistent. This individual was calling when discovered at the Ures site on our first visit (30 Nov. - 2 Dec. 1979). It was not seen on subsequent trips, suggesting this bird was a late transient.

COUES' FLYCATCHER

Contopus pertinax

One was at the Imuris site on 16 and 27 January 1980. Wintering regularly from southernmost Sonora southward, this species is probably a sparse winter resident in northern Sonora. In Arizona there are a few individuals at scattered locations during most winters.

LEAST FLYCATCHER

Empidonax minimus

One studied at the Ures site on 14 January 1980 was identified by the following combination of characters, proven in recent years to be reliable for field identification: A small *Empidonax*, appearing quite grayish with a white throat. Pure white wingbars and tertial edgings, contrasting sharply with black wings. Bill short, but wider at the base than that of nearby Hammond's Flycatcher *E. hammondi*; lower mandible yellowish-pink. Eying relatively wide and pure white, with a touch of white in the lores. Breast lightly washed with grayish and rest of underparts whitish. Tail narrow, proportionately long for a Hammond's but shorter than that of Dusky Flycatcher *E. oberholseri*, with a whitish outer web to outermost rectrices. Call note a sharp "hwhit."

The Least Flycatcher was not wholly unexpected here. It winters regularly in western Mexico at least from Sinaloa southward, and there is a March specimen from southernmost Sonora (Miller *et al.* 1957). The breeding range of the species extends as far west as the Pacific Coast in northern British Columbia (Godfrey 1966). J. P. Hubbard has established that Least Flycatchers migrate regularly through eastern New Mexico, and recent work in California has shown that it occurs there annually in small numbers, primarily in fall.

BROWN THRASHER

Toxostoma rufum

One was seen at the Imuris site on 16 and 27 January 1980, a satisfactory span of dates to indicate this was a wintering bird. In Arizona the species is a rare but regular transient (somewhat more irregular as a winter resident). According to Russell and Lamm (1978), there is but one previous record for Sonora: one at Guaymas in

December 1968.

BELL'S VIREO

Vireo bellii

One was seen at the Ures site 1-2 December 1979. We have heard of other recent winter records in mesquite thickets of north-central Sonora; this probably represents the northern fringe of the species' winter range.

HOODED ORIOLE

Icterus cucullatus

On 27 January 1980 at Imuris an adult male was seen in company with two adult male Black-headed Grosbeaks, a Summer Tanager, and two Hepatic Tanagers. This species is rare in Arizona in winter.

"BALTIMORE" ORIOLE

Icterus g. galbula

An adult male was studied at the Imuris site on 27 January 1980. To our knowledge there is only one previous record in Sonora: one taken south of Nogales 12 October 1954 (Phillips *et al.* 1964). This form winters regularly in small numbers farther south in western Mexico (Nayarit) and in very small numbers in coastal California.

STREAK-BACKED ORIOLE

Icterus sclateri

This oriole was a common riparian species at Ures all winter, and at Imuris an adult male was seen 16 January and a subadult male 27 January 1980. Therefore, despite the rarity of the species in Arizona, it is apparently a fairly common winter resident not far to the south. Most individuals observed were males, so perhaps the dispersal patterns of the sexes differ.

TANAGERS

Piranga

All three of the species recorded were noteworthy for this latitude in winter. Two Hepatic Tanagers *P. flava*, a male and female together at Imuris 16 and 27 January 1980, were especially interesting.

INDIGO BUNTING

Passerina cyanea

Two at Ures 30 November - 2 December 1979 would represent first winter records for this area of Mexico. This species has been expanding its summer range in the southwestern U.S. recently, with some Arizona river systems supporting large populations. There are recent sight records of singing birds in western Sonora as well (Russell and Lamm 1978).

VARIED BUNTING

Passerina versicolor

A female-plumaged bird at the Ures site 1 December 1979 was rather far north.

SPIZELLA, SPECIES

On 30 November 1979 at the Ures site, Ken Rosenberg observed what was either a Field Sparrow *S. pusilla* or Worthen's Sparrow *S. wortheni*. Because of the extreme similarity of these two species Rosenberg did not make a positive identification, but he felt it was probably a Field Sparrow. Neither species has been recorded in Sonora.

FOX SPARROW

Passerella iliaca

An individual seen by Gary Rosenberg and the author on 14 January 1980 in dense vegetation at the Ures site was identified as a member of the southwestern group of subspecies (*P. i. schistacea* or *P. i. olivacea* in the sense of Phillips, in Phillips *et al.* 1964). Russell and Lamm (1978) list only one record for the Fox Sparrow in Sonora (Sonoyta, December 1968), although an earlier record had been published (22 December 1954 at Santa Cruz — Phillips *et al.* 1964).

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Short Notes

Tool Use by a Mountain Chickadee

A Mountain Chickadee *Parus gambeli* in a flock of eight was observed using a very unusual foraging method that I have interpreted as tool use. The incident occurred on 17 July 1980 at 0920 MST in Ponderosa woods of the Dry Lake Hills, just north of Flagstaff, Coconino County, Arizona.

The chickadee was foraging about seven meters up on a dead, barkless tree. It began very excitedly probing with its bill a vertical crack about one cm wide and about one half meter long. It pecked at the side of the crack and pulled off a splinter about five cm long, having a grip on the splinter about two cm from one end. It then pushed the long end of the splinter back into the crack and probed several times. It moved down the crack again and probed with the splinter once more before flying to an adjacent tree, still carrying the splinter in its bill. It held the short end of the splinter with its foot and pulled it through its bill until it had the other end in its bill. It then made several chewing movements on the splinter before discarding it and flying off. I had seen nothing impaled on the end of the splinter before the chickadee pulled it into its bill.

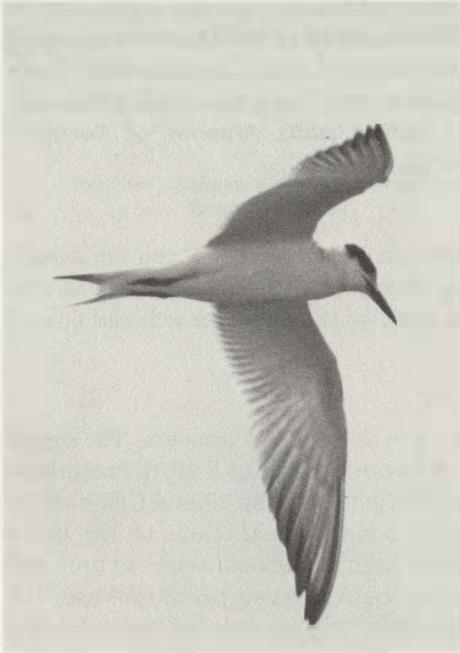
Mountain Chickadees frequently excavate in decayed wood, usually flipping removed chips over their shoulder. In over 100 hours observation of this species, this was the first time it was seen to use one of the removed pieces as a tool. This incident is reminiscent of tool use by the Galapagos finches described by Millikan and Bowman (*Living Bird* 6:23-41), which use cactus spines and sticks to extract insect larvae. To my knowledge, no other example of tool use has been reported for a Mountain Chickadee or for any other North American parid. — Philip Gaddis, *Museum of Northern Arizona, Route 4, Box 720, Flagstaff, AZ 86001.*

Editor's note: Tool-using by birds is uncommon. The subject has been extensively reviewed by Jeffery Boswall (1977, *Avicultural Magazine* 83: 88-97, 146-159, 220-228; 1978, *op. cit.* 84: 162-166). I asked him to comment on the above record, and he sent the following reply. — K.K.

To define tool-use is much more difficult than at first sight appears. The recent volume by Benjamin B. Beck (*Animal Tool Behaviour*, Garland STPM Press, New York, 1980) makes this very clear. In the case of Philip Gaddis' Mountain Chickadee it would be difficult to credit any interpretation other than tool-use to the bird's observed behaviour. However the bird was not seen to succeed with its tool and therefore, *pro tem*, the instance can really only be regarded as apparent tool-use. The fact that in over 100 h of observations on this species this was the first time that tool

behaviour has been observed might mean that tool behaviour is not a regular behavioural trait among these chickadees. Further, the fact that the species in any case works with wood to excavate its nest hole means that opportunities to employ a splinter as an implement must have occurred many, many times. And yet the species (like, apparently, the vast majority of the world's birds) has not become a tool user. This in turn suggests that only in exceptional circumstances is the use of an external object a more parsimonious path for natural selection than the evolution of body structures or other behavioural traits to solve the same problem. Thus when we come across a lone observation of a species apparently using a tool, we are tempted to ask is the explanation that — to word it teleologically — it is an experiment that doesn't pay off?

I used to think that the fragmentary nature of much of the data on tool using by wild birds was due to inadequately-systematic observation, and no doubt this *may* to some extent be the explanation. I now think that the observers may have been witnessing some "errors" in a process of trial and error learning. Two other individual instances of parids (two Blue Tits *Parus caeruleus*) using a piece of vegetation as a poker or prod are given in my 1977 paper (p. 150), as are *single* instances of individual birds of six other passerine species using an elongate object as a probe. Of these three were seen to succeed. But even success with a "new" method of food extraction need not mean that the behaviour pattern will be "taken up" as part of a species' behavioural repertoire. It may still be a less economic method of foraging. It must be added that there is of course one bird species well known regularly to employ a probe, and at least two others that are almost certainly regular in their use of such an instrument. — Jeffery Boswall, Birdswell, Wraxall, Bristol BS19 1JZ, England.



The challenge in the preceding issue featured this tern, photographed at a southern beach in autumn. Can you identify it to species?

Answer to Snap Judgment 6

KENN KAUFMAN

Terns always seem to sort themselves out quite neatly on the field guide plates, where they are all laid out for comparison, but a single individual in the field or in a photograph can be much more difficult. Terns afield are often mere flickering white shapes over the marsh, refusing to sit still for scrutiny. Terns in photographs are all too frequently caught in positions that fail to show off the "field guide" characteristics. The bird in our "Snap Judgment" photo is an example of the latter.

To begin narrowing down the choice: the bird is clearly one of the medium-sized white terns. Size is impossible to judge directly, of course, in a photo of a lone bird against the sky, but we can judge proportions. Our mystery bird does not appear long-bodied, long-necked, large-headed, or heavy-chested enough to be one of the large species; it is not dark enough to be one of the black terns *Chlidonias*, nor is it sufficiently petite in proportions to be a Least Tern *Sterna albifrons*. Some other peripheral possibilities such as Sooty *S. fuscata*, Bridled *S. anaethetus*, and Aleutian *S. aleutica* terns can be ruled out by the pale coloration of the bird in the photograph.

Thus, the field is narrowed to a group consisting of Common *S. hirundo*, Arctic *S. paradisaea*, Forster's *S. forsteri* and Roseate *S. dougallii* terns. The Gull-billed Tern *Gelochelidon nilotica* might also merit consideration, but we would expect the Gull-billed to appear heavier-bodied, rounder-headed, and much larger-billed than the tern in the photograph.

Some of the "field guide characters" are inoperative here. The bill simply appears dark (not surprisingly in an autumn tern), and it is difficult to be certain of the head pattern because of the angle of view and the strong sunlight reflecting off the bird's dorsal surface. However, we can clearly see the pattern of the *underside of the primaries*, and this quickly rules out two of the four prime suspects. The Arctic Tern has a very distinctive underwing pattern: the primaries are quite translucent (thus appearing very white from below in good light) with black tips which create a narrow, sharply defined black trailing edge to the outer wing, unlike the pictured bird. The Roseate Tern is also eliminated, since it would lack even the ill-defined dark trailing edge to the wing shown by the tern in the photograph. The remaining candidates, Common and Forster's terns, can both show a broad trailing edge to the outer primaries, blackish in Common and pale gray in Forster's. The tern in the quiz photo seems to lean toward Forster's in this regard, but the effects of light may be tricking us here; we need to consult other characters for confirmation.

My next instinct is to look at the shape of the head and bill. Bird guides do not mention this point (and, admittedly, it should not be used as a diagnostic character), but Common and Forster's terns typically differ in the profile of the forehead and bill. Forster's has a flat crown, a gently rounded forehead, and a rather thick bill; the forehead of the Common slopes up to a rounded peak just behind the mid-point of the crown, and its bill is thinner and more tapered than that of Forster's. The difference is subtle (and subject to variation as the bird raises or sleeks its head feathers) but it provides a helpful clue, and in this case it suggests the tern in the photo is a Forster's.

Thus we have two votes in favor of Forster's, but not quite enough evidence to secure the final verdict; a diagnostic character is needed. The *tail pattern* is worth considering here. A Common Tern at any age should show a dark outer web to the outermost rectrix, appearing as a narrow dark edge to the tail; and we can clearly see that there is no such dark edging on the near side of the tail. This evidence emboldens us to believe that what we are seeing of a suggestive head pattern (specifically, white across the nape) is genuine and not merely an artifact of lighting. The bird is definitely a **Forster's Tern**. It was photographed at Puerto Penasco, Sonora, in late autumn 1979 by Dr. Robert A. Witzeman.

Abridged Too Far . . . ?

An objective evaluation of the new Peterson Field Guide

KENN KAUFMAN

A Field Guide to the Birds (Fourth Edition) — Roger Tory Peterson. 1980. Boston, Massachusetts: Houghton Mifflin Company. 384 pp., 136 plates (most in color), line drawings, 390 range maps by Virginia Marie Peterson. \$15.00 hardbound, \$9.95 paperbound.

Publisher's address:
Houghton Mifflin Co.
2 Park Street
Boston, MA 02107

AFTER NEARLY FIFTY YEARS of influence, *A Field Guide to the Birds* is no longer a mere book; it is a phenomenon. Its author, Roger Tory Peterson, is a larger-than-life figure, the world's most honored naturalist. The appearance of the all-new 1980 edition of the Field Guide was more than a mere publishing event, it was a media event, the culmination of a wave of anticipation carefully nurtured by the publishers. To be appropriate, then, this book review must take into account more than just the book.

How can anyone criticize R. T. Peterson and his Field Guide? The man is incredibly talented: an artist, photographer, author, public speaker; a world traveler, a strong voice for conservation. His field guides have pointed out the way for hundreds of thousands of birdwatchers and wildlife enthusiasts (including this reviewer), bringing them their first inklings of environmental awareness, creating an army of concerned citizens who speak up in defense of birds and bird habitat. This effect has been so overwhelmingly beneficial that it is hardly worth mentioning the inaccuracies and incompleteness in earlier editions which led birders to misidentify some of the birds they saw.

The preceding statement is, I suppose, an underlying thesis of much of what follows. I have to admit that the new 1980 edition is simply beautiful. It presents all the diversity, beauty and excitement of birds in such an attractive and compact format that it is bound to create a new surge of interest in birding, bound to swell the ranks of those who would protect wildlife and habitat. I would like to see a copy of this book in every household in eastern North America. I would also like the reader to remember I said that, because from here on I am going to be saying some harsh and critical things about the new Peterson. My criticisms henceforth are made only from the viewpoint of a person who seriously wants to identify the birds he sees in the field.

From the appearance of the first edition in 1934, Peterson's *Field Guide to the Birds* dominated the field virtually unchallenged for more than three decades. In 1966 its first serious rival appeared: *The Golden Guide, Birds of North America*, by Robbins, Bruun,

Zim and Singer. This new guide rapidly gained popularity (and a substantial portion of the market), primarily because of its very convenient format. However, most expert birders felt that *Birds of North America* represented a step backwards from the Peterson guides; they charged (correctly) that its illustrations were less accurate and its brief text was more limited.

Now the new Peterson is out. Compared to its own previous editions, it has a more convenient format — but the illustrations are less accurate and the text is more limited. Is this progress?

Granted, the author of a field guide suffers from two opposing pressures. The user of the guide (even the rank beginner) must be enabled to identify birds *quickly*, and this requires that things be kept compact and simple. The user should also be enabled to identify birds *accurately*, and this requires more detail, more discussion of complexities. Keeping these divergent goals in mind, the author must attain a middle ground between the ideals of convenience and completeness. The new Peterson achieves a massive advance in convenience for field use, but it is no improvement at all over previous editions in terms of leading to *correct identifications*.

The truly unfortunate thing is that it *could* have been a far better field identification guide *without* major changes in its convenient format . . . if only a plethora of errors had been edited out. If only a multitude of useful field marks had been written (and painted) in. If only the book reflected *current* knowledge of field identification, instead of being thirty years out of date for most species. If only the expert birders of North America had looked at the book before publication (instead of looking through it, groaning with disappointment and disbelief, *after* publication). What were the publishers (and the author) thinking of? A bird identification guide is by intention a scientific reference book; who would want to publish a work of reference without asking knowledgeable reviewers to check the accuracy of its contents?

I think it would be wrong to charge that the “go-it-alone” policy implicit in the new edition was due entirely to arrogance on Peterson’s part. It is quite possible he doesn’t realize that much has happened in the field (aside from the appearance of a rival guide) since the time of his previous edition. But in fact, remarkable advances have taken place. A number of observers, disturbed by the questionable accuracy of older sight records, have undertaken serious and intensive research into the fine points of field identification. They have debunked previously accepted field characters, discovered a host of new ones, unraveled the intricacies of the most complex groups. Their findings have been passed around by word of mouth at a hundred birding hot spots, published in a score of local newsletters and journals, taught to beginners in “bird classes” in a dozen cities. But Roger Tory Peterson — isolated at the pinnacle of the birding world, traveling the globe but rarely birding any more in North America — missed out. His new field guide reflects hardly a glimmer of the new sophistication in identification skills.

Open the 1980 edition at any page, and you step back into the past. Loons? Look at Common and Arctic loons (*Gavia immer*, *G. arctica*): you are told to distinguish them by relative thickness of the bill (a difficult thing to judge, and subject to variation); the diagnostic differences in face and neck patterns, which are easy to see and which instantly separate the two, are not shown. Cormorants? The obvious differences in flight silhouette between Olivaceous and Double-crested cormorants (*Phalacrocorax olivaceus*, *P. auritus*) are neither illustrated nor mentioned, and the difference in gular pouch shape is badly bungled. Ducks? No indication that Blue-winged and Cinnamon teal females (*Anas discors*, *A. cyanoptera*) might be distinguishable afield. Jaegers? No new information. Gulls? Thayer’s Gull *Larus thayeri* is evaded, not treated, with a head-only illustration of an adult and no mention of subadult stages; the first-winter Glaucous Gull *L. hyperboreus* is shown with a wildly atypical bill; and this time Peterson got the tail-pattern right for the immature Franklin’s Gull *L. pipixcan* but wrong on the immature Laughing Gull *L. atricilla*, perpetuating the confusion between these two species. Shorebirds?

Experts now agree that many shorebird species have three very distinct plumages (breeding, adult winter, and juvenal), but Peterson continues to illustrate only two, leaving the observer to puzzle out all those individuals that don't "look like the picture in the book" for obvious reasons. Flycatchers? The color plate of *Empidonax* might as well have been omitted, since the few differences it shows are not the real ones. Shrikes? The consistent differences between the two are obscured or confused. Waterthrushes? The outdated treatment will perpetuate confusion between Louisianas *Seiurus motacilla* and whitish Northern *S. noveboracensis*, since the diagnostic characters of the Louisiana are neither pictured nor described. Other warblers? Today's criteria for separating fall Blackpoll *Dendroica striata*, Bay-breasted *D. castanea*, and Pine *D. pinus* warblers go unmentioned; the observer relying on Peterson will inevitably misidentify some of these. Blackbirds? The treatment of Brewer's Blackbird *Euphagus cyanocephalus* is unlikely to alleviate confusion between it and Rusty Blackbird *E. carolinus*. Winter longspurs? The new guide continues to suggest that a white shoulder patch is indicative of Smith's Longspur *Calcarius pictus*, although Chestnut-collared Longspurs *C. ornatus* may show this as well; the distinctions between Chestnut-collared and McCown's *C. mccowni* are also blurred here.

And so on. These few examples (chosen from among many) are sufficient to prove my point: that Peterson seems generally unaware of recent developments in field identification, the discipline which is supposedly the primary subject of this book. Setting aside this fact, let us look at the components that make up a field guide. What about the illustrations, an all-important consideration in a bird identification book: isn't it good news that we have a brand new set of color plates of all the eastern birds? Well, yes and no.

My automatic first reaction, even before I had studied the plates, was to compare them mentally to those of the previous (1947) edition; how do they stack up? The new plates, with fewer individual birds per page, are much more detailed. Skillful use of light and shadow in most cases creates a more three-dimensional effect, adding realism. A visitor from another planet would certainly deem the new plates superior... even a visitor from another continent might agree, at least until the visitor had had a chance to look critically at our living birds, in the field. And then the disenchantment would set in. Peterson may have become more skillful at painting feathers, but it seems he has lost some of his ability at drawing birds.

Peterson must have been quite a fieldman in the 1940s; without frequent exposure to the birds, he could not have portrayed their *personalities* so well in the 1947 edition. Although there were a few drawings that didn't ring true, the majority captured the "gestalt," the undefinable impressions of the living bird. The slim thrushes looked shy and spooky, startled to be so starkly laid out on the page; the Ground Dove *Columbina passerina* took flight with a staccato burst of its short rounded wings; the Great Gray Owl *Strix nebulosa* looked down with stately detachment; the warblers seemed ready to dart away.

I wish I could say the same for the illustrations in the new edition. Unfortunately, while some species are depicted better in the new guide, many more are done worse, for a net loss. In the 1980 edition, the thrushes are positively *fat*: look at the rotund Veery *Catharus fuscescens* on p. 223. The shapes, especially head shapes, of all the large flycatchers on pages 195 and 197 are badly portrayed. Many of the warblers are curiously elongated: look at the female Canada Warbler *Wilsonia canadensis* on p. 235, or the long-bodied, short-tailed female Yellow Warbler *Dendroica petechia* on p. 239. Several of the owl portraits are embarrassingly awkward. The implication is that Roger has not gone out to take a close look at most of these birds for a long time.

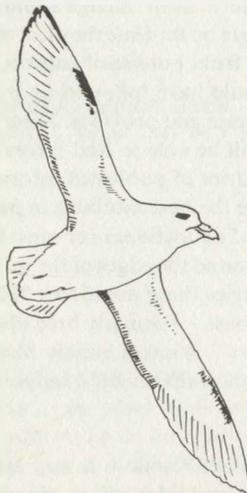
How important is this? Shape, of course, is not an integral element in "The Peterson System," which depends upon a few key details of pattern indicated by arrows. But once the birder has moved beyond the stage of having to laboriously check "field marks" on every individual seen, characteristic details of silhouette and posture will play an

increasingly important role in his sight identifications. Some obscurely marked immature Cape May Warblers *Dendroica tigrina* and Yellow-rumped Warblers *D. coronata*, for example, may be superficially very similar in pattern, but the experienced birder will never confuse them because the Cape May's short-tailed, small-headed look and finely pointed bill give it a completely different "gestalt." An expert scanning a mudflat, scoping a marsh or walking a field will instantly identify the majority of the standing shorebirds, swimming ducks or flushing sparrows by a mass of small impressions, of which the most important is silhouette. The diagnostic value of shapes cannot be denied. Although a field guide for beginners should not *emphasize* nuances in silhouette, it should at least *illustrate* them correctly so as to accelerate the beginner's learning process.

More disturbing is the poor treatment of shapes in those cases for which silhouette is not just a major factor in the "gestalt" but actually an important identifying character. The eagles and the *Buteo* hawks, for example, variable in plumage but diagnostic in silhouette, are much more distinctive in the field than they are in these field guide plates. The bill shape of the adult Little Blue Heron *Florida caerulea* is so badly drawn that it will increase, not solve, the problems beginners may have in distinguishing this species from Reddish Egret *Dichromanassa rufescens*. The characteristic shape and wing position of the Northern Fulmar *Fulmarus glacialis* make up its most useful "field mark," but observers will have to work that out for themselves, because Peterson's illustration makes the bird look like a bastardized gull.

I have mixed feelings about the six plates of "Accidentals." It was certainly an error in judgment to include tiny pictures of such confusing birds as Greater Golden Plover *Pluvialis apricaria*, Great Snipe *Gallinago media*, and winter Mongolian Plover *Charadrius mongolus*, with *no* discussion of their field marks; no doubt this will lead to many dubious reports by overeager beginners. On the other hand, the active birder will appreciate having illustrations of such rare-but-regular birds as White-winged Black Tern *Chlidonias leucopterus* and Stripe-headed Tanager *Spindalis zena*.

The arrangement of the new guide has the text for each species on the page facing its illustration, a format similar to that which has proven so popular in the Golden Guide *Birds of North America*. A result has been to compress the text material for most species. Rarely is there enough space for detailed discussion of identification problems (although, as outlined earlier, lack of information was probably a stronger limiting factor than lack of space). One thing I like about the text is the way Peterson succeeds, even within severe



space restrictions, in making the descriptions lively and interesting. Thus, the Whistling Swan *Olor columbianus* is "often heard long before the ribbonlike flock can be spotted;" the Starling *Sturnus vulgaris* is "a gregarious, garrulous, short-tailed 'blackbird' with a meadowlark shape." These flashes of informality should make the book (and, by extension, birdwatching itself) more agreeable to beginners.

Experts will notice a few odd quirks in the text. The worst, perhaps, is on p. 300, a suggestion that Gray-rumped Swift *Chaetura cinereiventris* may be conspecific with Antillean Palm Swift *Tachornis phoenicobia*: Peterson must have had the latter confused with Lesser Antillean Swift *Chaetura martinica*, for which the statement would have been more reasonable. A list of "Accidentals from the West" on p. 304 is badly flawed, and should have been reviewed by authorities from each state and province. A brief perusal is enough to reveal omissions from this list: Zone-tailed Hawk *Buteo albonotatus* from Nova Scotia, Rufous-necked Stint *Calidris ruficollis* from Ohio, Sage Thrasher *Oreoscoptes montanus* from Maryland, etc. Relegating Bronzed Cowbird *Molothrus aeneus* to this list was clearly wrong; the species has occurred so often in the Gulf states and Florida as to merit full treatment in the main body of the book.

Although the rearrangement of plates and text does give the new guide an appearance quite different from that of previous editions, the single greatest change is the use of range maps to delineate species distributions. Inclusion of the maps will inevitably bring to mind comparisons to the competing Golden Guide, *Birds of North America* (but the reader should recall that Peterson first used range maps in his *Field Guide to the Birds of Britain and Europe* twelve years before the Golden Guide appeared). Positioning of the maps in the Golden Guide was dictated by the user's convenience: for quickest possible reference the maps were placed adjacent to the text on the page facing the illustration, thus reducing the size of both map and text to the barest minimum. However, Peterson opted (wisely, in my opinion) for completeness over convenience: the text facing the illustrations includes one-line range descriptions, but the maps themselves are placed in a separate section and done at large scale (only six to the page), allowing for much detail. The new Mrs. Peterson, Virginia Marie, helped with the research and then drew all the maps, producing a series that is very attractive.

The maps are not as accurate or up-to-date as they could have been. You may easily confirm this fact for yourself, and without even looking at the maps: simply turn to the Introduction, to pages 8-9, where Peterson shamelessly admits that the maps were compiled from published sources only. Obviously this was not the best way to do it. Bird distribution and our knowledge of it both change rapidly enough that books on the subject tend to be slightly out of date by the time they roll off the press, and much more so after five or ten years. Compiling from published sources, obviously, was only half the ideal approach: the Petersons should have followed up by circulating their preliminary maps to experts in every relevant state and province. Since they failed to do so, of course, every locality birder in the East will be able to find errors in the maps. But as far as the range maps go — as rough summaries of published information on bird distribution in eastern North America — they are the best available in portable form, and despite their deficiencies they will be useful and educational for most birders. A feature I like is the inclusion of editorial comments around the edges of the maps. The map for the Dickcissel *Spiza americana*, for example, carries these notations: "Fluctuates at e. edge of range / Sparse fall migrant on Atlantic Coast / Formerly bred along seaboard; Mass. to S. C. / Winters rarely in e. U.S. at feeders / Winters mainly Mexico to n. S. America." These notes convey much more information than would be possible with mere symbols.

IN SUMMARY, then, the new Field Guide is a very attractive book, and it contains enough information that every eastern birder will surely want a copy. However, it is a far cry from the accurate, reliable book it could have been. Its major flaw is its excessive

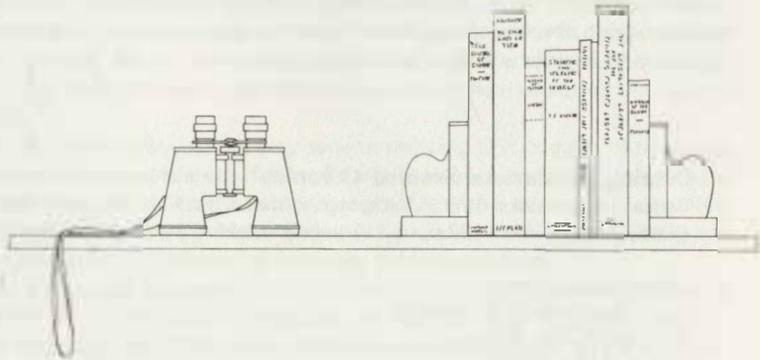
number of large and small errors scattered throughout the plates, text, and maps; the presence of these errors reflects a major flaw in the production process, i.e. the lack of a thorough review & revision by experts in the field. If further editions of this or other guides in the series are contemplated, hopefully either good sense or his publishers will prevail upon Peterson to seek the aid of more knowledgeable observers. R.T.P. should not feel self-conscious about doing so: after all, paradoxically, his field guides have been instrumental in creating a generation of experts who have moved "beyond the field guide stage of birding."

For the time being, the North American observer is still without a reliable bird guide. The recommended solution, if you want a book to carry afield, is to take both the appropriate regional Peterson Field Guide and the Golden Guide, *Birds of North America* . . . and take both with a large grain of salt. Use a liberal hand in writing additions and corrections into the margins; take every opportunity to learn new points from other birders, from your own experience, and from articles in *Continental Birdlife* and elsewhere. Keep your fingers crossed in hopes that an "advanced field guide" may yet be forthcoming from some source. And if you should meet Roger Tory Peterson, do not criticize his latest Field Guide; just ask him to autograph your copy, and thank him for having done so much to promote bird study all over the world.

Reviews

Edited by

ELAINE COOK



A Guide to the Behavior of Common Birds — Donald W. Stokes. 1979. Boston, Massachusetts: Little, Brown & Co. 346 pp., illus. by J. Fenwick Lansdowne, bibliog., index. \$9.95.

Publisher's address:
Little, Brown & Co.
34 Beacon St.
Boston, MA 02107

ALTHOUGH we are routinely called "birdwatchers," it seems most birders spend regrettably little time *watching* to see what birds are actually doing. This *Guide to the Behavior of Common Birds*, with its focus on a few easily-observed species, could bring about a healthy change in this aspect of birder behavior.

Twenty-five common species are discussed in detail. Although all of the included birds are of wide distribution (and all areas of North America will harbor some of them)

their orientation is clearly eastern, and no exclusively western species is covered. Each species account runs ten to fourteen pages, with a behavior calendar, a display guide, and behavior descriptions. The monthly behavior calendar gives a rough approximation of the timing of certain behavior patterns described in the text, such as territorial defense, courtship, nest-building, breeding, seasonal movement, and social behavior. The display guide describes the postures and vocalizations which the birds use in courtship, aggressive interactions, and so on; these displays include such items as head-pumping in Canada Geese *Branta canadensis*, flutter-flight by Tree Swallows *Iridoprocne bicolor*, song-flight-call by Common Yellowthroats *Geothlypis trichas*, and wing-droop in American Robins *Turdus migratorius*. The last and longest section in each species account describes life history aspects such as territories (both breeding and non-breeding), nest-building (with hints on how to locate nests of the species), all phases of nesting and fledgling behavior, molt, migrations if any, and social behavior.

Accepting this book's invitation to look at bird behavior can prove very rewarding, regardless of the level at which it is practiced. Many observers will probably find that bird watching is simply a good antidote to boredom when the *birding* is slow. However, some may want to pursue the subject further. This book provides lists of selected references which will lead the interested individual to more comprehensive treatments of each of the included species. The author also points out that much basic behavioral research remains to be done on even common species, so that the birder may be able to parlay his interest into a serious contribution to science.

The author, Donald Stokes, does not claim to be an expert on bird behavior, but he wisely chose to have the manuscript reviewed by two leading ornithologists, John T. Emlen and Millicent S. Ficken. Their input was probably responsible in part for the commendable absence of errors. All in all this is an excellent book, and well worth the attention of beginners and expert birders alike. — E. C., K. K.

Catalog of Alaskan Seabird Colonies — Arthur L. Sowls, Scott A. Hatch, and Calvin J. Lensink. 1978. Anchorage, Alaska: U.S. Fish and Wildlife Service. (FWS/OBS-78/78) vi + 32 pp. + 152 maps and tables, 3 appendices, illus. Free.

request a copy from:
U.S. Department of the Interior,
Fish and Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503

Alaska has more coastline than the rest of the continental United States combined, and Alaska supports the largest seabird colonies in the northern hemisphere. Because of this, the long-overdue *Catalog of Alaskan Seabird Colonies* was a necessity as a data baseline to coincide with the exploration and development of oil and gas resources in the coastal basins. As fossil fuel exploitation increases in coastal Alaska, seabirds will be the paramount environmental indicators for monitoring ecological change due to human interference.

Ten years prior to the release of this catalog, knowledge of Alaskan seabird colonies was practically nonexistent. Thus the purpose of the catalog, to delineate the colonies of coastal Alaska and estimate their species content and populations. The undertaking was rather gigantic; the results are modestly successful, yet still most valuable. With publication, key areas for formulating marine resource management policies have been identified. For more casual ornithologists as well as natural history tourists the catalog is a source for the spectacle that is a seabird colony, and for locating the endemic

"Beringian" birds, e.g. the *Aethia* auklets and Aleutian Tern *Sterna aleutica*.

This Fish & Wildlife Service publication is organized to present information both for individual sites and for the species present. This is effectively addressed with species accounts, maps for every colony and numbered tables. The text is in two parts commencing with a brief account for each species. Included here are pertinent statements on life history, nesting and feeding ecology, some identification characters, range delineation and, less often, comments on the species' sensitivity to disturbance. A coupled section reviews the status of each species' statewide population highlighting abundance centers, pioneering areas and largest individual colony; the latter are noted with specific numbers which relate to the second section of the catalog. There is also a diagrammatic drawing of the discussed species. A state map, depicting colony sites with dots and numerical tables, accompanies the drawings.

It appears that the authors divided the writing of the species accounts because the text is not consistent or uniform, although this rarely reaches the point of distraction. The line drawings were also done by several artists and some as expected are of more value than others. The maps with dotted colony locations are to such a small scale that detail is lost. They do serve to visually expose the general range in Alaska and, more importantly, the center of abundance for each species. When correlated with oceanographic patterns the maps could facilitate furthering one's knowledge of seabird ecology.

Throughout the text, beginning in the excellent introduction, the authors reveal and explain the problems inherent in censusing seabirds. (Witness the photograph of massed murren in the introduction!) These problematic parameters are incorporated into the survey estimates. The reader thus clearly understands the presented numbers and that future techniques and estimates must be standardized. Nearly every colony estimate is described as incomplete. It is pointed out that whole colonies are still to be discovered and present estimates revised. The writers interject their own statewide estimates beyond the actual survey results; these extraneous projections do not augment or add to the value of the known totals.

The second half of the catalog is a map section utilizing USGS maps of the entire coast. Each colony is represented with circles of various sized increments, placement of which is most accurate. Included are accompanying tables with a corresponding colony number designating system. Here is where the most significant value of the catalog lies. Interspersed in this section are photos of colonies, habitat and birds.

The catalog is a current summary of population data for all known sites, obtained mostly since 1970. It is bound in a loose-leaf format so map revisions and new information can be added easily. The publication is free and should not be passed up by the ecologist or one interested in seabird distribution. Visiting birders should also find the site maps and species summations most helpful in planning trips and locating the more accessible colonies. A similar catalog (Drent and Guiguet 1961) has been prepared for British Columbia, so the entire Pacific Coast north of 49° N now has preliminary coverage with population estimates and colony locations. — *Theodore G. Tobish*

Recent Literature in Field Ornithology

ALTHOUGH LAST YEAR'S subscribers will be familiar with this column, new readers may want a word of explanation. This column is a brief overview of titles from the technical literature: titles which, in our arbitrary judgment, are likely to be of interest to many field observers.

Ornithological and biological journals are published in awesome numbers today. Material of potential interest to the field birder appears in widely scattered places, often interspersed among highly technical, theoretical, mathematical papers. "Keeping up with the literature" is difficult enough even for professionals in academic institutions; for most amateur ornithologists, it has been largely impossible. This column is meant to provide a first step, by giving the field observer at least some idea of what is being published elsewhere.

We are pleased to hear that many readers find this column an interesting place to browse: the titles are informative in themselves. In scanning the citations below, for example, you will notice references to first records of Hermit Thrush and Yellow-bellied Sapsucker in the British Isles (a reminder that our "trash birds" can be exciting vagrants elsewhere), yet another species new-to-science from Peru (L.S.U. scores again), and a study of American Robin foraging behavior as affected by grass length and lawn mowing (proof that the commonest birds, in the most mundane settings, still merit study). In many cases, for many readers, the title alone will tell enough of the story.

Occasionally, however, you may spot a title of a paper that you want to read in full . . . and from a technical journal you've never seen. What to do? Last year we offered these suggestions:

- (1) The person who lives near a major university will find that a serious amateur can almost always make arrangements to use the university's library facilities. Even those readers who are not so conveniently located might keep this tactic in mind; we know of several birders living in remote areas who set aside one or two weekends a year to visit a major library and "get caught up."
- (2) Although few public libraries (except the largest ones) subscribe to scientific journals, many of them can provide a service called "interlibrary loan" — one facet of which allows one (for a fee, and with some delay) to obtain photocopies of papers

published in practically any journal. Ask a professional librarian for more information about this service.

(3) If you notice that a particular journal carries items relating to your own interests especially often, you may wish to subscribe to that journal.

This year we are introducing an innovation: for each issue we are choosing a few recent papers that seem particularly relevant to the interests of the field observer, and giving these papers expanded treatment, extracting and discussing some of the important points. In this month's selections, for example, you will read about another potential taxonomic "split" in North America (one that will surprise many birders), about new field marks for a rare Atlantic coast pelagic species, and about a Siberian shorebird that may sometimes be overlooked in North America. We hope that this new feature will make the "Recent Literature" column more informative and interesting.

Britton, David. 1980. **Identification of Sharp-tailed Sandpipers.** *British Birds* 73 (8): 333-345.

The Sharp-tailed Sandpiper *Calidris acuminata* is one of those species which has been badly treated in the North American bird guides. Although virtually all records south of Alaska have been of fall juveniles, the western Peterson guide illustrates only a winter-plumaged adult, while *Birds of North America* illustrates an adult in breeding plumage (labelled "winter"!). Despite the misguided guides, West Coast observers have little difficulty in identifying the distinctive rusty-capped, buffy-orange-chested juvenile Sharp-taileds.

For North American readers, the most significant point to be inferred from the *British Birds* article is that we may be missing adult Sharp-taileds in early fall. Consider this: the Sharp-tailed is quite rare in the British Isles, with only 15 accepted records up to 1978, but nine of those records have been of adults in late summer—early fall, still showing much of the remains of breeding plumage. Consider also that the Pectoral Sandpiper *C. melanotos* is a rather scarce transient there, so that presumably most individuals found are closely observed. Despite this (and despite the known competence of so many British birders) there have been cases in which summer adult Sharp-taileds were initially passed off as Pectorals—once even when Pectorals were present for direct comparison! Clearly such birds would be even more easily overlooked in North America, where many observers would not look twice at an "obvious" Pectoral.

Although we urge interested observers to consult the *British Birds* paper (which includes a number of photos and drawings), here is a brief digest of important points. The breast of a summer adult Sharp-tailed is as heavily marked as

that of a Pectoral, but the dark markings are mostly in the form of scallops or chevrons; the breast-pattern fades into the white of the belly without the sharp demarcation of the Pectoral, and scattered dark chevrons extend down the flanks. Molting adult Sharp-taileds in fall have a "messy" look to the breast as the dark markings are lost, unlike Pectorals which have dark chest markings in all plumages. Other characters suggesting adult Sharp-taileds are a conspicuous broad white supercilium; dark streaks on the undertail-coverts; dull greenish legs; and chestnut cap contrasting with a dull gray-brown back. The Sharp-tailed also tends to have a flatter-crowned appearance, shorter and straighter bill, and softer more musical call-note as compared to Pectoral.

— K. K.

Brown, R.G.B. 1980. **Flight characteristics of Madeiran Petrel.** *British Birds* 73 (6): 263-264.

'Madeiran Petrel' is the British name for the bird we call Harcourt's or Band-rumped Storm-Petrel *Oceanodroma castro*. This species occurs, sometimes, off our Atlantic coast (as well as inland after hurricanes, and probably once off California), but its status there has been clouded by an assumption of difficulty in distinguishing it from Leach's Storm-Petrel *O. leucorhoa*.

This note points out flight characteristics which may be the key to identifying the Band-rumped at sea. Atlantic coast birders are, of course, already accustomed to identifying storm-petrels by flight. Wilson's Storm-Petrel *Oceanites oceanicus* exhibits a relatively level flight, skimming the water with fluttery shallow wingbeats, sometimes veering irregularly from side to side. Leach's has a "nighthawk-like" flight, with erratic vertical and lateral bounds, the wings raised high above the back in a "tern-like" posture before each deep downstroke; when Leach's glides

it holds the carpal joints higher than the rest of the wing, giving a head-on silhouette resembling a flattened letter 'M'. These characteristic flight styles identify the birds even at great distances; only at closer range may the observer note such things as the longer, more angled wings, less blackish look and less conspicuous white rump of Leach's. ("Field guide" characters such as tail shape and foot color of Wilson's & Leach's are so difficult to see as to be virtually worthless for field identification.)

The task for eastern birders, then, is to fit the Band-rumped into this scheme of comparative flight-styles and shapes. In this note, Dr. Brown suggests that under pelagic viewing conditions the Band-rumped Storm-Petrel might be confused with Wilson's rather than Leach's, because (like Wilson's) it is relatively short-winged, conspicuously white-rumped, and lacks Leach's erratically bounding flight style. However, the Band-rumped that Dr. Brown watched (off Senegal and off Ecuador) had a unique manner of flight: they consistently flew in "regular horizontal zigzags: banked to the left for half a dozen beats, banked to the right for half a dozen beats, and so on." This behavior ought to be obvious with a long enough view, if observers were alerted to watch for it. For the time being, of course, the Band-rumped should not be identified in North American waters on this basis alone, but it would certainly indicate that an individual storm-petrel deserved close observation and photographic documentation. —K. K.

Johnson, Ned K. 1980. **Character variation and evolution of sibling species in the *Empidonax difficilis-flavescens* complex (Aves: Tyrannidae).** *University of California Publications in Zoology* 112: 1-151 + x. Berkeley and Los Angeles, University of California Press.

Dr. Ned Johnson, who has already done much research on *Empidonax* flycatchers, here zeroes in on the Western Flycatcher *E. difficilis* and its southern counterpart, the Yellowish Flycatcher *E. flavescens* of S. Mexico and Central America. Some past workers have considered the Western and Yellowish conspecific. However, Johnson disagrees; he found significant differences in all their vocalizations, differences which

would probably prevent their hybridizing even if their breeding ranges came in contact (which they don't).

Johnson also devotes much discussion to another taxonomic question closer to home: the exact status of the two major populations of Western Flycatchers in the United States. Although the point is not mentioned in the standard field guides, these two forms may be easily identified by the call-notes of the males. Those of the Pacific coastal population, the race *E. d. difficilis*, utter a single slurred rising note, "pseet!" Those of the interior and Rocky Mountain race, *E. d. hellmayri*, have a distinctly two-syllabled "pit-peeet!" These two forms also differ in details of the dawn song, and in measurements.

Vocal differences are obviously important as species distinctions in some *Empidonax*. This situation naturally raises the question whether the interior and coastal forms might represent distinct species. But since their differences seem minor (at least to our perceptions), this question can't be tested unless the two forms are in contact during the breeding season, so that their interactions can be assessed. Johnson identified one region — Siskiyou County, California — where contact between the two forms could be confirmed. Here it appeared that "pure" coastal and interior birds were nesting in the same localities, a situation suggesting that they were not interbreeding; however, the extreme similarity of the forms involved made it particularly difficult to detect intermediate birds. Although Johnson does not formally propose "splitting" the two, he does keep the question open. The situation has potential. Further field studies in the area of contact are needed.

Clearly, however, birders should familiarize themselves with the position-notes of the males of the two forms, and make separate entries for them in daily field notes when possible.

Those with a particular interest in taxonomy and subspecies will want to read this paper to see how a super-authority deals with subtle geographic variation in these confusing birds. There is also a fascinating discussion of the processes by which so many very similar species of *Empidonax* could have evolved in North America. — K. K.

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FULL TITLES, AND PLACES OF PUBLICA-

TION, OF SERIALS CITED ABOVE

Note on a name change: the well-known journal **Bird-Banding**, of which volume 50 was published in 1979, is now (as of 1980) appearing as **Journal of Field Ornithology**. The sequential numbering of **Bird-Banding** is being retained, so that the 1980 volume of the "new" title was volume 51.

American Birds National Audubon Society, New York, New York. **Auk** American Ornithologists' Union, Washington, D.C. **Bird-Banding** Northeastern Bird-banding Association, Concord, Massachusetts. **Bird Study** British Trust for Ornithology, Hertfordshire, England. **British Birds** British Birds Ltd., Bedfordshire, England. **Bulletin of the British Ornithologists' Club** British Ornithologists' Club, c/o British Ornithologists' Union, London, England. **California Fish and Game** California Department of Fish and Game, Sacramento, California. **Canadian Field-Naturalist** Ottawa Field-Naturalists' Club, Ottawa, Ontario. **Condor** Cooper Ornithological Society, Los Angeles, California. **Journal of Field Ornithology** Northeastern Bird-banding Association, Concord, Massachusetts. **Journal of Wildlife Management** Wildlife Society, Washington, D.C. **The Loon** Minnesota Ornithologists' Union, Minneapolis, Minnesota. **Murrelet** Pacific Northwest Bird and Mammal Society, Pullman, Washington. **North American Bird Bander** joint publication of Eastern and Western Bird Banding Associations, Cave Creek, Arizona. **Ornis Scandinavica/Scandinavian Journal of Ornithology** Scandinavian Ornithologists' Union, Copenhagen, Denmark. **Ostrich** Southern African Ornithological Society, Johannesburg, South Africa. **Western Birds** Western Field Ornithologists, California. **Wildfowl** The Wildfowl Trust, Slimbridge, England. **Wildlife Society Bulletin** Wildlife Society, Washington, D.C. **Wilson Bulletin** Wilson Ornithological Society, Ann Arbor, Michigan.

Latest Rumors

This is a brief recounting of some of the exciting bird occurrences that have come to our attention recently. We make no claims for the completeness of this summary. Although we believe that all of the records cited here are probably correct, we have not been able to check most of them out personally; readers desiring further information should consult the appropriate regional publications, or the regional reports in *American Birds*.

Since this column has been out of commission a while, we can't resist reaching back into early autumn 1980 for the most bizarre record of the year . . . for those who haven't heard. On Southeast Farallon Island, that famous hunk of rock off northern California, an obscure passerine mist-netted proved eventually to be a **Dusky Warbler** *Phylloscopus fuscatus* from Asia! Unlike some Asiatics which occur frequently in the outer Aleutians, the Dusky Warbler is accidental even in Alaska, where it never was recorded prior to 1977. — In further manifestations of the Asian Connection, California also recorded its first **Mongolian Plover** *Charadrius mongolus*, and had repeat appearances by the preceding year's **White Wagtail** *Motacilla alba* near Monterey Bay and **Skylark** *Alauda arvensis* on Pt. Reyes. Incidentally, since the initial confusion over the latter bird was so widely publicized, we should point out that the problem has been resolved: the bird has been shown (thanks mostly to the scholarly efforts of Joe Morlan) to be definitely a Common Skylark of one of the northeast Asian races.

Late fall — early winter: Although some individuals caused local excitement (e.g., Curve-billed Thrasher in Iowa and Townsend's Solitaire in New Jersey), the season was more notable for general movements of northern birds. In the East, Pine Siskins bombed south early and *en masse*; Pine Grosbeaks and redpolls made no such concerted exodus, but they shifted around considerably in the Northeast. Snowy Owls made a good showing, along with large numbers of Rough-legged Hawks, and King Eiders were well represented at their southern limits on the Atlantic seaboard. Perhaps the culmination of this boreal invasion was the appearance of **Ivory Gulls** *Pagophila eburnea* in New York state, with one in the Niagara Falls area and *two* on the Hudson River.

