

AMERICAN BIRDS

Summer 1989



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... from the editor's desk

ANYONE WHO READS THE REGIONAL REPORTS CAREFULLY WILL HAVE NOTICED that some of our longest-term, most experienced editors have retired. To each of them we extend our warmest thanks for their years of devoted service, their excellent job of chronicling bird life season after season, and their thoughtful insights into the avian dynamics of their regions.

When Daniel D. Gibson was a university student in 1967, he became the first *American Birds* Regional Editor for the Alaska Region. At that time precious little was known about the status and distribution of many of Alaska's geographically restricted species. Back in the late 1960s, *Birds of Alaska*, by Gabrielson and Lincoln (1959), was the reference of authority. Gabrielson and Lincoln discussed 312 species of birds known from the state. Now, upward of 430 species are known to have occurred in Alaska. Many of those additions were documented in *American Birds* by our correspondents. Gibson worked diligently to transform raw data into readable, cogent reports. He built a network of careful observers. He stirred our imaginations and opened a window on a little-known world. Under Dan's editorship over these past 22 years, readers have learned about the exciting endemics in Beringia, as well as the stray migrant or casual "Asiatics", most of which can only be seen in this country in Alaska. Gibson has unfailingly provided our readers with views of the spectacular birdlife of this 5800 square mile region. His reporting ability has been astounding. His column has been a delicately balanced enterprise between ultra-rarities and trends. His sterling reports have been sheer pleasures to read. We feel incomparably fortunate and grateful to have had him on our side for so long. Thanks so much, Dan.

Janet Witzeman joined the ranks of the Regional Editors in 1975. As one of the few women editors she brought a new level of cohesion and unity to the Southwest Region. Her reports took on a new intensity and her standards were exceedingly high. She had a special appreciation for the discoveries of her observers and placed the acceptance of new records on a more scientific level. Janet continues in that role as the current Secretary for the Arizona Bird Records Committee. We have always admired her ability to weave together a harmonious combination of careful records and self-restrained and trustworthy observations. Her last report appeared in the Fall 1988 (Vol. 42, No. 4) issue of *American Birds*. We have all benefited from the accuracy and precision of her columns, and her particular viewpoint regarding Arizona bird life. Thanks, Janet, your contribution to *American Birds* has been incalculable.

Phillip W. Mattocks, Jr., 12-year veteran Regional Editor for the Northern Pacific Coast Region, has retired. The Region has an incomparable wealth of marine life whose birds function in its health. Inland there is a profusion of birdlife, on which Phil conscientiously reported. The subtle differences between the biologically productive areas in the Region were always worth note. The cumulative effect of his seasonal summaries is a much more thorough understanding of the birdlife of the Northern Pacific Coast. Phil's ornithological knowledge is respected throughout the Northwest. He epitomizes the excellent field observer and the quality and quantity of his field experience is enviable indeed. He is an accomplished natural historian. For the past dozen years he has created a world in which his contributors have been proud to live. Thank you, Phil, for your dedication, hard work, and almost equal curiosity.

Lyn and Brooks Atherton, after seven years of co-authoring the Florida Regional Report have put aside their word processor, picked up their binoculars, and are out in the field again. The last report of these really active Florida birders was published in Spring 1989 (Vol. 43, No. 1). Since 1982, the Athertons have submitted the Autumn Migration report for Florida. They have been instrumental in the discovery of numerous rare birds and, in exemplary fashion, spread the word along the intricate communications network that links birders there. We have enjoyed their observations and consider their reports real contributions to the development of ornithology in the state. They have always been full of curiosity and eager to explore new areas of interest. Their data gathering has given us the context to understand more about migration patterns in the South. The one real object of Regional Reports is to leave us in a condition of continually asking questions, and in this regard, the Athertons have won their laurels. Thank you for your diligent efforts on our behalf, Lyn and Brooks, we are very grateful.

—Cheers,
SRD

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We did it! Thanks to you, this year's Birdathon was our most successful fundraising event ever! We would like to express our most sincere thanks, and dedicate this issue, to the following persons who so generously supported our 1989 Birdathon. Through their support, we raised over \$25,000 on behalf of American Birds.

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PLATE 9: RESIDENT WOOD-WARBLEDERS

- Granatellus Chats** 1. ROSE-BREADED CHAT, *G. p. pelzelni* (Guianas and e. Amaz.) PAGE 175
- Myioborus Redstarts** Active, *montane* warblers, all with *conspicuous white in tail*; head patterns vary. Typically 2 species present in an area: Slate-throated at lower elevations, a member of either *ornatus* or *brunneiceps* groups above it. PAGE 176
- A. Redstarts with *slaty throat* (yellow in all others). PAGE 177
2. SLATE-THROATED REDSTART, *M. miniatus verticalis*
- B. *Ornatus/melanocephalus* group. Andes from Santa Martas to n. Bol.; *all allopatric*. PAGE 177
3. GOLDEN-FRONTED REDSTART, *M. ornatus chrysops* (mainly Col.)
4. SPECTACLED REDSTART, *M. m. melanocephalus* (s. Col. to Bol.)
5. WHITE-FRONTED REDSTART, *M. albifrons* (w. Venez.)
- Also: Yellow-crowned Redstart, *M. flavivertex* (Santa Marta Mts.)
- C. *Brunneiceps* group. S. Andes and Venez. (especially *tepuis*); *all allopatric*. PAGE 180
6. TEPUI REDSTART, *M. c. castaneocapillus*
- Also: Brown-capped Redstart, *M. brunneiceps* (Andes of Bol. and n. Arg.)
- Paria Redstart, *M. pariae* (ne. Venez.)
- Guaiquinima Redstart, *M. cardonai*; White-faced Redstart, *M. albifacies*
- Geothlypis Yellowthroats** 7. MASKED YELLOWTHROAT, *G. aequinoctialis velata* PAGE 182
- Also: Olive-crowned Yellowthroat, *G. semiflava* (w. Col. and w. Ecu.)
- Common Yellowthroat, *G. trichas* (rare n. migrant)
- Basileuterus Warblers** Dull *plumaged* warblers of lower growth in woodland and forest, especially Andes. Identification tricky: *head and facial patterns* important, voice also crucial. Some tanagers (e.g., *Hemispingus*) quite similar. PAGE 184
- A. The “*citrine*” group (olive and yellow with *no lateral crown striping*); all in Andes. PAGE 185
8. CITRINE WARBLER (w. Venez. to Bol.)
- 8a. *B. l. luteoviridis*; 8b. *B. luteoviridis euophrys*
- Also: Pale-legged Warbler, *B. signatus* (s. Peru to nw. Arg.)
- Black-crested Warbler, *B. nigrocristatus* (Venez. to n. Peru)
- B. The “*gray-headed*” group (sides of head decidedly gray, usually with coronal stripe); mainly in Andes. PAGE 187
- *Entirely yellow below*; note restricted ranges.
9. GRAY-AND-GOLD WARBLER, *B. f. fraseri* (arid w. Ecu. and nw. Peru)
10. GRAY-HEADED WARBLER, *B. griseiceps* (ne. Venez.)
- *Throat* (at least) *dingy white*; lateral head stripes.
11. RUSSET-CROWNED WARBLER (w. Venez. to Bol.)
- 11a. *B. coronatus regulus*; 11b. *B. coronatus castaneiceps*
- Also: White-lored Warbler, *B. conspicillatus* (Santa Marta Mts.)
- Gray-throated Warbler, *B. cinereicollis* (w. Venez. and ne. Col.)
- C. The “*stripe-headed*” group (prominent coronal or lateral head striping); widespread. PAGE 189
- *Bold auricular patch*, or *yellowish buff below*, or both.
12. THREE-STRIPED WARBLER, *B. tristriatus auricularis* (Venez. to Bol.)
- Also: Santa Marta Warbler, *B. basilicus*
- Pirre Warbler, *B. ignotus* (nw. Col.)
- *Bright olive and yellow, including superciliary*.
13. TWO-BANDED WARBLER, *B. b. bivittatus* (s. Peru to Arg. and on *tepuis*)
- Also: Golden-bellied Warbler, *B. chrysogaster* (sw. Col. and w. Ecu.; cen. Peru)
- *Mantle grayish olive; superciliary pale gray to whitish*.
14. GOLDEN-CROWNED WARBLER, *B. culicivorus auricapillus* (widespread)
15. WHITE-BELLIED WARBLER, *B. hypoleucus* (s. Brazil)
- Also: Three-banded Warbler, *B. trifasciatus* (s. Ecu. and nw. Peru)
- *Crown and ear-coverts brick red*.
16. RUFIOUS-CAPPED WARBLER, *B. rufifrons mesochrysus* (n. Col.)
- D. The “*Phaeothlypis*” subgenus; mainly in *lowlands*; semiterrestrial. PAGE 194
- *Plumage* like “*citrine*” group’s but *behavior* of “*Phaeothlypis*.”
- Not illustrated: Flavescent Warbler, *B. flaveolus* (drier lowlands)
- *Underparts grayish to buffy whitish*.
17. WHITE-STRIPED WARBLER, *B. leucophrys* (s. Brazil)
18. WHITE-RIMMED WARBLER, *B. leucoblepharus* (se. Brazil area)
19. BUFF-RUMPED WARBLER, *B. f. fulvicauda* (w. Col. to w. Amazonia)
- Also: River Warbler, *B. rivularis* (lacks tail pattern of 19; e. lowlands)



G. TUDOR

PLATE 10: FLOWER-PIERCERS, ANDEAN CONEBILLS, ETC.

- Diglossa* Flower-piercers *Unmistakable upturned and hooked bills* (in all but 1 species). PAGE 198
Predominantly blue to gray to black, several species with some rufous to chestnut below. Sexes usually alike. Most species in *Andes* (others in n. Venez. mts. and on *tepui*s), primarily at high elevations, mainly in shrubby areas and forest borders. Species-level taxonomy is much disputed; here a relatively narrow species concept is employed.
- A. "Blue" and *tepui Diglossa*. PAGE 198
- Entirely varying *shades of blue*.
 1. BLUISH FLOWER-PIERCER, *D. caerulescens pallida*
 2. MASKED FLOWER-PIERCER, *D. c. cyanea*
 3. DEEP-BLUE FLOWER-PIERCER, *D. g. glauca*

Also: Indigo Flower-piercer, *D. indigotica* (w. Col. and nw. Ecu.)
 - *Tepuis* of s. Venez. and adjacent areas.

Not illustrated: Greater Flower-piercer, *D. major*
 Scaled Flower-piercer, *D. duidae*
- B. *Lafresnayii* and *carbonaria* groups (complex pair of superspecies arranged visually here). PAGE 201
- *Mainly black*, with or without gray shoulders.
 4. GLOSSY FLOWER-PIERCER, *D. lafresnayii* (w. Venez. to n. Peru)

Also: Black Flower-piercer, *D. humeralis* (Col. to n. Peru)
 - *Belly chestnut*; with or without a moustache.
 5. BLACK-THROATED FLOWER-PIERCER, *D. brunneiventris* (Peru and Bol.)

Also: Merida Flower-piercer, *D. gloriosa* (w. Venez.)
 Chestnut-bellied Flower-piercer, *D. gloriosissima* (local in n. Col.)
 - *Belly gray*; with no moustache.
 6. GRAY-BELLIED FLOWER-PIERCER, *D. carbonaria* (Bol.)
 - *Belly black*; *prominent white to rufous moustache*, usually a pectoral band.
 7. MOUSTACHED FLOWER-PIERCER, *D. mystacalis uncinata* (Peru and Bol.)
- C. *Albilatera* group; sexes *differ*. PAGE 205
- Gray to blackish with *white tuft at sides* (latter echoed in brown ♀).
 8. WHITE-SIDED FLOWER-PIERCER, *D. a. albilatera*

Also: Venezuelan Flower-Piercer, *D. venezuelensis* (ne. Venez.)
 - Gray above, *rusty* below (♀ *streaky* below).
 9. RUSTY FLOWER-PIERCER, *D. sittoides decorata*
- Oreomanes* Conebills PAGE 206
 Large; *white on face*; sharply pointed bill. *Polylepis* groves in high Andes.
10. GIANT CONEBILL, *Oreomanes fraseri sturninus*
- Nephelornis* Parduscos PAGE 207
 Plain brownish tanager of *timberline* woodland. Very local in *cen. Peru*.
11. PARDUSCO, *Nephelornis oneillei*
- Xenodacnis* Dacnises PAGE 208
 Active tanager of *high Andean shrubbery* in Peru and s. Ecu., in or near *Polylepis* woodland.
12. TIT-LIKE DACNIS, *Xenodacnis parina petersi*
- Conirostrum* Conebills Small warblerlike tanagers with *slender, sharply pointed bills*. PAGE 208
 Andean forests and shrubbery (*Conirostrum* of lowlands are on Plate 11).
- A. "Typical" cone-bills; sexes similar. PAGE 209
- Grayish above, *prominent L-shaped wing-mark*.
 13. CINEREOUS CONEBILL, *C. c. cinereum*

Also: Tamarugo Conebill, *C. tamarugense* (sw. Peru and n. Chile; rufous brow and throat)
 - Gray above and *all rufous below*.
 14. WHITE-BROWED CONEBILL, *C. ferrugineiventre* (Peru and Bol.)

Also: Rufous-browed Conebill, *C. rufum* (Col.)
 - *Mainly blue above, contrasting dark chest*.
 15. BLUE-BACKED CONEBILL, *C. sitticolor intermedium*
- B. *All dark* with blue or white *crown* (♀ olive with bluish cap). PAGE 211
16. CAPPED CONEBILL, *C. albifrons atrocyaneum*



G. JUDOR

PLATE 18: "RED" TANAGERS

- Piranga Tanagers** PAGE 305
 Typical, "classic" tanagers: arboreal, ♂♂ *mainly red*, ♀♀ *mainly olive or yellow*. Wings often *contrastingly darker*. Some species have rich caroling song.
- A. *Bold white wing-bars* (both sexes); small size. PAGE 305
 1. **WHITE-WINGED TANAGER**, *P. leucoptera venezuelae* (mts., Venez. to Bol.)
- B. *Predominantly rosy red to scarlet* (♂♂) or *olive and yellow* (♀♀). PAGE 306
 2. **HEPATIC TANAGER**, *P. flava saira*
Also: Summer Tanager, *P. rubra* (N. Am. migrant)
 Scarlet Tanager, *P. olivacea* (black or dusky wings; N. Am. migrant)
- C. Unmistakable *scarlet hood*; sexes similar. PAGE 309
 3. **RED-HOODED TANAGER**, *P. rubriceps* (Andes, Col. to Peru)
- Ramphocelus Tanagers** PAGE 309
 Obvious *pale silvery on bill*, with lower mandible typically swollen (especially ♂♂). ♀♀ duller (except 7). Shrubby habitats at edge and in clearings, often near water; widespread in lowlands. Most species conspicuous and commonly seen.
- A. Both sexes with *bright contrasting rump* (vermilion to yellow); ♂ otherwise black. PAGE 309
 4. **FLAME-RUMPED TANAGER**, *R. f. flammigerus* (w. Col. and w. Ecu.)
- B. *Blackish maroon to crimson* with black wings and tail. PAGE 310
 • *R. carbo* superspecies; ♀ pinkish brown.
 5. **SILVER-BEAKED TANAGER**, *R. c. carbo*
 6. **BRAZILIAN TANAGER**, *R. b. bresilius* (e. Brazil)
Also: Crimson-backed Tanager, *R. dimidiatus* (w. Col. and nw. Venez.)
 Huallaga Tanager, *R. melanogaster* (local in e. Peru)
- *Black mask and back*; sexes similar.
 7. **MASKED CRIMSON TANAGER**, *R. nigrogularis* (w. Amazonia)
- Calochaetes Tanagers** PAGE 313
 Sexes alike. Arboreal in subtropical zone forests on *e. slope of Andes from Col. to Peru*.
 8. **VERMILION TANAGER**, *C. concinneus*
- Habia Ant-Tanagers** PAGE 314
 Rather inconspicuous tanagers of forest and woodland undergrowth. Only 1 species (Red-crowned) across most of S. Am., others being entirely *Colombian*. Often in small groups; loud, scratchy calls may attract attention.
- A. Lack obvious crests; both sexes with *paler throats*. PAGE 314
 9. **RED-CROWNED ANT-TANAGER**, *H. rubica peruviana*
Also: Red-throated Ant-Tanager, *H. fuscicauda*
- B. *Conspicuous scarlet crest*; sexes similar. PAGE 316
 10. **SOOTY ANT-TANAGER**, *H. gutturalis*
Also: Crested Ant-Tanager, *H. cristata* (all reddish)
- Rhodinocichla Thrush-Tanagers** PAGE 316
 Aberrant, *semiterrestrial*, shy tanager of dry woodland undergrowth. Note mimidlike bill. Underparts and eyestripe ochraceous in ♀. N. Col. and Venez.
 11. **ROSY THRUSH-TANAGER**, *R. rosea harterti*

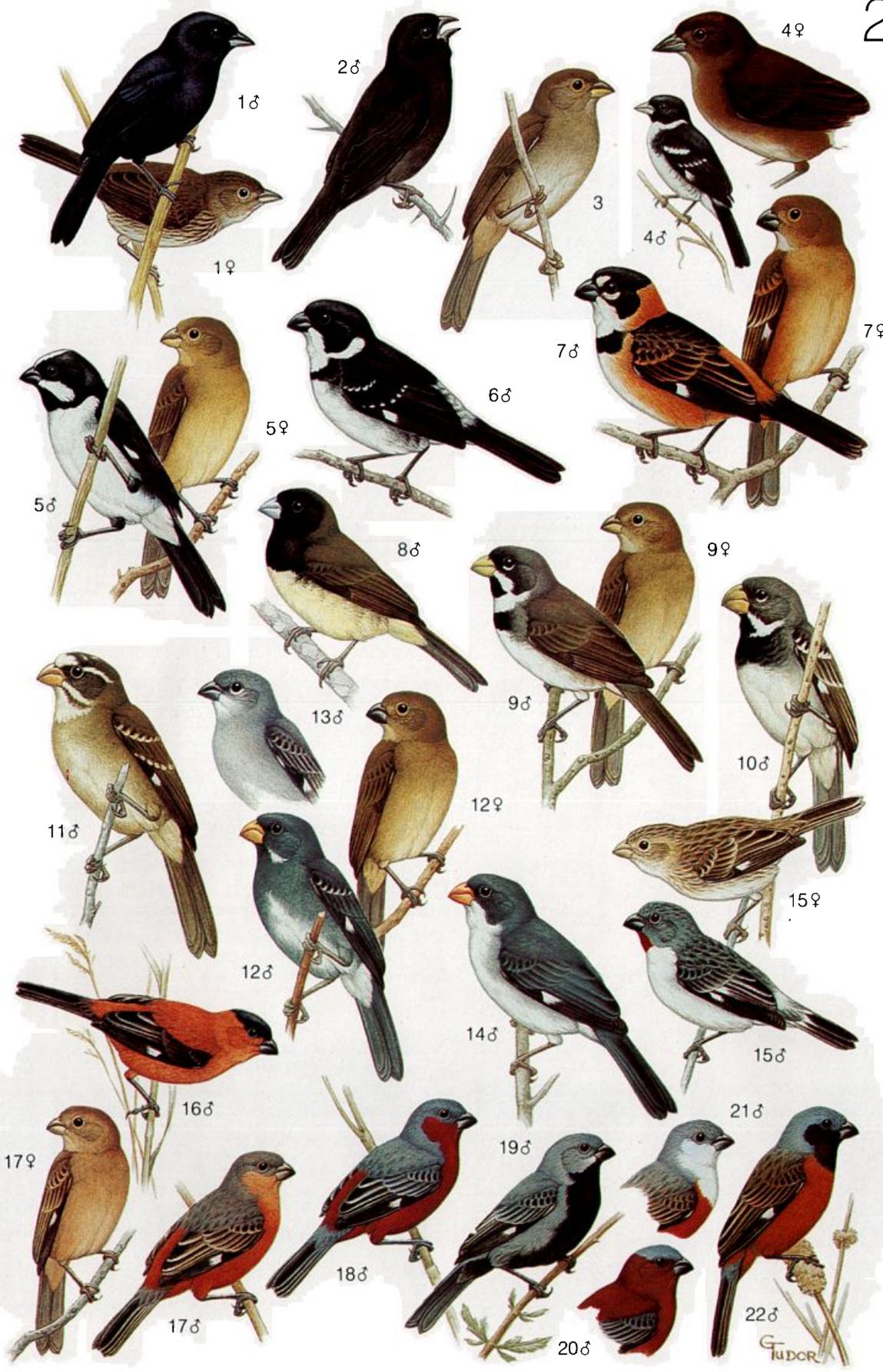


TUDOR

PLATE 26: SEEDEATERS & GRASSQUITS

- Volatinia* Grassquits Abundant in grassy areas and roadsides. Note *pointed bill*. PAGE 403
1. BLUE-BLACK GRASSQUIT, *V. j. jacarina*
- Tiaris* Grassquits PAGE 404
Bill somewhat narrower and more pointed than Sporophila's. Open areas in lowlands.
2. SOOTY GRASSQUIT, *T. fuliginosa fumosa* (local in Col., Venez., c. Brazil)
 3. DULL-COLORED GRASSQUIT, *T. o. obscura* (lower Andean slopes; local)
- Also*: Black-faced Grassquit, *T. bicolor* (Caribbean lowlands)
 Yellow-faced Grassquit, *T. olivacea* (mainly Col.)
- Dolospingus* Seedeaters PAGE 407
 Somewhat larger, more conical bill than *Sporophila's*. Sandy soil areas of s. Venez. region.
4. WHITE-NAPED SEEDEATER, *D. fringilloides*
- Sporophila* Seedeaters Numerous genus of small finches found in open to semiopen areas PAGE 407
 of lowlands, most diverse in s.-cen. S. Am.; a few favor wooded habitats. Often in large mixed flocks when not breeding. *Bill thick and stubby*. ♀♀ hard to identify; *only ♂♂ diagnosed here*.
- A. *Boldly patterned in black and white (or rusty)*; bill black. PAGE 408
5. LINED SEEDEATER, *S. l. lineola*
 6. VARIABLE SEEDEATER, *S. americana murallae* (south to Amazonia)
 7. RUSTY-COLLARED SEEDEATER, *S. collaris melanocephala* (s. S. Am.)
- Also*: Lesson's Seedeater, *S. bouvronides* (Guianas to Amazonia; like 5)
- B. "Hooded" group; *lack face pattern*; *bill bluish*. PAGE 411
8. YELLOW-BELLIED SEEDEATER, *S. n. nigricollis*
- Also*: Dubois' Seedeater, *S. ardesiaca* (se. Brazil)
 Hooded Seedeater, *S. melanops* (s.-cen. Brazil; very rare)
 Black-and-white Seedeater, *S. luctuosa* (Andes; all black above)
- C. "Collared" group; *gray upperparts*; *bill yellowish*. PAGE 413
9. DOUBLE-COLLARED SEEDEATER, *S. c. caerulescens* (s.-cen. S. Am.)
 10. PARROT-BILLED SEEDEATER, *S. p. peruviana* (arid Pacific)
- Also*: White-throated Seedeater, *S. albogularis* (ne. Brazil)
- D. *Predominantly gray to olive*; bill yellow or black. PAGE 414
11. BUFFY-FRONTED SEEDEATER, *S. frontalis*, subadult (se. Brazil area)
 12. SLATE-COLORED SEEDEATER, *S. schistacea longipennis* (local)
 13. PLUMBEOUS SEEDEATER, *S. p. plumbea* (local in savannas)
- Also*: Gray Seedeater, *S. intermedia* (nearest 12; n. S. Am.)
 Temminck's Seedeater, *S. fulcirostris* (like 12; se. S. Am.)
 Drab Seedeater, *S. simplex* (like 3 with wing-bars; w. Peru and sw. Ecu.)
- E. *Sharply bicolored* (Bol. race *black* above); *bill yellow*. PAGE 418
14. WHITE-BELLIED SEEDEATER, *S. l. leucoptera* (s.-cen. S. Am.)
- F. *Both sexes streaked above* and with white at base of tail. PAGE 418
15. CHESTNUT-THROATED SEEDEATER, *S. telasco* (Pacific lowlands)
- Also*: Tumaco Seedeater, *S. insulata* (mostly rufous below; sw. Col.; rare)
- G. Small; *cinnamon to chestnut (or black) below*. Many local or rare. PAGE 419
- *Black cap*; otherwise mostly cinnamon (whiter in young birds).
 - 16. CAPPED SEEDEATER, *S. b. bouvreuil* (savannas of e. S. Am.)
 - *Gray (usually) or black above*; tawny to rufous below *and on rump*.
 - 17. TAWNY-BELLIED SEEDEATER, *S. hypoxantha* (s.-cen. S. Am.)
 - 18. RUFIOUS-RUMPED SEEDEATER, *S. hypochroma* (s.-cen. S. Am.; rare)
- Also*: Ruddy-breasted Seedeater, *S. minuta* (n. S. Am.; much like 17)
 Black-and-tawny Seedeater, *S. nigrorufa* (e. Bol., w. Mato Grosso; rare)
- *Entirely gray above*; chestnut or black on *median* underparts.
 - 19. BLACK-BELLIED SEEDEATER, *S. melanogaster* (se. Brazil)
- Also*: Chestnut-bellied Seedeater, *S. castaneiventris* (Amazonia)
- "Chestnut" and "Marsh" groups; note *gray cap, contrasting throat*, or both.
 - 20. CHESTNUT SEEDEATER, *S. cinnamomea* (s.-cen. S. Am.; rare)
 - 21. MARSH SEEDEATER, *S. palustris* (s.-cen. S. Am.; rare)
 - 22. DARK-THROATED SEEDEATER, *S. ruficollis* (s.-cen. S. Am.)
- Also*: Narosky's Seedeater, *S. zelichi* (ne. Arg.; very rare)

NOTE: ♂ White-naped Seedeater shown at smaller scale.



continued from page 210

tribution and abundance of birds of the British Isles is testimony to the long tradition and organization of the amateurs of the U. K., where there are so many birders that the channeling of them toward the collection of information has been a resounding success.

I consider one of the biggest challenges in ornithology today the harnessing of the energy of these thousands of birders in North America. Short of purchasing TV ads, we need to use words both printed and spoken wherever possible to communicate the continued need—more now than ever—for amateurs and professionals to work together. Pete Myers hit the nail on the head again in his same column in Spring 1989 (Vol. 43, No. 1), in which he emphasized the great need for both more knowledge and more cooperation if we wish to conserve our avian heritage.

What can professional ornithologists and ornithological and birding organizations communicate to amateurs, besides facts and speculations about birds?

1. The importance of keeping field notes cannot be overstressed; the article by Van Remsen in the September, 1977 *American Birds* should be reprinted in every local bird newsletter. By keeping field records, birders are providing present and future chroniclers of bird life with baseline data of great importance. I recently noted larger-than-usual numbers of Cedar Waxwings in Seattle in late winter, queried the members of a class I was teaching, and found that several others had noted the same "invasion." None of them thought it worth reporting, as the species is common for much of the year here. If all of us had taken notes, a phenomenon would have been documented, even to the level of preferred fruiting trees.

2. Even more critical, field notes should be submitted to and collected by those committed to publishing such information. This is especially critical on an international scale. Thousands of North American and European birders, many of them expert observers, visit tropical countries

and return with information that, if assembled, would be of inestimable value in determining the status of poorly known species and whole avifaunas. Think of what we would know if there had been a *Neotropical Birds* in existence for a decade or two.

3. Birders should be motivated toward an interest in birds beyond the superficial. Imagine the benefits if the energy put into searching for "year birds" by thousands of observers all over North America was for one year turned to the daily recording of numbers of birds in one nearby park or woodlot. Because of the emphasis on species lists in birding, our knowledge of bird distribution will doubtlessly be advanced and retarded just as species are split and lumped. Look at the surge of interest in Clark's Grebe once it received the hallowed status of species, not to mention the sudden increase in records of "true" Arctic Loons on the Pacific coast. Did anyone look at throat color of loons when *viridigularis* was only a possibly vagrant subspecies?

4. There are still many things to be learned about birds by collecting

them, and judicious collecting is as necessary a part of ornithology as both intensive and extensive field observation. To love birds is surely to care for the well being of their species, and the knowledge gained by sampling populations aids us in the area of conservation and management as well as basic science.

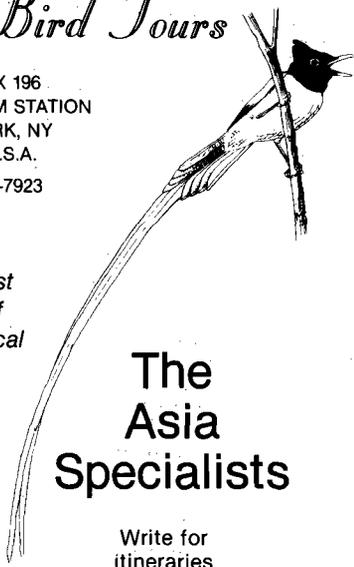
5. Finally, the divergence among groups of people that have in common their great interest in birds should be minimized as much as possible by constructive communication. The Washington Ornithological Society was recently founded as much to bridge this gap as to disseminate bird information, and there should be much concern about how to accomplish this goal on local, regional, national, and international levels. No matter what our diverse reasons for tuning in to birds, we all must care about them together because they're the only ones we've got.

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J P Myers' column (Winter 1988, Vol. 42, No. 5) points out some interesting problems with species concepts and their application to conservation biology and field ornithology. It is important to realize, however, that the topics Myers integrates are much more complex than his simple summaries may indicate.

Biochemical methods are now widely used in studies of avian systematics. Techniques like DNA-DNA hybridization can illuminate higher-order phylogenetic relationships but do not provide the resolution necessary to distinguish between lower-order taxa, such as species. The mitochondrial DNA analysis Myers mentions was developed because it can clarify relationships between species. Mitochondrial DNA (mtDNA) is inherited only from female parents. The mitochondria in the egg give rise to all the mitochondria in a female's progeny. Since mtDNA cannot be changed through recombination (as is the case with nuclear DNA which is a combination of genetic material from both parents) any differences in mtDNA of individuals from the same lineage should be the result of random mutation. If the average rate of mutation is known, as well as the difference in mtDNA between related taxa, it should be possible to estimate the

length of time since the divergence between the taxa took place.

The seemingly mystical "chemical procedures" Myers refers to involve allowing specific enzymes to cut the DNA into smaller fragments which are then separated by measuring how far they move on a gel surface when exposed to an electrical field. Fragments move different distances because they are composed of unique sets of molecules that give the fragment a particular electrical charge. Like any complicated technique, the analysis and interpretation of data can be complicated especially when the procedure is still being refined, as is the mtDNA process. There has been considerable debate over what the proper procedures and methods of analysis of biochemical data are when used in studies of systematics. Suffice it to say that the simple "facts" Myers has distilled from the mtDNA literature are actually extremely complex.

The discussion of the Biological Species Concept (BSC) and the Phylogenetic Species Concept (PSC) in the column is interesting but also greatly simplified. One of the major weaknesses of the BSC is how to decide whether geographically isolated populations are reproductively isolated as well. Scrub Jays in Florida look and act differently from those in

the west and are separated by thousands of miles. Are they different species? This is difficult to decipher because whether or not the populations are reproductively isolated cannot be discerned. The BSC does make use of a relevant biological fact: a population that cannot exchange genetic material with other, similar populations is a discrete gene pool.

There are problems with the PSC as well. Perhaps the most obvious is in the resolution of differences between populations. For instance, some differences could be due to environmental influences. In Red-winged Blackbirds, northern birds are larger than southern birds, but the difference is not genetic (James; *Science* 221: 184-186). And what is to be done with populations that show genetically based differences at the extremes of their range with a gradual change in-between? Furthermore, birds, like humans, show individual variation. A study of mtDNA of Great Tits in Sweden showed a surprising number of different mtDNA lineages represented in a local population (Tegelstrom; *Biochem. Genet.* 25: 95-110). Is each lineage a species?

Whatever the end result of current ideas concerning species classification, it should be remembered that the reason any classification is diffi-

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cult is because evolution is a dynamic process. When we classify we are looking at a small slice of time. Take for instance the case of the Black-capped and Carolina Chickadee. They interbreed at many of their contact zones. Obviously, they have not developed full reproductive isolation. There are basically four possible evolutionary outcomes here. One species could flood the other with its genes, they could develop reproductive isolating mechanisms, they could remain stable, continuing to hybridize along the contact zone, or the hybrids could form a third species. We don't know what the outcome will be, but we do know that there are two populations each with its own recognizable characteristics and evolutionary lineage. The reality of the situation will not change because we decide to call them one species or two.

The PSC changes not the biological world, but the way we organize that world. It also focuses on evolutionary processes differently from the BSC. Myers' statement that "Our landscape may be littered with far more species than anyone would have dared contemplate," is a misunderstanding of the applicability of the PSC. The avian world will not suddenly be any different because we change our definition of a species. Anyone who has picked

up a field guide knows that there are differences between populations of birds within what we now call a species. The difference is that under the PSC each population would have its own name.

The idea that populations of organisms that are different from other populations should be saved is a good one and has already been applied to bird conservation. The California subspecies of Least Tern was afforded federal protection before inland and eastern populations. Many states give special legal protection to small populations of birds at least in part because of the likelihood that such populations are genetically different from populations in other areas.

The decision on how great the magnitude of the difference must be before action is taken is a difficult one. It is easy to imagine the Endangered Species Act becoming a ridiculous and unworkable law as many small populations were classified as species under the PSC. Of course, it isn't too surprising that biology and politics don't look at things in the same way.

Perhaps the way decisions are made on whether a bird population deserves legal protection should be reconsidered. What if, in Myers' Marbled Murrelet example, scientists found that the difference in nesting behavior

was not genetically based and there were no other differences? Does that mean that the tree-nesting population of these birds that is in danger of extirpation should not be protected? I hope not. The loss of a species or unique population generally signals either the loss or degradation of an ecosystem. Such losses should be prevented. Large behavioral differences between populations that are not genetically based are analogous to human cultural differences. Cultures are worth saving too.

I hope that Myers' pessimistic outlook on the future of ornithology did not discourage many amateur or professional ornithologists. There is no doubt that some areas of ornithology may become less accessible to amateurs as well as professionals. However, neither current technology nor modern concepts can replace the role of the amateur ornithologist in helping to decipher and discover more about the enormous complexity of the avian world.

Jeff Wells,
Field of Ecology &
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CONTENTS

SUMMER 1989, VOLUME 43, NUMBER 2

- 200 . . . from the editor's desk
Susan Roney Drennan
- 203 The Practiced Eye—Comparing the Screech-Owls
Kenn Kaufman and Rick Bowers
- 207 Facts, Inferences, and Shameless Speculations
J.P. Myers
- 210 Retorts, Reflections, and Thoughtful Refutations
Readers' Column
- 211 American Birding
Pete Dunne
- 215 Of Dead Zones and the Sound of Silence
M.E. Isleib
- 218 The Exxon Valdez oil spill: first impressions and commentary
Stanley E. Senner
- 221 A major advancement for neotropical ornithology
James V. Remsen, Jr.
- 230 Regional Reports Pictorial Highlights
Winter 1988–1989
- 234 ICBP: Acid rain and birds: how much proof is needed?
Brent A. Mitchell
- 242 Giants of the past: Maurice Broun
Michael Harwood
- 248 Hawk Mountain Sanctuary Association, Pennsylvania
Stanley E. Senner
- 254 Great Spotted Woodpecker at Attu Island, Alaska: first record
for the Near Islands and for North America
George F. Wagner
- 258 First photographic documentation of a live White-collared Swift
(*Streptoprocne zonaris*) from the United States
Ted L. Eubanks, Jr. and James G. Morgan
- 260 Bird populations and environmental changes: can birds
be bio-indicators?
Stanley A. Temple and John A. Wiens
- 271 The Changing Seasons—Winter 1988–1989
Kenn Kaufman
- 376 Birders' Bookshelf
- 378 Announcements
- 380 Marketplace

The Winter Season December 1, 1988—February 28, 1989

- 277 Atlantic Provinces Region
Ian A. McLaren
- 282 New England Region
Blair Nikula
- 287 Quebec Region
*Yves Aubry, Michel Gosselin, and
Richard Yank*
- 289 Hudson/Delaware Region
*Robert O. Paxton, William J. Boyle, Jr.,
and David A. Cutler*
- 294 Middle Atlantic Coast Region
Henry T. Armistead
- 299 Southern Atlantic Coast Region
(Fall 1988 Report)
Harry E. LeGrand, Jr.
- 303 Florida Region
John C. Ogden
- 307 Ontario Region
Ron D. Weir
- 312 Appalachian Region
George A. Hall
- 315 Western Great Lakes Region
David J. Powell
- 319 Middlewestern Prairie Region
Bruce G. Peterjohn
- 323 Central Southern Region
David P. Muth
- 328 Northern Great Plains Region
David O. Lambeth
- 330 Southern Great Plains Region
Joseph A. Grzybowski
- 333 Texas Region
Greg W. Lasley and Chuck Sexton
- 340 Northwestern Canada Region
Chris Siddle
- 342 Northern Rocky Mountain—
Intermountain Region
Thomas H. Rogers
- 345 Mountain West Region
Hugh E. Kingery
- 348 Southwest Region
*Gary Rosenberg, David Stejskal,
and John P. Hubbard*
- 354 Alaska Region
T.G. Tobish and M.E. Isleib
- 356 Northern Pacific Coast Region
Bill Tweit
- 361 Middle Pacific Coast Region
*David G. Yee, Stephen F. Bailey,
Alan D. Barron, and Richard A. Erickson*
- 364 Southern Pacific Coast Region
Guy McCaskie
- 369 Hawaiian Islands Region
Robert L. Pyle
- 371 West Indies Region
Robert L. Norton

Front cover photograph: Male Lapland Longspur (*Calcarius lapponicus*).
Photograph/Jim Battles.

Back cover photograph: Male Hooded Oriole (*Icterus cucullatus*) Photograph/
Brent R. Paull, American West Photography

