

The Changing Seasons

*An intimate look at Kathleen
and other avian phenomena of
autumn, 1976*

by *Kenn Kaufman*

Several months ago, when I agreed to write this column, I had it in mind that I would talk about commonplace events. Some recent columnists had decried a lack of spectacularly abnormal patterns, so I intended to stress the spectacular nature of the *normal* patterns. I planned to look at the migration of common birds: the logistic problems of their successful navigation, the ecological problems of fitting them into complex ecosystems at either end of the journey, with examples from the Regional reports. It was my firm intention to exalt the commonplace . . .

But this noble plan was thwarted by Nature: because the extraordinary and unique events of autumn 1976, which cried out for detailed examination in these pages, consumed virtually all of my allotted space. I was left with scarcely room enough to glance at long-distance vagrancy — a pattern of occurrence which, as we are learning, is rather commonplace in itself. A full discourse on the more usual events will have to await a less unusual autumn.

OVERALL WEATHER CONDITIONS

North American weather exhibited a remarkably well-defined pattern of abnormal temperatures during the autumn: it was warmer than usual over approximately the western third of the continent, exceptionally cold over the remainder. Local discrepancies occurred — for example, in the western Great Lakes area August and September were quite warm, with the transition to unseasonably cold not occurring until mid-October; in some other eastern areas, e.g. the Middle Atlantic Coast and Middlewestern Prairie Regions, subnormal temperatures prevailed from August

on. November was the coldest on record over much of the southern Atlantic coast and the Appalachians, while October was singled out as the record-breaking cold month at Tallahassee and in Québec. Still, the slightness of these variations only underlined the consistent nature of the overall temperature pattern.

Some major differences in precipitation were evident. In September almost a record amount fell in Québec, and parts of southern California received 1000% the normal for that month, thanks mainly to tropical storm *Kathleen*. Drought, however, was a serious and worsening problem in northern California, the northern Plains and western Great Lakes areas — and continues to be as I write this. The news media inform us of the drought's effect on agriculture, but Daryl Tessen notes also vanishing ponds, dried-out marshes, numerous forest fires, etc., all of which must have serious consequences for bird populations.

If anything about hurricanes can be called "usual," then the pattern they exhibited this fall was definitely unusual. For once the traditional hurricane belt in the southeastern U.S. went untouched, while Long Island had its first beached hurricane since 1960 and the western U.S. was visited by its first significant tropical storm since 1939.

All of these odd patterns — in temperatures, droughts, misplaced hurricanes — may be traceable in part to a southward shift of certain high-level airflows, including the Polar-front Jet-stream, over eastern North America. Evidently this allowed Arctic air masses to move farther south than usual, leading to record cold temperatures. Meanwhile, a strong and stable high-pressure system off the Pacific coast for much of the season directed high-level circulation northward in that area, contributing to the warm season there — and prevent-

ing the formation of storms that could have ended the drought. The overall high-level circulation apparently deflected tropical storms to the north and east of their normal paths, influencing the autumn's unusual hurricane pattern.

The winter reports will doubtless carry bizarre tales of the subsequent harsh winter's consequences in the East, particularly in northern coastal areas. The next breeding season might well be canceled in some areas if the drought conditions persist. Turning to the fall season under discussion, the most astonishing ornithological effects of the abnormal pattern were produced by the out-of-range hurricanes (to be examined next); the most widespread effects were variations in the timing of migration, related to the abnormal temperatures. In the warm West, late arrivals of wintering birds were remarked upon. In the East there were some indications of an early flight, as some might have presupposed with the subnormal temperatures — but in the Southern Great Plains, Central Southern, Québec, and Middle Atlantic Coast Regions some noteworthy *late* records were established during the season, quite contrary to what might have been expected, suggesting that the response of migrants to temperature will be far from universal.

For local variations on weather/migration themes, readers should consult their own and adjacent Regional accounts. Note that again this fall the Regions reporting "dull" migrations were those in which weather fronts and passing low-pressure systems were minor or few; the Regions reporting "exciting" migrations, with large or numerous "waves," were those visited by major or numerous fronts.

HURRICANE BELLE

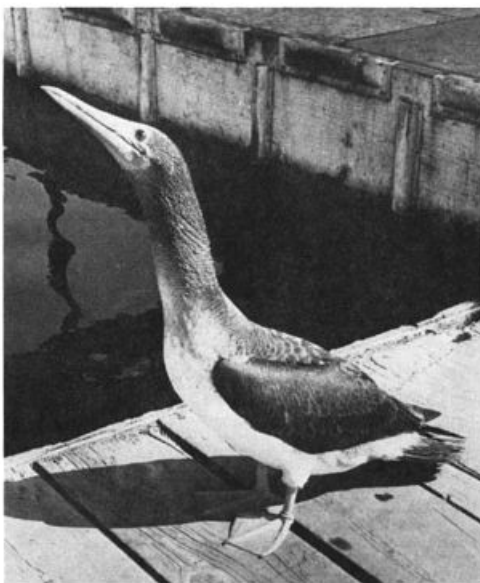
Belle's passage up the Atlantic coast had little obvious effect until her landfall on western Long Island shortly after midnight August 10. Compared to *Donna* (1960) — the last hurricane to cross Long Island — *Belle* was less prodigious as a producer of extralimital records, and the fallout was comprised largely of pelagic species, reflecting the storm's path over the open ocean. (*Donna*, by contrast, had first toured the West Indies, crossed and recrossed Florida, and then moved up the coast, to deposit hordes of southern birds in the Northeast.)

A number of storm-petrels were found along and near the track of the eye in New England, as detailed by Finch; most intriguing of these was the White-faced Storm-Petrel picked up on the Connecticut shore. The record recalls the two brought within sight of land at Oregon

Inlet, N.C., by hurricane *Ginger* in 1971. This species must occur regularly far off our Atlantic coast — beyond the reach of one-day pelagic trips, but not beyond the recruiting powers of hurricanes. Paxton *et al.* provide a thorough and readable account of the Long Island area fallout (including an inexplicably pioneering albatross); note also their comments on Laughing Gull displacement and Clapper Rail mortality.

TROPICAL STORM KATHLEEN

Tropical Storm *Kathleen* plowed into southern California on September 10, 1976, with an intensity and forward speed well beyond the official predictions and with side-effects totally unexpected by local birders. While *Kathleen* will be remembered generally as the most destructive tropical storm to affect the western U.S. in this century (the property damage estimate of \$150 million was one hundred times that of the last major tropical storm in the West, 1939), her avian fallout was so extraordinary — in its unprecedented nature and in its sheer abundance — that the subject demands our attention.



Blue-footed Booby, Calaveras County, Calif., Sept. 15 - Oct. 18, 1976. Photo by John Mugele.

The movements of North Atlantic hurricanes are by now rather well understood, but this is not so true of those off western Mexico. The latter are less frequent, less accessible to study; a high percentage of them never approach land. So it is no reflection on the efforts of forecasters that *Kathleen's* arrival was not accurately predicted — no reflection on the ornithologists, perhaps, that they failed to

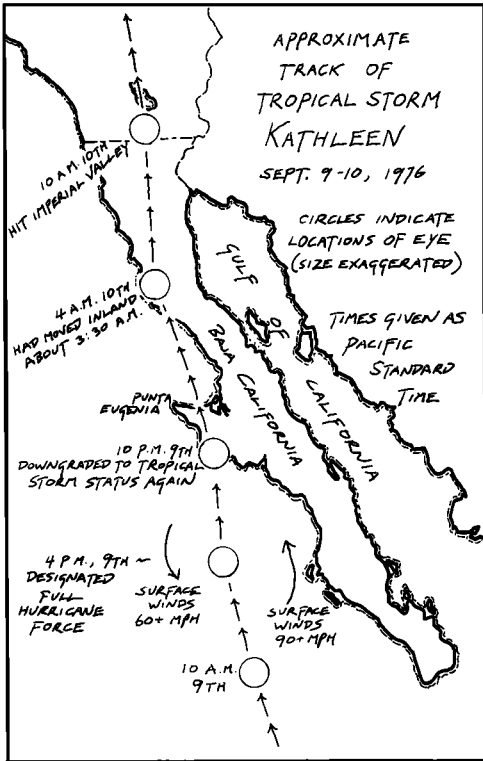


Figure 1.

anticipate the birds brought in, with no precedents to gauge against and with little information on the approaching storm itself. Both groups undoubtedly learned something from the experience.

What the meteorologists learned is discussed in an excellent National Weather Service publication: "Tropical Cyclone Kathleen," by James R. Fors (NOAA Technical Memorandum NWS WR-114, February 1977), from which I have drawn most of my information. In the following discussion I have converted all times to Pacific Standard Time (for comparison with the landfall in California), nautical miles to statute miles, and knots to miles per hour, for clarity for land-based readers.

Kathleen was first detected (on weather-satellite photos) as a tropical disturbance about 350 miles southwest of Acapulco on September 5. The disturbance moved northwest to a position roughly 500 miles south of Baja's southern tip and 300 miles north of Clipperton Island and intensified, being upgraded to a tropical depression by 10 p.m. September 6 and designated a tropical storm by 4 p.m. September 7. Early on September 8 *Kathleen* began to move north-northwest, passing between the Revilla Gigedo Islands and

heading toward Baja California.

Early predictions (based on statistical models) were that the storm would move westward into the Pacific; later, a path recurving toward the Mexican coast was projected. But by mid-day September 9, with the storm off southernmost Baja, its northward course (see Figure 1) was accurately predicted. During *Kathleen's* brief designation as a full hurricane, her maximum wind speed (as estimated by Air Force reconnaissance flight) was around 90 mph, far from extreme as hurricane winds go. So neither the track nor the intensity of the storm at that point was highly unusual.

Kathleen's most remarkable features — which confounded forecasters, and rendered predictions inaccurate after mid-day on the 9th — were her very rapid forward movement and the intensity she sustained after moving inland. Indeed, her advance up Baja of between 30 and 40 mph was evidently more than three times the expected rate, and the winds maintained on arrival in the U.S. were stronger than those brought by any previous tropical cyclone in the West.¹

The last forecast storm bulletin was issued at 4 a.m. on the 10th, shortly after the eye started inland over the coast 220 miles south of San Diego; six hours later, before another bulletin could be issued, the storm center hit the Imperial Valley. A well-defined storm circulation was maintained, surprisingly, for another 12 hours, crossing into Nevada halfway between

¹Some readers will be interested in the reasons for this unusual behavior. On September 9-10 there was a large high-pressure area to the east of the storm track (which evidently prevented *Kathleen's* recurving into Mexico) and a low-pressure area off the coast of California. Confluence of the clockwise airflow around the high and the counterclockwise flow around the low produced a deep-layer meanwind current flowing to the north; *Kathleen's* rapid acceleration coincided with her movement into the strongly confluent area. Fors (*op. cit.*) suggests another contributing factor may have been the "Fujiwhara Effect," a relatively little-known phenomenon, involving in this case interaction between the low-pressure area of the eye and the larger low-pressure system off California.

Four possible reasons are advanced by Fors to account for the intensity which *Kathleen* maintained remarkably far north and far inland. (1) The very rapid movement of the total storm system may have minimized the weakening effect of the cooler waters and then the rough terrain over which the storm passed. (2) A warm inflow on the right-hand side of a tropical storm is thought to be important in maintaining its intensity, so the flow of warm and moist air from the Gulf of California may have been significant as *Kathleen* moved into the U.S. (3) For the same general reason, unusually warm sea-surface temperatures on the west side of Baja may have been important. On September 9, surface temperatures just north of Punta Eugenia were as much as 3.6° above the normal for September. (4) A high-level divergence of air may have helped to maintain the circulation as the track moved north through the interior.

Reno and Las Vegas. Beyond this the remnants produced record rains as far north as Idaho.

Birders were aware of *Kathleen* before her arrival, but there was virtually no precedent for tropical storm waifs in the West (although the remnants of *Katrina*, 1967, had been credited with a Least Tern in Arizona). The media coverage gave scant information on *Kathleen's* path and actual intensity, and possibly a tropical storm on that track with the expected low intensity would have brought no pelagics at all. For all of these reasons there was no concerted search for birds in the storm's wake.

Four frigatebirds were seen in Arizona on the 10th. A tropicbird was caught by a dog in Morongo Valley, California, on the 11th, and that night a storm-petrel flew around the football stadium at Las Vegas during a game. These records would have alerted the birding populace, had communication been faster. As it happened, the news broke on the 12th, when Skip Prange discovered two Least Storm-Petrels on Lake Mohave and Ted Parker *et al.* found this species by the hundreds on the Salton Sea.

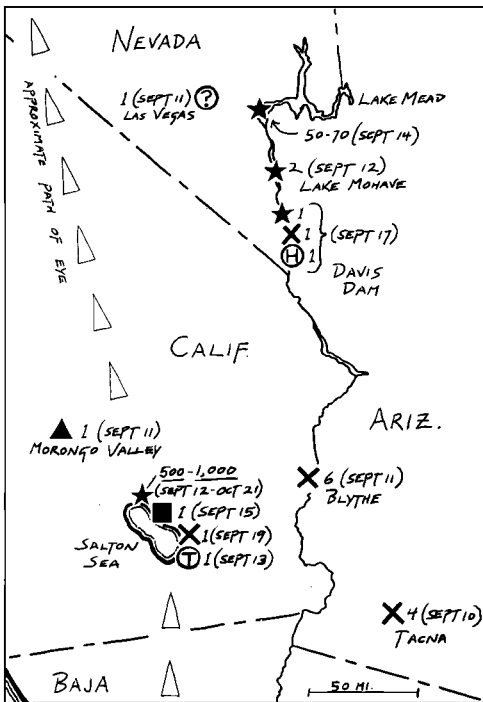


Figure 2. Birds found in *Kathleen's* wake. Key to symbols:

- ★, Least Storm-Petrel;
- , Leach's Storm-Petrel;
- ⊙, storm-petrel, sp. (see text);
- ×, frigatebird;
- ▲, Red-billed Tropicbird;
- ⊕, Heermann's Gull;
- ⊖, Least Tern.

See Figure 2 and the Regional reports for species and numbers found, their locations and dates. A few additional comments are in order here.

The frigatebird photographed by Lawson at Davis Dam appears to have been a Magnificent, but the others may not be assignable to species: it is possible that some traveled in the eye from the Revilla Gigedo Islands, where the Great Frigatebird (*Fregata minor*) reportedly breeds. Also, the storm-petrel that attended the game at Las Vegas was initially identified as a Black, the possibility of Leach's being raised later. Considering the storm track it would seem difficult to rule out the Sooty Storm-Petrel (*Oceanodroma markhami*), which has been collected in the vicinity of Clipperton Island and which resembles the Black closely.

Except for the storm-petrels, all species found in the storm's wake had occurred inland in the southwest before. The Red-billed Tropicbird, exceedingly rare inland (only two records: Arizona 1905 & 1927), should be safely attributable to *Kathleen*. The four Arizona frigatebirds were actually seen arriving with the storm; the subsequent observation of adults near Blythe suggests storm origin, as wanderers to the interior have generally been immature. The Heermann's Gull was early (relative to Arizona records), the Least Tern was late, and both were locally quite rare: these were possibly brought by *Kathleen*. The Red Phalaropes, Parasitic Jaeger and Sabine's Gulls found later in the province of the storm track all represent species that regularly pass through in small numbers, and I suggest they were migrants from farther north rather than storm waifs from a pelagic source, though this is not provable.

There has been some discussion as to whether the storm-petrels came from the Pacific or from the Gulf of California. To understand why either might be true, consider the tropical storm structure. In a Northern Hemisphere hurricane the winds rotate in a counter-clockwise direction, spiraling into a circular or elliptical flow around the calm low-pressure center of the eye. The highest wind velocities are found to the right-hand side of the advancing hurricane, since the forward motion of the whole system is added to the innate speed of the winds themselves; note that the highest recorded winds *Kathleen* produced in the U.S. (76 mph) were not near the storm center, but at Yuma, sixty miles to the east.² Clearly strong winds flowed northward over the northwestern edge of the Gulf while the eye was moving north over the Baja peninsula.

²Note also the pattern displayed by hurricane *Belle* on Long Island: highest wind velocities and greatest number of displaced birds to the east of the path of the eye.

The question then is whether the birds moved inland from the Pacific with the eye (a pattern frequently noted in Atlantic hurricanes) or whether they were swept northward from the Gulf by the strong outer winds. After lengthy examination of the subject I find neither explanation conclusive, but I can suggest some points on either side.

PACIFIC ORIGIN: Pelagics that have reached the calm eye of a hurricane (perhaps carried in by the spiraling winds) apparently tend to stay there, moving with the storm center, rather than venturing out into the wind circulation again (this tendency probably varies among species; relative ability to fly in strong winds may be a factor). Some birds may tend to remain in the eye even when the storm has weakened considerably — perhaps from the still air of the low-pressure center they have no means of gauging the outside winds. So it is possible that storm-petrels entrained into the eye as *Kathleen* traveled up the coast of Baja would have remained there as the storm center moved inland, with many ejecting as the eye passed nearly or directly over the Salton Sea and some remaining in the eye north into Nevada.

One problem is that this explanation requires the storm-petrels to have crossed some mountainous terrain in northern Baja. As evidence that this is at least possible I would mention that Leach's Storm-Petrels and other pelagics have occasionally been deposited by the eyes of dying hurricanes in upstate New York, having apparently crossed the ridge systems of the eastern Appalachians to get there.

GULF ORIGIN: Tropical storm circulations with "eyes" are not an essential requirement in transporting storm-petrels inland. Many readers will recall last year's event (admittedly a highly unusual one) in which 100+ Leach's Storm-Petrels were carried inland in Oregon by a November storm (*Am. Birds* 30:113). It is worth noting that winds on the Oregon coast in that case reached 145 mph; the highest estimated wind velocities in *Kathleen* (even as a hurricane) were around 90 mph, and those over the northern edge of the Gulf were probably less, although no data are available. On the other hand, the tiny Least Storm-Petrel may be more susceptible to wind-displacement than Leach's. The unknowns make this line of reasoning difficult to pursue very far.

As noted previously, some frigatebirds evidently arrived on peripheral winds from the Gulf. However, frigatebirds have a sailplane

structure ill-suited to flight *against* strong winds, and it is thought that they never alight on the water voluntarily. Those that were in the air over the northern Gulf as the winds accelerated on the 10th may have had no alternative but to ride with the gales. Storm-petrels would seem to have had the option of resting on the water during the worst of the winds.

Had the birds been found earlier, I would have said the location of the big concentration on the Salton Sea argued against Gulf origin, being too far west for the influence of the strong northward wind current. However, a considerable amount of post-storm dispersal could have occurred in the 48 hours before their discovery. The storm-petrel attracted to the stadium lights at Las Vegas provides fragmentary evidence that some were indeed wandering overland; the saline expanse of the Salton Sea could have exerted a powerful "oasis effect" on storm-petrels lost over southeastern California. Still, the case for winds-from-the-Gulf origin would have been much stronger if storm-petrels or tropicbirds had been picked up in Yuma, or *anywhere* in the region hit by the highest winds, and if the huge concentration of Least on the Salton Sea had not coincided so very neatly with the path of the eye.

The final fate of most of these birds is as uncertain as their provenance. As McCaskie notes, the Salton Sea storm-petrels gradually disappeared with no casualties found, and some may well have returned to the ocean. The same might apply to the Lake Mead area birds.



Parasitic Jaeger, Lake Mead, Nev., Nov. 24, 1976.
Photo by C. S. Lawson.

Within a few hours on September 17 a frigate-bird, a Least Storm-Petrel, and a Heermann's Gull flew past Chuck Lawson at Davis Dam, all headed down the Colorado River in the direction of the Gulf of California.

One final point. The ideas of post-storm dispersal and of pelagics returning seaward raise the uneasy question: What *other* rarities might have been found, if birders had reached the affected areas sooner? Rather than make painful references to *Pterodroma* petrels and the like which occur in the southern reaches of *Kathleen's* track, I will simply quote from Newman and Andrie (1961, *Aud. Field Notes* 15:6), who stated that "in order to reveal the true effectiveness of a hurricane in the transport of birds, an observer must be in the field on the day the eye passes or on the day after" — an assertion backed up by their analysis of the records associated with hurricane *Donna*. At any rate, I rather suspect that the *next* tropical storm of any magnitude to visit the West will receive very prompt attention from field ornithologists.

Ironically, this season that was so cold for the East brought few of the traditional northern invaders. Indeed, the very lack of movement by winter finches was among the season's major events, mentioned by almost all editors east of the Rockies; the far northern cone crops and seed crops were reportedly excellent, so the birds stayed home. An exception was the Purple Finch, which appeared in large numbers in the Southern Great Plains and Central Southern Regions despite an "unimpressive" passage in most areas farther north. The erratic performance of the group was also marked by scattered out-of-range records of White-winged Crossbills in Wyoming, Nebraska, and New Mexico.

Among the northern predators, there was a fair movement of Rough-legged Hawks over much of the United States, two in Florida being notably far south. Snowy Owls staged a minor invasion in the center of the continent, the southernmost reaching Oklahoma City, but no flight was apparent on either coast. A heavy incursion of Northern Shrikes was reported from the Ontario, Western Great Lakes, and Middlewestern Prairie Regions, while three at Amarillo excited Texans and northern Arizona had more than usual, indicating a very widespread flight.

At frequent but irregular intervals, autumn flights bring large numbers of Blue Jays through the southern Plains and on into south Texas. Such a flight developed this fall, as detailed by Williams and Webster. Simultaneously, however, a *westward* flight occurred — primarily north of the fortieth parallel. In



Wisconsin's first Prairie Falcon, immature female Vernon County, Oct. 31, 1976. Caught and banded by William A. Smith. Photo by Patt M. Wagner.

the Northern Great Plains, unprecedented numbers reached Saskatoon and eastern Montana. In the Northern Rockies/Intermountain Region this invasion was termed "*the event of the fall season,*" with multiple records in all included states and provinces. Six reached the Northern Pacific Coast, several new locality records were established in the Mountain West, and one straggled to Arizona for the first state occurrence.

This invasion was unprecedented; but the Blue Jay has been expanding westward and increasing on the western edge of the Great Plains. As Thomas Rogers points out, further expansion seems likely. The recent success of the species in Denver suggests a promising future in the West — particularly below the breeding elevation of Steller's Jay, in some riparian and residential areas where the Blue Jay would seem to have no obvious competitors.

INVASIONS

Complementing the Blue Jay invasion was an eastward movement of Black-billed Magpies, mainly into western Ontario and Minnesota, with singles reaching Iowa and far eastward to Kingston, Ontario. A major flight of Gray Jays in Minnesota extended to Saskatchewan and Ontario. No connection is apparent between these Corvid invasions, but their simultaneous occurrence is interesting.

Mountain Chickadees in numbers moved down from the Rockies in the Mountain West and Southwest, with one reaching the Oklahoma panhandle. A flight on a smaller scale (but one which rarely occurs at all) brought a few Pygmy Nuthatches to low elevations in Montana, Colorado, New Mexico, and notably South Dakota. Esther Serr informs me that subsequent to the end of the period more Pygmies arrived at South Dakota feeders, and one traversed the state practically to the Iowa border — a remarkable movement for a 'sedentary' species, recalling past adventurers at Wichita and Dallas. This report also brings to mind the nuthatch at Milwaukee in the winter of 1971-72 that was reported as a Brown-headed (*Am. Birds* 26:69, 608): clearly the twain shall meet in the Upper Midwest, and any capped nuthatch there should be identified with extreme caution.

An amazing influx produced 21 Wheatear reports in six eastern Regions. The majority were in New England, the southernmost was Florida's third, and Davis Finch volunteers an extralimital report of one on Eleuthera in the Bahamas (as well as a flock arriving on shipboard in the Labrador Sea). The number of reports seems unprecedented — but in such low-density invasions we can hardly draw comparisons with past years, when observers were less numerous.

Golden-crowned Kinglets flooded the southern tier, from "the best invasion of recent history" in Florida to "unprecedented numbers" in southern California. I suspect that most of these birds — including the majority of the western ones — originated in the boreal forests of Canada. While one might expect Golden-crowns from western mountains to be the more likely visitors in western lowlands, the opposite is indicated by specimen records in Arizona, where previous lowland invasions have been of *R. s. satrapa* from the eastern half of Canada. Thus I believe that the Florida and California kinglets and those in between probably all represented a single movement.

It also appears that the big southward flight was not merely a phenomenon of 1976. Analysis of past records suggests that kinglet

numbers (both species) have been building up for at least the last six years. Some north-eastern Regions called both species abundant this fall, but the Ruby-crowned is less likely to draw comments in southern areas where it always winters in numbers.

The Golden-crowned Kinglet has been extending its breeding range southward in the Northeast recently, taking advantage of ornamental plantings of Norway spruce, but I doubt the expansion has been extensive or sudden enough to account for this fall's flight. Instead, it seems more than coincidence that the kinglets originate in the same northern spruce forests as the Cape May, Tennessee, and Bay-breasted Warblers, which also have been in high population cycles for the last few years. Most eastern Regions this fall mentioned high numbers of at least one of these warblers, while Québec and Ontario, closer to the source, referred to the continuing abundance of all three. The purported reason is that these warblers are responding to population outbreaks of the spruce budworm moth in certain areas of the boreal forest. If that is correct, I suspect the recent abundance of kinglets may be traceable to the same cause.

THE "ORANGE LIST"

It is generally difficult to infer the status of declining species from *American Birds* seasonal reports, because the question so frequently arises: Was the bird not seen, or was it simply not reported? ("Only three sightings of Bald Eagles were submitted," writes Purrington, "a fact which may be meaningless . . .") This is why our Editor, Robert Arbib, carefully weighs the opinions of many correspondents in updating this journal's valuable "Blue List" feature. It is also the reason why I have nothing to say here about declining species.

American Birds might well initiate an "Orange List" of species undergoing range expansions or population increases, to complement the Blue List. Progress by the following drew comment this fall:

Reports of high numbers in Vermont and Ontario indicate the continued northward spread of the Turkey Vulture — which, as Kibbe points out, does not seem to fit with supposed declines farther south. Peripheral reports of White-tailed and Mississippi Kites in several areas reflect the ongoing range expansions of these successful raptors.

Pioneering Anna's Hummingbirds nested in Washington and Texas last spring, and occurrences this autumn were also widespread. Alberta recorded its first individual, Montana its third; impressive numbers were reported from British Columbia, both inland and on

Vancouver Island; and another reached southeastern Alaska.

There is no doubt of the firm entrenchment of the House Finch in the Northeast (note the high banding totals reported from Pennsylvania localities in the Hudson-Delaware and Appalachian Regions). From this solid base the species is radiating outward in all directions. One individual, in this exceptionally cold autumn, wandered north for Québec's first sighting; other notable occurrences were in Michigan, Illinois, Tennessee, and Georgia. The westward records in particular raise the question: Will the House Finch finally succeed in crossing the Great Plains — from the east?

Other "Orange List" candidates in this issue include the Mute Swan, expanding southward on the Atlantic coast and possibly westward in the Western Great Lakes area, and the Gadwall, its breeding range expansion in the Northeast perhaps reflected in high counts from the Appalachians and Florida. The Sandhill Cranes in Québec and Ontario may represent either new expansion or simply new discoveries, but the Black Skimmers and Chimney Swifts in southern California definitely belong on the "Orange List." So do the Black-billed Magpies currently re-invading Arizona, and the Fish Crows moving into Piedmont areas in the Carolinas. Cardinals are doing remarkably well in Québec, where — despite the record low temperatures — one was feeding young in October; it will be interesting to learn whether the subsequent harsh winter has affected these colonizers.

GENERAL COMMENTS

The 1970's have witnessed a tremendous surge of interest in pelagic birdlife off our Atlantic coast, and the age of discovery is still very much in progress there, as indicated by the amount of space devoted to the subject by Editors there. A noteworthy feature this autumn was the variety of pelagics reported from the Gulf of Mexico, primarily by Florida and Texas birders. The Gulf's reputation as a "dead sea" may be subject to revision if these observers continue their offshore explorations.

Spring and summer 1976 were marked by exceptional appearances of "southern" heron and ibis species inland and north, and the trend continued into autumn. Louisiana Herons (boldfaced in five Regions) and Little Blue Herons were the most widely remarked. Great, Snowy, and Cattle Egrets were found in very good numbers in northern localities. White Ibis made extraordinary appearances in New Mexico, Wyoming, and Montana, while reports of dark ibis were well distributed northward in the center of the continent. Some

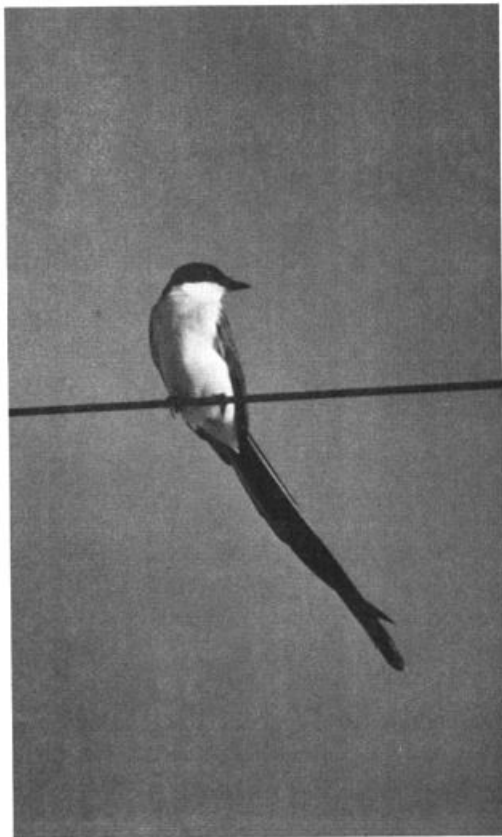


Groove-billed Ani, Allendale, Mich., Oct. 16, 1976.
Photo by James Ponshair.

of the latter were wisely referred to *Plegadis* sp., but others were confidently called either White-faced or Glossy Ibis — hopefully these were identified with caution. As the Glossy extends its breeding range north on the Atlantic seaboard, and the White-faced possibly spreads eastward along the Gulf coast (*Am. Birds* 30:966), old assumptions as to the geographic probability of one species or the other in a locality may no longer be valid.

This season's inland passage of scoters rivaled last fall's notable flight. Undoubtedly many of the new locality records may be laid to the presence of new reservoirs where these sea-ducks may stop to rest. However, Goodwin points to steady increases in the Black and Surf Scoter flights on the lower Great Lakes, and Tessen recounts substantial numbers crossing the Western Great Lakes region — habitat in these areas is neither artificial nor new. We may be witnessing an actual increase in the scoter populations migrating across the interior.

Autumn hawk-watching attracts more devotees yearly. This fall, practically all Regions commented on the topic; note particularly the tabulations in the Hudson-Delaware, Ontario, and Middle Pacific Coast Regions, the account of the Broad-winged passage in South Texas, and the discovery of new lookouts in Utah and New Mexico. This increasing interest doubtless contributes to the number of out-of-range raptor reports. More Swainson's Hawks are being noted in the East: this fall New England had two, three passed an



Fork-tailed Flycatcher, Chokoloskee, Fla., Oct. 17, 1976. Photo by Joe Van Os.

Ontario lookout, and Cape May, N.J., had up to *five*. By way of cultural exchange, *nine* Broad-wingeds were counted from northern California's Point Diablo. Prairie Falcons strayed east to Minnesota, Wisconsin, and South Carolina.

The most amazing raptor reports, however, were a Zone-tailed Hawk photographed in Nova Scotia and a Common Black Hawk hit by a truck in Minnesota (not at Duluth, either!); see appropriate Regions for comments on these. Such extra-limital reports would be extremely difficult to accept with less documentation. Aside from the "escape" question, the mere identification of such birds could pose exceptional problems — the final diagnosis must eliminate all other species in the *world*, since a surprising number of exotic raptors are held by falconers.

Even as the Yellow-shafted Flicker fades into obscurity, the occurrences of Thayer's Gull are finally being delineated. Of several Thayer's

mentioned this fall, those reported (with appropriate cautionary notes) by Doug Kibbe are most astonishing, standing at odds with everything we thought we knew about the distribution of this form — multiple adults at Rochester in August?! It is impossible to say at the moment whether this represents a new development; or a regular occurrence, previously overlooked; or perhaps a misidentification of some other odd form. The lesson seems clear enough: the distribution and identification of *thayeri* might have been clarified long before its ascent to "countability" if there were more general interest in birding for taxa below the species level. I would second all of the comments by Winter and Erickson (under Solitary Vireo) on racial determinations.

There is nothing intrinsic about the species category that makes it recognizable afield; some subspecies can be distinguished easily, some full species cannot. Wisconsin's first Rufous Hummingbird this fall was an adult male (*vide* Daryl Tessen), but observers in North Carolina were less fortunate, and their \emptyset -plumaged *Selasphorus* vanished before any drastic measures could be taken. The fact that Allen's Hummingbird has never been collected in the East is not very reassuring, since it is clearly unwise to identify birds on probability alone. On a similar theme: I always wonder about the offhand mention of unusually late "Ruby-throated" Hummingbirds in the East — are they *all* adult males? Separation of \emptyset -plumaged Ruby-throated and Black-chinned Hummingbirds in the field is to my knowledge impossible, and late or otherwise unseasonable occurrences would seem open to suspicion. Eastern birders should remember that *five* species of hummers wintered in Louisiana last year, including a proven Allen's, and that Black-chinneds may have outnumbered Ruby-throateds among the identifiable *Archilochus* there. Such terms as "*Archilochus*, sp." or even "hummingbird, sp." could stand a more widespread application.

1976 was a notably good year for two Tyrannids that wander northward along our coasts in autumn. Up to *five* Fork-tailed Flycatchers reached our Atlantic shoreline with two in Florida, evidently two in Maine, and one in Nova Scotia. Tropical Kingbirds were exceptionally numerous on the Pacific coast with ten or eleven in southern California, fifteen in northern California, one in Oregon, one in Washington, two on Vancouver Island — and, carrying the established pattern to its logical extreme, one in *Alaska* for the state's first record.

These two patterns of occurrence appear superficially similar, but there is a difference

between them more basic than the difference in magnitude. Practically all the Fork-tailed Flycatchers to occur in the United States so far have been proven or thought to be of the nominate race, which nests in southern South America and winters (during our summer) in northern South America, casually to the West Indies; our autumn is the season when these birds should be returning *southward* to breed. By contrast, the Tropical Kingbirds reaching our Pacific coast all seem to be *T. m. occidentalis* of western Mexico; their appearance in California coincides with the period when the northern populations, at least, should be moving southward for the *winter*. It is possible that these two patterns of northward straying represent something similar to mirror-image misorientation at opposite points in the two species' annual cycles.

VAGRANCY: THE ROLE OF WEATHER vs. THE ROLE OF THE INDIVIDUAL

It is odd to recall that as recently as 13 years ago in this column, James Baird could quite reasonably point to the "recent phenomenon" of eastern birds appearing in the West, and predict that the subject would eventually demand as much space as the well-known occurrences of western birds in the East.

Clearly the situation has surpassed the prediction. Eastern Regions continue to report a handful of western species each fall, while in this issue the Southern and Middle Pacific Coast Editors run through exhaustive roll calls of eastern species without bothering to boldface most of them anymore, and the Mountain West and Southwest are approaching the same condition. The pre-60s picture was largely an artifact of the greater observer-force in the East; the current reversal is partly a function of the way in which Nature has sprinkled the coastal and arid sections of the West with "vagrant traps," and partly a result of the fact that western birders are acutely aware of these locations and regularly scour them for rarities. Nonetheless, it has been established that eastern birds do stray westward.

One side-effect of this discovery has been to cause difficulties for those who sought to link vagrancy to weather patterns. When Western Kingbirds and the like on the Atlantic seaboard constituted the best-known examples of vagrancy, it was easy to attribute these to the prevailing west-to-east movement of weather disturbances across the continent. When the

mounting score of eastern warblers in California could no longer be ignored, eastern ornithometeorologists devised increasingly elaborate theories, involving combinations of upper-air flows, to carry the birds out-of-range. There must be a limit to this line of reasoning. No doubt local weather patterns often drift migrants slightly or temporarily off course, but I believe that the role of weather in long-distance vagrancy has been vastly overestimated.

There is reference herein to a White Ibis which was theoretically carried to Wyoming from western Mexico by winds associated with a couple of moving low-pressure systems. Now, this mechanism seems no less feasible than some advanced in this column in past seasons — but consider for a moment the two possible implications: (1) the winds were so powerful that ibis was helpless against them, unable even to land and wait out the storm (in which the intervening Great Basin states should have been strewn with tropicbirds, palm fronds, and human casualties); or (2) White Ibis generally remain within their normal distributional limits only through luck and fair weather, since they feel no compunctions about allowing the breeze to drift them away across deserts and mountains (in which case the continued survival of the species would seem unlikely). Either alternative strains credulity.



Arizona's first Blue Jay, near Page, Oct. 31, 1976.
Photo by Joan Middleton.

I would not claim that weather had *no* effect on the bird's wanderings. Under different weather conditions the ibis would have appeared at Casper, perhaps, rather than at Sheridan. But weather's effect was probably negligible compared to factors intrinsic to the species and factors intrinsic to the wandering individuals themselves. Going further — going out on a limb, admittedly — I would venture that weather disturbances had little to do with *any* of the boldfaced reports in this issue of *American Birds*, except for those records directly traceable to hurricanes *Belle* and *Kathleen*.

The navigational systems of birds are complex. Despite decades of research, the homing abilities of homing pigeons still elude full explanation; and I doubt that this descendant of the essentially non-migratory Rock Dove has a more highly developed navigational sense than the Blackpoll Warbler, which can migrate ten thousand miles and return to the same patch of forest. 'Malfunctions' in a complex navigational faculty could produce individuals of migrant species that consistently migrate in the wrong direction — DeSante's brilliant work with mirror-image misorientation provided strong evidence that such individuals do exist.³ There is growing support for the idea that most vagrants are, in fact, such misorienting individuals, rather than the helpless victims of meteorological cataclysms.

Why then should vagrants often appear after auspicious wind patterns? Possibly such winds provide for the prolonged *survival* of numbers of misorienting individuals — favor a temporary success in their misdirected endeavors. The mis-orienting eastern passerine that burns itself out against the Rockies in poor weather might make it to the Pacific coast under more favorable conditions. It is also likely that even a totally mis-oriented individual will recognize and take advantage of winds that favor travel in its intended direction.

In summation: I believe that normal weather patterns, those of less than hurricane intensity, will rarely cause more than local displacements of migrating birds. I suggest that the role of weather disturbances in transcontinental vagrancy is negligible. This idea will appear heretical to some readers, while others will have already taken the concept for granted — this indicates the current divergence of opinion on the subject. Hopefully we will see a con-

³Admittedly, some problems arise in attempting to explain such 'malfunctions' in terms of their genetic basis, their evolutionary significance, and possible environmental effects. Exploration of these aspects is beyond the scope of this article.

tinuation of the long-standing tradition in *Audubon Field Notes/American Birds* of presenting all sides of the discussion.

SOME CONCLUDING REMARKS

In confirming my comments to inter-Regional patterns (and to a few specific cases where I had something to add), I may have seemed to be ignoring many important records. Isolated or one-of-a-kind occurrences, such as the Short-tailed Albatross in the Aleutians, are indeed significant and deserve attention; but for me to repeat them all in this column would consume space and serve no useful purpose.

At any rate — the Regional columns which follow are replete with fascinating items. No one should miss Fred Webster's thoughtful discussion of recent parrot sightings in the Rio Grande Delta. R. D. Purrington describes an offshore oil rig that may be the Gulf of Mexico's answer to the Farallon Islands (Flammulated Owl, indeed!). New developments include a first report on the Vermont Breeding Bird Atlas Project, and the discovery of the shocking truth about the *Empidonax* migration in eastern New Mexico. There will be mixed reactions to the accounts of control programs applied to geese in Wisconsin and gulls in Utah. There will be envious reactions, I predict, to the phenomenal number of rarities that dominate the Florida report; John Edscorn's well-founded excitement over the season surfaces in every paragraph. The reader would be well advised to at least skim all the Regional columns, noting the boldfaced species, reading the S.A.'s, and watching for those shorter bits of insight which the Regional Editors insert at every opportunity, all of which contribute to our evolving knowledge of the birdlife of the continent.

ACKNOWLEDGMENTS

In writing this column I sought the aid and advice of many. Lengthy discussions with Scott Terrill and Ted Parker were particularly informative; I also received useful ideas from Elaine Cook, John Hubbard, Chuck Lawson, Doug Stotz, and Janet Witzeman. In my attempts to track down weather data, personnel of the Phoenix office of the National Weather Service were most helpful. In addition to the usual outstanding efforts of the *American Birds* Regional Editors in producing the set of seasonal reports, many supplied me with additional information, either voluntarily or on request. I wish to express my indebtedness to all of these persons, pointing out at the same time that none necessarily agree with any particular ideas advanced herein.