proven training method for improving one's estimation of numbers was published in *American Birds* 26 (4) 706-712 (reprints available) but almost any CBC group can copy the method advanced, using both group quizzes based on a series of slides showing varying numbers of birds, and random tabletop "flocks" of coffee beans, rice grains, etc., the latter a useful home practice exercise. With adequate training and practice, errors in large-numbers estimation can be reduced to 5% or less. Further, observers can discover *their own* habitual counting bias and compensate for it. Compilers will be urged to carefully evaluate party routes and bird lists to avoid possible duplication.

10. *Feeding station counts.*—Species totals at feeding stations would be segregated from those afield, removing an ignored biasing factor. Where several feeders are so closely spaced that their patrons circulate between them, averages—not totals—will be presented.

11. *Linear or other transects.*—Carefully *censused* tracts based either on straight transects, point counts, or following topographic features such as streambeds, trails or roads, might be incorporated into the CBC format in certain Ideal Model counts. These might serve as more accurate sampling yardsticks for comparing year-to-year numbers. But it would be wholly unrealistic to expect any present CBC group to base its statistics solely on transects. The Ideal Model may suggest but will not require counts to experiment with various forms of census sampling techniques.

12. *Summary statistics.*—Ideal Model Counts will expand the information presently given in the summary, to give added dimension to the data presented. The present accounting is: "Total: 135 species, 101,450 individuals." The Ideal Model accounting (abbreviated in print) would give further insights, for example: **Totals:** 135 species, 10-year average 128 species, cumulative total (26 years) 201 species; species per party hour 1.61, 10-year average 1.52; 101,450 individuals, 10-year average 123,456; 1207 per party hour, 10-year average 1469 per party-hour.

We propose to test an Ideal Model, refined from this outline, this coming (1982-83) season. It would be limited at first to counts fielding statistically significant numbers of observers and basic parties, meeting all other stated conditions, with observers of high R.I.'s and dedicated compilers We would encourage a sampling from various latitude belts both coastal and inland. We would be pleased to have 25 CBCs run on Ideal Model lines the first year. A long-term goal might be 100 per year. But every count of any size could and should comply with most of the Ideal Model reporting procedures.

Two problems suggest themselves. An Ideal Model count obviously demands greater effort and care by every participant, especially by compilers. Moreover the editing and publishing of Ideal Model Counts would require more time, effort, and funds.

Two possible solutions to these problems offer themselves. Various direct incentives will be offered Ideal Model counts: forgiveness of 50% of participant fees, the honorary designation of "Elite Counts." The incentives of pride in leadership, of pioneering into new frontiers, of acquiring reputations of superiority are powerful motivating forces As for the publishing problem, experience will determine whether special funding is required.

Compilers or club presidents wishing to experiment with an Ideal Model count this coming year, and willing to accept the added work and responsibility, are invited to write the Editor, offering evidence that the Ideal Model regulations will be complied with. We will select and notify the Elite Counts for 1982-83 by September 15.

ACKNOWLEDGMENTS

Among those to whom the author is indebted for helpful suggestions are Joseph J. Hickey, Chandler S. Robbins, Susan R. Drennan and Lois H. Heilbrun.

—950 Third Ave., New York, NY 10022

CONTINENTAL ANALYSIS

The Changing Seasons

Autumn 1981—a season in which bird invaders seemed to sweep the continent

Paul A. DeBenedictis

THE FALL 1981 migration generally was considered dull by those who chase rarities, study the influence of meteorological phenomena on migration or search for new patterns of avian distribution. This is an accurate assessment. True, readers of these pages will find numerous rarities, scattered weather-related ornithological phenomena and a few new discoveries in avian biogeography, but the number and variety of these events are small compared to those of many autumn seasons. Two Regional reports stand out as exceptions: see the Ontario Region for a new look at the avifauna of James Bay, and the Hawaii Region for good news about a 'vanished' bird.

THE METEOROLOGICAL SETTING

THE SUMMER 1981 left much of North America dry. This trend generally continued into the early fall. The Far West began to receive exceptionally heavy rainfall in October and November. Precipitation in the central and northeastern interior of the continent during September and October tended to bring annual precipitation totals close to their long-term averages. The Southeast remained dry.

There were few major frontal systems to ground migrants. A minor frontal system that crossed the Midwest in early September was associated with a kill of about 800 birds at a Springfield, Illinois, TV tower the nights of September 2 and 3. The next frontal system crossed the

Great Plains on September 2 and became anchored to a low pressure center over southern Minnesota on September 3. This front extended from central Michigan to central Texas on September 4, from Toronto to the Florida panhandle on September 5, and had passed out onto the Atlantic by September 6. In Ontario the passage of this front was associated with three large tower kills; nearly 10,000 birds were recovered from one station alone on the nights of September 5-6 and 6-7. Almost 1500 birds were recovered from two tower kills in upstate New York these same nights, and major groundings of migrant shorebirds also occurred there and along Lake Erie in the Appalachian Region. The next major system to cross this area on September 13 to 16 brought large scale groundings of migrants over much of the Southeast and the Appalachians, but fortunately did not prove so lethal to migrant passerines.

The only Atlantic hurricane to come ashore, *Dennis*, skirted the East Coast from Florida to North Carolina August 17 to 20. Only the Florida Region and Middle Atlantic Coast regions reported a few tropical seabirds apparently carried by this storm. From the Pacific, Tropical Storm *Lydia* and Hurricane *Norman* crossed Mexico and moved into Texas during the first and second weeks of October, respectively, but appear to have brought no avian "fallout." Several "oceanic" birds appeared in Arizona after an intense storm developed in the Gulf of California in early September.

November was rather uniformly mild across the continent. This is reflected in the numerous reports of tardy migrants from nearly every Region.

IRRUPTIVE SPECIES

THE HIGHLIGHT OF the fall was the widespread appearance of several irruptive species, coupled with more localized movements of several additional species. With a few exceptions, this was not a raptor year. Goshawk and Rough-legged Hawk were widely reported but were not very numerous anywhere. Gyrfalcons were unusually frequent from Minnesota to Pennsylvania and New England, mostly from November on, and there appears to have been a minor incursion of Hawk Owls in the same area. Snowy Owls were found in small numbers, often quite early, and had penetrated to South Carolina by early November; the best counts were in Ontario and Michigan. The really big raptor flight, however, involved Sawwhet Owls: 72+ were netted in Nova Scotia, 780 at Prince Edward Pt., Ontario, and 407 at Duluth, Minnesota. Lesser numbers were reported from all of the Regions immediately to the south. Status of the final irruptive "raptor", Northern Shrike, was like that of Goshawk and Rough-legged Hawk.

Ruby-crowned (above) and Golden-crowned kinglets/Keith Hansen.

Berry-feeding birds, notably robins and Varied Thrush, were quite numerous on the West Coast but not elsewhere. Bohemian Waxwings were widespread but not exceptionally common anywhere.

Insectivorous species made big news. Golden-crowned Kinglets were present in exceptional numbers throughout the West. The same may have been true in the East, where low population levels (owing to recent harsh winters) may have concealed the real magnitude of the flight. Black-capped Chickadees were present in high numbers at the southern edge of their range but appear not to have moved much farther south. This was not true of Boreal Chickadees in the Northeast, which were reported south of their range from southern New England to the Prairie Provinces Region, nor of Mountain Chickadees, which appeared in the lowlands of most of the western Regions along with three species of jays (including Canada's first Scrub Jay from British Columbia), Common Crows and a few Clark's Nutcrackers. On a continental scale, the major flight was that of Red-breasted Nuthatch. The largest numbers in more than five years were recorded at Block Island, Rhode Island, and in the Hudson-Delaware Region. Only moderate numbers reached the Middle Atlantic Coast Region and the species was almost unmentioned in the deep South. High numbers were found west through Ontario to Michigan and south to the Ohio River Valley; the Central-Southern Region notes early arrival but low numbers. Large numbers were reported from the eastern Dakotas and the Southern Great Plains Region, but only three were reported from South Texas. None of the northwestern Regions, except Alaska, mentioned the species, but from the central Rockies west to California and south to Mexico, observers found the species to be abundant. The magnitude of the flight should be evident on the coming Christmas Bird Counts.

"Winter finches" were widely reported. Evening Grosbeaks were present in moderate numbers in much of the Northeast during October and November, but had penetrated only about as far south as did the Red-breasted Nuthatch. They had reached Texas by mid-October and were noted in the Arizona and California lowlands over much of the season. Numbers of Purple Finches were unremarkable, but arrivals were early on the central Atlantic Coast. Cassin's Finches were widespread in the southwestern lowlands. Moderate numbers of Pine Grosbeaks, often arriving very early, were found from the Western Great Lakes Region south to the northern Ohio River Valley and east to the Hudson-Delaware Region. Common Redpolls, which often do not leave Canada until December, were widespread along the northern border of the United States by early

November Pine Siskins moved in numbers comparable to Evening Grosbeak, but penetrated farther south and were even more numerous in the West. Most reports of high numbers of Red Crossbills came from potential nesting areas. However, White-winged Crossbills were found in excellent numbers south of their usual nesting range from coast to coast and in Alaska but, as might be expected from past flights, they did not move far south. Several Regional reports from the Northeast and the Alaska Region noted a scarcity of seeds and cones, and diminished numbers of these species by the end of the season. Conversely, excellent seed crops were reported from much of the central and southern United States where these species had yet to appear. One expects their distribution to look quite different this winter.

POPULATION TRENDS

THE DRY SUMMER seems to have severely impacted those waterbirds which nest in the Canadian prairies and northern Great Plains. Grebes did very poorly, and only two Whooping Cranes appear to have fledged this year (status of the population transplanted to Idaho was not reported). Peregrines and Merlins, especially, continue to be reported in encouraging numbers. Re-establishment of Common Ravens in southeastern New England is described in the Northeastern Maritime Region.

Cory's Shearwaters, a warm-water species, from cool waters off Quebec and northern New England may be more significant. There were no exceptional rarities on the Pacific; Least Storm-Petrels were quite common off California, but other warm-water species were scarce. Inland, only Sabine's Gull appears to have been found somewhat more frequently than normal, and scoters and eiders were decidedly scarce; an Ancient Murrelet from Wyoming was the most unusual report.

RARITIES

EASTERN BIRDS WEST were outnumbered by western birds east this fall. From the East, a fascinating saga of two or more Ross' Geese can be traced from Quebec to Delaware and Maryland. As their field characteristics become better known, records of California and Mew gulls proliferate in the East, but birders working on the frontiers of field identification continue to find problematical gulls, but the "yellow-legged" Herring Gulls from Ontario probably will have to be collected to be identified; even Lesser Black-backed x Herring Gull hybrids is a possibility for such birds. A "female" *Selasphorus* hummingbird in Virginia was photographed in such detail that its identity as a Rufous Hummingbird can be established. A Gray Flycatcher banded in Ontario adds to the growing number of western *Empidonax* from the East, but it is pure speculation that the "large, yellowish *Empidonax*" seen in New Jersey in November was more likely a Western Flycatcher rather than one of the eastern *Empidonaces;* Western Flycatchers are almost unknown as vagrants anywhere. Townsend's Warblers made a good showing in Texas and Lousiana.

There were few southern birds north. The most striking were a Jabiru in Texas, two Bahama Woodstars in Florida, and a Hepatic Tanager in Illinois, the last an addition to the avifauna of eastern North America. A Caribbean Coot in Tennessee deserves special comment. The taxonomic status of this form is not clear. Part of this uncertainty owes to the Slate-colored Coot, *Fulica ardesiaca,* of the Andies and which differs from the American Coot by almost the same characteristics as does the Caribbean Coot. There is evidence that the Slate-colored Coot is actually a morph of the American Coot. Some ornithologists suspect that the Caribbean Coot also is a morph of American Coot. If it is, it would not be surprising to find sporadic birds which exhibit its characteristics in northern populations. Thus, this Tennessee report is especially noteworthy. Two "tropical" kingbirds from Florida are reports of birds beyond the frontiers of avian field identification, because no one yet knows how to separate silent birds of the two sibling species, *Tyrannus couchii* and *T. melancholicus,* which might appear in Florida. The most significant report of a southern bird north, however, comes from the far Northwest, where Cattle Egret finally added Alaska to its "state list", completing a sweep of the United States.

Although many eastern birds were found in the West this year, this was not a banner year. None of the reports struck me as especially noteworthy. The several new state records in various Regional reports generally fill in gaps in known distributional patterns rather than extend our concept of the distribution of these species.

Palearctic species made a very poor showing, especially given the numerous birds found in the late summer Wheatear, as much a bird of northeastern Canada, was found widely in the East, but palearctic waterbirds were poorly represented there. The interior of the continent produced a scattering of Lesser Black-backed Gull and Ruff reports. A Sharp-tailed Sandpiper from the Yukon Territory helps fill in the gap between Alaskan and East Coast reports. The most unusual Alaskan records are two Little Stints, and field work from Middleton Island off southern Alaska produced several notable reports of palearctic birds that had already been recorded farther south on the Pacific Coast. A white-rumped Whimbrel from northern California and a possible Long-toed Stint from Oregon add to the list of palearctic birds recorded from the Pacific Coast south of Alaska, although the cautionary notes on stint identification in the Northern Pacific Coast Regional Report should be emphasized. Recently suggested field marks for these difficult birds are still unproven, and some already are known to be inconclusive.

Rarities long have been a troublesome aspect of *American Birds.* I think that the primary problem now is that there are so many birders so expert in finding rarities that the emphasis placed on these species carries with it the danger of losing perspective about the really significant events of a season The critical perspective is one of scale As an observer, when I find a rarity, the event is noteworthy because I don't do this every time I go afield. I like to share my success with my peers. However, when I consider this same record as a sub-Regional Editor, I realize that many of these records are of birds which someone finds locally every year, though the person so fortunate to make the discovery is often different each year. Each Regional Editor sees one's individual records on an even larger scale, and even more of your records lose some of the quality of the unexpected which make them so exciting to the individual observer. Further, the Regional Editor must balance a desire to

include as many of these reports as possible against a limit to the length of text allowed in the Regional Report and a real desire to convey other significant ornithological events of the season.

The tendency in all Regional Reports has been to emphasize more rarities at the expense of other observations which perhaps are more significant. As a general rule the Regional Editor himself often lacks the perspective which one gains only when all of the Regional Reports are at hand. Often the Regional Editor must guess which of the many records submitted will remain significant on a continent-wide scale. When an editor guesses wrong, the Reports become disjointed and may lack key data that would help us to understand the ornithological events which produce large scale patterns. As you read the Regional Reports, try to trace the development of the Red-breasted Nuthatch or White-winged Crossbill flights. How often will you find a report where, if only a few less rarities had been enumerated and a few more dates and localities for these species had been included, you could say so much more about these flights? I found too many.

Both contributors and Editors must recognize this problem. The Regional Reports can reflect no more than what its contributors submit, so any improvements require a joint effort. How can you help? You help by trying to judge which of your records really have long term, large scale significance and to emphasize them in your reports. When I must guess, my bias is towards events which I know from past seasons occur over large areas—invasions and range expansions and contractions—and records which I know from other observers to have occurred in multiples during a season. Several Editors cautioned me about records which they included in the Regional report although they were not completely confident of the record, because insufficient detail had been included. I think that no such reports ever should appear in these pages. Observers must help their Editors by providing sufficient detail that the Editor is relieved of this decision. No individual contributor should be disappointed to see his records condensed to a terse summary of many similar reports, as is becoming increasingly (and appropriately) common in reports from the Northeast and from California, for example.

Nonetheless, I feel that reports of rarities in *American Birds* have been valuable to ornithology as a whole. In my opinion some of the most significant contributions which *American Birds* has made to our understanding of the North American avifauna over the past two decades have come from the records of rarities. During the 1960s our view of eastern birds was revolutionized in these pages, and our understanding of the palearctic component of the North American avifauna, especially in Alaska, was similarly revolutionized in the 1970s. Each decade also sees the advances of the previous decade extended to large areas and resolved into finer detail. The many eastern birds from the Rockies and the Southwest in the 1970s help us better to understand what California observers pioneered in the 1960s. It is becoming evident that in the 1980s the connection between Asiatic species in Alaska and elsewhere in North America will become clearer. In both of these examples it is important to remember that these newer records consolidate old knowledge rather than break new pathways.

I do not know what the major contribution of *American Birds* to ornithology will be in the 1980s. I hope that it will reflect the increasing sophistication of observers, who now are using field techniques that allow birds to be identified more accurately than just to species. How will our perception of the North American avifauna change as better data on distinctive subspecies, age and sex classes are reported in these pages?

Let me end with some observations and a suggestion for a long term project for which the contributors to *American Birds* are uniquely suited. Observation one: most rarities are birds which really are common—somewhere else. Observation two: most rarities, especially in the autumn, are immature birds. Observation three: this fall productivity of waterbirds in the northern Great Plains was poor. Observation four: this autumn Eared and Western grebes, Wilson's Phalarope and Franklin's Gull were unusually scarce in the East. Question (and project): can year-to-year variation in the numbers of rarities be used to index the overall reproductive success of birds? More specifically, did the scarcity of western landbirds in the east also mean that landbirds in the northern Great Plains were similarly afflicted by the drought? To answer this question two very different sets of data must be assembled over a long time period, probably at least 10 years. One set of data is an annual tally of rarities, in which it is generally sufficient to report that N individuals of species S were found during a season. The Regional Reports already provide a suitable geographic division for these data. Some indication of the effort which produced these reports also is needed: the number of observers is good and the number of observer-hours afield would be even better. This can be the contribution of listers to the project. The second, more difficult data set to acquire is Regional assessments of the reproductive success of birds. The easiest measure to assemble may be the ratio of adult to young birds handled at banding stations, bird observatories and tower kills, as well as through observation of birds with distinctive age classes, like raptors, shorebirds and gulls. As it is unreasonable to expect that the overall breeding success of birds will be the same everywhere, these data must be grouped according to the distribution of nesting populations as well as by Region. I suggest that the former groupings reflect broad biogeographic units, like northern (tundra and tiaga), eastern (deciduous forest), prairie, western montane, western lowland, and tropical species. I leave the disposition of widespread species, like Red-breasted Nuthatch, among such categories to the discretion of others. Gathering these data can occupy those who care less about rarities. I realize that many details would have to be worked out both between and within the Regional level, but this strikes me as the type of project which has appeal to all readers of *American Birds*. The pages of *American Birds* would be an ideal place to publish the ongoing results because the key correlations we seek are at the inter-Regional level. I have no doubt that any efforts in this direction will have unexpected rewards, even if the initial question remains unanswered.

306 Kensington Place,
Syracuse, NY 13210