

INDEX TO VOLUME 93

A

Abundance, 266-278, 399-408
Accipiter cooperii, 191-193, 659-665
Acid sensitive lakes, 286-294
Acidification, 286-294
Acorn preference, 438-442
Activity patterns, 916-925
Adaptive variation, 424-432
Aegolius acadicus, 55-61
Afton, Alan D., and C. Davison Ankney. Nutrient-reserve dynamics of breeding Lesser Scaup: a test of competing hypotheses, 89-97
Afton, Alan D., see Ankney, C. Davison
Agapornis roseicollis, 302-317
Age-related differences, 44-48, 884-891
Age-specific survival, 817-824
Aegialius phoeniceus, 318-329, 365-373, 747-752, 967-974, 1013-1016
 thilius, 175-176
 tricolor, 365-373
Aggressive behavior, 916-925, 1010-1012
Aimophila botterii, 365-373
Aix sponsa, 817-824
Alala, see *Corvus hawaiiensis*, 676-682
Alaska, 180-184, 503-515
Albatross, Wandering, see *Diomedea exulans*
Alcidae, 486-495, 943-951
Aleutian Islands, 840-852
Alisauskas, Ray T., see Ankney, C. Davison
Alisterus scapularis, 302-317
Allen's Rule, 712-723
Allometric relation, 612-629
Allozymes, 98-105, 295-301, 825-839
Ammodramus caudacutus, 365-373
 maritimus, 365-373
 savannarum, 365-373
Analysis of variance, 200-203, 1023-1025
Anas acuta, 582-590
 clypeata, 582-590, 811-816
 discors, 811-816
 oustaleti, 38-43
 platyrhynchos, 779-781, 811-816
 rubripes, 189-191
 strepera, 799-810
Ani, Groove-billed, see *Crotophaga sulcirostris*
Ankney, C. Davison, Alan D. Afton, and Ray T. Alisauskas. The role of nutrient reserves in limiting waterfowl reproduction, 1029-1032
Ankney, C. Davison, and Ray T. Alisauskas. Nutrient-reserve dynamics and diet of breeding female Gadwalls, 799-810
Ankney, C. Davison, see Afton, Alan D.
Annett, Cynthia, see Stewart, David J.
Antbird, Stripe-backed, see *Myrmorchilus strigilatus*
Aphelocoma coerulescens, 354-364, 926-934, 1020-1023
 ultramarina, 448-452
Aphrastura spinicauda, 175-176

Aquatic invertebrates, 582-590
Argentina, 443-445, 445-446
Arizona, 952-966
Arkansas, 438-442
Arnold, Todd W. Intraclutch variation in egg size of American Coots, 19-27
Arnold, Todd W., see Martin, Pamela A.
Arnold, Todd W., and Frank C. Rohwer. Do egg formation costs limit clutch size in waterfowl? A skeptical view, 1032-1038
Artificial nests, 753-755
Asio flammeus, 295-301
 otus, 55-61, 295-301
Askins, Robert A., see Ewert, David D.
Aspen, Quaking, 473-485
Astheimer, Lee B., Embryo metabolism and egg neglect in Cassin's Auklets, 486-495
Asynchronous hatching, 683-693
Athene noctua, 295-301
Auklet, Cassin's, see *Ptychoramphus aleuticus*
Austen, Madeline J. W., and Paul T. Handford. Variation in the songs of breeding Gambel's White-crowned Sparrows near Churchill, Manitoba, 147-152
Avery, Graham, see Cooper, John
Avocet, American see *Recurvirostra americana*
Aythya affinis, 89-97
 americana, 340-345

B

Baird, Pat Herron, Optimal foraging and intraspecific competition in the Tufted Puffin, 503-515
Baker, Myron Charles, Jeannette T. Boylan, and Christopher A. Goulart. Effects of gargle vocalizations on behavior of Black-capped Chickadees, 62-70
Balda, Russell P., and Wolfgang Wiltschko. Caching and recovery in Scrub Jays: transfer of sun-compass directions from shaded to sunny areas, 1020-1023
Banding, 279-285
Barnardius zonarius, 302-317
Bayer, Range D., Roy W. Lowe, and Robert E. Loeffel. Persistent summer mortalities of Common Murres along the Oregon central coast, 516-525
Beached birds, 516-525, 724-730
Beak coloration, 448-452
Beal, Kathleen G., and Harry J. Khamis. A problem in statistical analysis: simultaneous inference, 1023-1025
Beal, Kathleen G., and Harry J. Khamis. Reply to Quinn and Keough, 202-203
Bee-eater, see *Merops bullockoides*
Beehler, Bruce M., and R. J. Swaby. Phylogeny and biogeography of the Ptiloris Riflebirds (Aves: Paradisaeidae), 738-745
Behavior, 82-88, 177-180, 755-757, 777-779
Bekoff, Marc, see Scott, Abby C.
Beletsky, Les D., see Harms, Kyle E.

- Belthoff, James R., and Sidney A. Gauthreaux, Jr. Aggression and dominance in House Finches, 1010–1012
- Belthoff, James R., and Sidney A. Gauthreaux, Jr. Partial migration and differential winter distribution of House Finches in the eastern United States, 374–382
- Bengtson, John L., see Croll, Donald A.
- Benson, Karen L., see Benson, Robert H.
- Benson, Robert H., and Karen L. Benson. A reply to Scott and Garton, 470–472
- Bergin, Timothy M. A comparison of goodness-of-fit tests for analysis of nest orientation in Western Kingbirds (*Tyrannus verticalis*), 164–171
- Bergmann's Rule, 712–723
- Bielefeldt, John, see Rosenfield, Robert N.
- Bildstein, Keith L., Peter C. Frederick, and Marilyn G. Spalding. Feeding patterns and aggressive behavior in juvenile and adult American Flamingos, 916–925
- Bill depth, 516–525
- Biodiversity, 840–852
- Biogeography, 98–105, 738–745, 1016–1019
- Biological species, 987–1000
- Blackbird, Brewer's, see *Euphagus cyanocephalus*
- Red-winged, see *Agelaius phoeniceus*
- Tricolored, see *Agelaius tricolor*
- Yellow-headed, see *Xanthocephalus xanthocephalus*
- Yellow-winged, see *Agelaius thilius*
- Bleier, William J., see Twedt, Daniel J.
- Blood sampling, 747–752
- Blue, Roberta J., see Repasky, Richard R.
- Blue Bonnet, see *Northiella haematogaster*
- Bluebird, Eastern, see *Sialia sialis*
- Mountain, see *Sialia currucoides*
- Western, see *Sialia mexicana*
- Bluebirds, 793–798
- Body size, 644–658, 526–537, 811–816
- Body temperature, 538–545
- Bonasa umbellus*, 473–485
- Borgia, Gerald, and John C. Wingfield. Hormonal correlates of bower decoration and sexual display in the Satin Bowerbird (*Ptilonorhynchus violaceus*), 935–942
- Bowen, Bonnie S., Rolf R. Koford, and Sandra L. Vehr-encamp. Seasonal pattern of reverse mounting in the Groove-billed Ani (*Crotophaga sulcirostris*), 159–163
- Bower decoration, 935–942
- Bowerbird, Satin, see *Ptilonorhynchus violaceus*
- Bowerbirds, 935–942
- Bowing display, 191–193
- Boylan, Jeannette T., see Baker, Myron Charles
- Brachyramphus marmoratus*, 330–339
- Bradley, Mark, and Lynn W. Oliphant. The diet of Peregrine Falcons in Rankin Inlet, Northwest Territories: an unusually high proportion of mammalian prey, 193–197
- Breebaart, Loes, see St. Louis, Vincent L.
- Breeding, 71–81, 159–163, 346–353, 409–417, 731–737, 762–765
- inhibition, 354–364
- season, 458–461
- success, 555–562
- Brennan, Leonard A., and Michael L. Morrison. Long-term trends of Chickadee populations in western North America, 130–137
- Brood, 779–781
- Brood adoption, 630–636
- parasitism, 106–124, 340–345, 461–462, 967–974
- size, 817–824, 943–952
- Bubo bubo*, 295–301
- Bud chemical composition, 473–485
- Budgerigar, see *Melopsittacus undulatus*
- Buehler, David A., Timothy J. Mersmann, James D. Fraser, and Janis K. D. Seegar. Differences in distribution of breeding, nonbreeding, and migrant Bald Eagles on the northern Chesapeake Bay, 399–408
- Bunting, Lazuli, see *Passerina amoena*
- Painted, see *Passerina ciris*
- Burger, Joanna, and Michael Gochfeld. Reproductive vulnerability: parental attendance around hatching in Roseate (*Sterna dougallii*) and Common (*S. hirundo*) Terns, 125–129
- Burger, Joanna, and Michael Gochfeld. Human activity influence and diurnal and nocturnal foraging of Sanderlings (*Calidris alba*), 259–265
- Butcher, Gregory S. Mate choice in female Northern Orioles with a consideration of the role of the black male coloration in female choice, 82–88
- Buteo jamaicensis*, 1007–1012
- lagopus*, 180–184
- regalis*, 1007–1012
- swainsoni*, 1007–1012

C

- Cacatua galerita*, 302–317
- roseicapilla*, 302–317
- Cache, 458–461, 1020–1023
- Calcium, 458–461
- Calder, William A., see Inouye, David W.
- Calidris alba*, 259–265
- California, 330–339, 582–590, 952–966
- California's Central Valley, 266–278
- Calyptorhynchus funereus*, 302–317
- Canary, Common, see *Serinus canarius*
- Cannibalism, 184–185
- Cape May, 55–61
- Caprimulgus europaeus*, 295–301
- Caracara, Crested, see *Polyborus plancus*
- Cardiff, Steven W., see Zink, Robert M.
- Carotenoids, 987–1000
- Carpodacus mexicanus*, 374–383, 1010–1012
- Cavity dynamics, 781–783
- Cavity-nesting birds, 666–675, 781–783
- Caziani, Sandra M., and Jorge J. Protomastro. Nest and eggs of the Stripe-backed Antbird (*Myrmorchilus strigilatus*), 445–446
- Census techniques, 279–285, 676–682
- Central place foraging, 503–515
- Cephus columba*, 765–768, 943–951
- Chaco woodland, 445–446
- Chandler, C. Ray, see Mulvihill, Robert S.
- Channel Islands, 773
- Chapman, Angela, and Kenneth V. Rosenberg. Diets of four sympatric Amazonian Woodcreepers (*Dendrocolaptidae*), 904–915
- Charadrius melodus*, 753–755

- Charmosyna papou*, 302–317
 Chek, Andrew A., and Raleigh J. Robertson. Infanticide in female Tree Swallows: a role for sexual selection, 454–457
Chen caerulescens atlantica, 701–711
 Chesapeake Bay, 399–408
 Chick energetics, 612–629
 growth, 943–952
 Chickadee, Black-capped, see *Parus atricapillus*
 Carolina, see *Parus carolinensis*
 Chestnut-backed, see *Parus rufescens*
 Mountain, see *Parus gambeli*
 Chile, 175–176
 Christidis, L., R. Schodde, D. D. Shaw, and S. F. Maynes. Relationships among the Australo-Papuan Parrots, Lorikeets, and Cockatoos (Aves: Psittaciformes): protein evidence, 302–317
 Christmas Bird Count, 130–137
 Circular distribution, 164–171
Clamator glandarius, 49–54
 Clark, Robert G., see Gloutney, Mark L.
 Clinal variation, 987–1000
 Clutch size, 106–124, 447–448, 683–693, 799–810, 817–824, 892–903, 1026–1029, 1029–1032, 1032–1038
 Clutch-size limitation, 89–97
 CO₂ production, 546–554
 Coahuila, 469–470, 470–472
Coccythraustes vespertinus, 71–81, 694–700
 Cockatoo, Sulphur-crested, see *Cacatua galerita*
 Yellow-tailed Black, see *Calyptorhynchus funereus*
 Coloniality, 666–675
 Colony, 125–129, 555–562
 Color, 409–417, 987–1000
 bands, 1013–1016
 phases, 409–417
 polymorphism, 383–389
 Colorado, 781–783
Columba livia, 546–554
 Communal breeding, 159–163
 Compartmentalization of injury, 781–783
 Competition, 184–185
Compsohalieu perspicillatus, 840–852
 Computer simulation, 164–171
Coniferyl benzoate, 473–485
 Conspecific nest parasitism, 967–974
 Cooper, John, Leslie G. Underhill, and Graham Avery. Primary molt and transequatorial migration of the Sooty Shearwater, 724–730
 Cooper Ornithological Society annual meeting, 1041–1044
 Cooperative breeding, 159–163
 Coot, American, see *Fulica americana*
 Copo Reserve, 445–446
 Copulation, 159–163, 433–437, 859–863
 Coral reefs, 383–389
 Cormorant, Brandt's, see *Phalacrocorax penicillatus*
 Double-crested, see *Hypoleucus auritus* and *Phalacrocorax auritus*
 Great, see *Phalacrocorax carbo*
 Japanese, see *Phalacrocorax capillatus*
 Palla's, see *Compsohalieu perspicillatus* and *Phalacrocorax perspicillatus*
 Cormorants, 44–48, 840–852
 Corticosterone, 354–364, 935–942
 Corvidae, 926–934
Corvus corax, 755–757, 788–789
 hawaiiensis, 676–682
 Costa Rica, 447–448
 Costs of reproduction, 683–693
 Cottonwood bottomlands, 781–783
Coturnix japonica, 28–37
 Courtship, 859–863
 Cowbird, Brown-headed, see *Molothrus ater*
 Crane, Canadian Sandhill, see *Grus canadensis rowani*
 Crane, Greater Sandhill, see *Grus canadensis tabida*
 Creelman, E., and A. E. Storey. Sex differences in reproductive behavior of Atlantic Puffins, 390–398
 Crimson Rosella, see *Platycercus elegans*
 Croll, Donald A., Anthony J. Gaston, and David G. Noble. Adaptive loss of mass in Thick-billed Murres, 496–502
 Croll, Donald A., Steven D. Osmek, and John L. Bengtson. An effect of instrument attachment on foraging trip duration in Chinstrap Penguins, 777–779
Crotophaga sulcirostris, 159–163
 Crow, Hawaiian, see *Corvus hawaiiensis*
 Cuckoo, Great Spotted, see *Clamator glandarius*
 Culmen length, 516–525
Cyanocitta cristata, 438–442
Cyanoramphus novaezelandiae, 302–317
Cyclopsitta guillemerti, 302–317
- D**
- Day, Robert H., see DeGange, Anthony R.
 DeGange, Anthony R., and Robert H. Day. Mortality of seabirds in the Japanese land-based gillnet fishery for salmon, 251–258
 Demography, 765–768
 Demong, Natalie J., see Emlen, Stephen T.
Dendrocincla fuliginosa, 904–915
 merula, 904–915
Dendroica caerulescens, 575–581
 petechia, 712–723
 Density, 555–562
Derophtus accipitrinus, 177–180
 Derrickson, Kim C., and Ian G. Warkentin. The role of egg-capping in the evolution of eggshell removal, 757–759
 Desenne, Philip A., see Strahl, Stuart D.
 Determinate laying, 106–124
 Dialects, 147–152, 644–658
 Diet, 177–280, 193–197, 799–810, 975–986
 Dietary calcium, 286–294
 Differential migration, 374–383, 694–700
 Digestive organs, 799–810
Diomedea exulans, 731–737
 Dispersal, 466–468, 926–934
 Distraction display, 12–18
 Distress calls, 637–643
 Distribution, 175–176, 399–408, 762–765, 825–839, 952–966
 Dittmann, Donna L., see Zink, Robert M.
 Dive-depth relationship, 44–48
 Diving, 44–48
 Doerr, Phillip D., see Repasky, Richard R.
 Dominance, 62–70

- Doubly labeled water, 138–146, 346–353, 546–554, 598–611, 793–798
 Douglas-fir forest, 563–574
 Drent, Rudolf, see Klaassen, Marcel
 Driftnet fisheries, 251–258, 1042
 Drobney, Ronald D. Nutrient limitation of clutch size in waterfowl: is there a universal hypothesis, 1026–1029
 Droge, Dale L., Patricia Adair Gowaty, and Wesley W. Weathers. Sex-biased provisioning: a test for differences in field metabolic rates of nestling Eastern Bluebirds, 793–798
 Drought, 779–781
 Duck, American Black, see *Anas rubripes*
 Wood, see *Aix sponsa*
 Ruddy, see *Oxyura jamaicensis*
 Dunne, Peter, see Russel, Robert W.
 Dwyer, Christopher P., see Krapu, Gary L.

E

- Eagle, Bald, see *Haliaeetus leucocephalus*
Eclectus roratus, 302–317
 Ecological correlates, 644–658
 Ecomorphology, 172–175
 Ectoparasites, 418–423
 Egg composition, 28–37
 destruction, 184–185
 neglect, 486–495
 Production Hypothesis, 1029–1032
 removal, 106–124
 size, 19–27, 28–37
 Viability Hypothesis, 1029–1032
 water loss, 28–37
 Egg-capping, 755–757
 Egg-shell removal, 755–757
 Eggs, 447–448, 755–757
Egretta sacra, 383–389
 El Niño, 516–525
 El Niño Southern Oscillation, 853–858
 Electrical conductivity, 463–465
 Emberizinae, 447–448
 Embryo metabolism, 486–495
 Emlen, Stephen T., Peter H. Wrege, Natalie J. Demong, and Robert E. Hegner. Flexible growth rates in nestling White-fronted Bee-eaters: a possible adaptation to short-term food shortage, 591–598
 Emms, S. K., and N.A.M. Verbeek. Brood size, food provisioning, and chick growth in the Pigeon Guillemot (*Cephus columba*), 943–951
Empidonax difficilis, 563–574
 hammondii, 563–574
 Endangered species, 38–43, 469–470
 Energetics, 138–146, 153–158, 346–353, 496–502, 546–554, 869–883
 Energy balance, 869–883
 budget, 138–146, 598–611
 expenditure, 793–798
 metabolism, 138–146
 requirements, 153–158
 ENSO, 853–858
 Entanglement, 251–258
 Environmental unpredictability, 591–598
Eudyptes chrysolophus, see *Macaroni Penguin*
 Euliss, Ned H., Jr., Robert L. Jarvis, and David S. Gilmer. Feeding ecology of waterfowl wintering on evaporation ponds in California, 582–590
Euphagus cyanocephalus, 967–974
 Evaporation ponds, 582–590
 Evens, Jules G., Gary W. Page, Stephen A. Laymon, and Richard W. Stallcup. Distribution, relative abundance, and status of the California Black Rail in western North America, 952–966
 Ewert, David D., and Robert A. Askins. Flocking behavior of migratory warblers in winter in the Virgin Islands, 864–868
 Extra-pair copulation, 390–398, 433–437

F

- Falco columbarius*, 433–437
 mexicanus, 762–765
 peregrine, 193–197
 peregrinus, 193–197
 rusticolus, 180–184
 Falcon, Peregrine, see *Falco peregrinus*
 Prairie, see *Falco mexicanus*
 Fat deposition, 869–883
 reserves, 153–158
 Feather mites, 418–423
 Feeding behavior, 473–485, 916–925
 ecology, 503–515, 582–590
 Female vocalization, 365–373
 Fig-Parrot, Orange-breasted, see *Cyclopsitta guilielmiterti*
 Finch, House, see *Carpodacus mexicanus*
 Large-footed, see *Pezopetes capitalis*
 Flamingo, American, see *Phoenicopterus ruber ruber*
 Fleischer, Robert C., Stephen I. Rothstein, and Linda S. Miller. Mitochondrial DNA variation indicates gene flow across a zone of known secondary contact between two subspecies of the Brown-headed Cowbird, 185–189
 Flight, 496–502
 Flight behavior, 55–61
 duration, 546–554
 energy metabolism, 546–554
 song, 12–18
 Flock size, 676–682
 Flocking behavior, 864–868
 Floral abundance, 279–285
 Florida, 759–762
 Flycatcher, Ash-throated, see *Myiarchus cinerascens*
 Hammond's, see *Empidonax hammondii*
 Pacific-slope, see *Empidonax difficilis*
 Food availability, 89–97
 habits, 1007–1012
 provisioning, 943–952
 restriction, 526–537
 stress, 591–598
 Foraging, 259–265, 346–353, 496–502, 777–779
 Foraging efficiency, 346–353
Formicariidae, 445–446
 Fossil stork, 1004–1006
 Founder effect, 1001–1003
 Fraser, James D., see Buehler, David A.

Fratercula arctica, 390–398
cirrhata, 251–258, 503–515
 Frederick, Peter C., see Bildstein, Keith L.
Fregata ariel, 555–562
Fregatidae, 555–562
 Frigatebird, Lesser, see *Fregata ariel*
Fulica americana, 19–27
 Fuller, Mark R., see Gessaman, James A.
 Fulmar, Northern, see *Fulmarus glacialis*
Fulmarus glacialis, 409–417
 Fusco, Gea, see Randi, Ettore

G

Gadwall, see *Anas strepera*
 Galah, see *Cacatua roseicapilla*
Gallinula chloropus guami, 38–43
 Gaston, Anthony J., see Croll, Donald A.
 Gauthier, Gilles, and Josée Tardif. Female feeding and male vigilance during nesting in Greater Snow Geese, 701–711
 Gauthreaux, Sidney A., Jr., see Belthoff, James R.
 Geese, Greater Snow, see *Chen caerulescens atlantica*
 Gene flow, 185–189, 318–329, 926–934
 Genetic divergence, 295–301
Geoffroyus geoffroyi, 302–317
simplex, 302–317
 Geographic variation, 383–389, 448–452, 712–723, 892–903, 987–1000
Geothlypis trichas, 12–18
 Gessaman, James A., Gar W. Workman, and Mark R. Fuller. Flight performance, energetics and water turnover of Tippler Pigeons with a harness and dorsal load, 546–554
 Gilmer, David S., see Euliss, Ned H.
Glossopsitta concinna, 302–317
 Gloutney, Mark L., and Robert G. Clark. The significance of body mass to female dabbling ducks during late incubation, 811–816
 Gnatcatcher, California, see *Poliophtila californica*
 Gochfeld, Michael, see Burger, Joanna
 Goldstein, Isaac R., see Strahl, Stuart D.
 Goodness-of-fit tests, 164–171
 Gore, Jeffery A., and Michael J. Kinnison. Hatching success in roof and ground colonies of Least Terns, 759–762
 Goulart, Christopher A., see Baker, Myron Charles
 Gowaty, Patricia Adair, see Droge, Dale L.
 Grackle, Boat-tailed, see *Quiscalus major*
 Common, see *Quiscalus quiscula*
 Great-tailed, see *Quiscalus mexicanus*
 Greater Antillean, see *Quiscalus niger*
 Graves, J. A., see Ortega-Ruano, J.
 Great Plains, 975–986
 Greenberg, Russell, see McDonald, Mary Victoria
 Grosbeak, Evening, see *Coccothraustes vespertinus*
 Group-living, 418–423
 Grouse, Ruffed, see *Bonansa umbellus*
 Growth, 138–146, 153–158
 Growth rate, 591–598, 612–629
Grus canadensis rowani, 266–278
canadensis tabida, 266–278
 Gulf of Mexico, 869–883
 Gullion, Gordon W., see Jakubas, Walter J., 473–485

Gyps coprotheres, 153–158
 Gyrfalcon, see *Falco rusticolus*

H

Habitat, 399–408, 762–765
 Habitat fragmentation, 864–868
 loss, 952–966
Haematopus bachmani, 892–903
Haliaeetus leucocephalus, 399–408
 Handford, Paul, and Stephen C. Loughheed. Variation in duration and frequency characters in the song of the Rufous-collared Sparrow, *Zonotrichia capensis*, with respect to habitat, trill dialects and body size, 644–658
 Handford, Paul T., see Austen, Madeline J. W.
 Harms, Kyle E., Les D. Beletsky, and Gordon H. Orrians. Conspecific nest parasitism in three species of New World Blackbirds, 967–974
 Harris, M. P., see Wanless, S.
 Hatch, Scott A. Evidence for color phase effects on the breeding and life history of Northern Fulmars, 409–417
 Hatching asynchrony, 19–27
 success, 759–762
 Hatchling type, 612–629
 Hawk, Cooper's, see *Accipiter cooperii*
 Ferruginous, see *Buteo regalis*
 Red-tailed, see *Buteo jamaicensis*
 Rough-legged, see *Buteo lagopus*
 Swainson's, see *Buteo swainsoni*
 Hayward, Gregory D., Cameron B. Kepler, and J. Michael Scott. Point counts from clustered populations: lessons from an experiment with Hawaiian Crows, 676–682
 Hegner, Robert E., see Emlen, Stephen T.
 Hepp, Gary R., and James E. Hines. Factors affecting winter distribution and migration distance of Wood Ducks from southern breeding populations, 884–891
 Heron, Eastern Reef, see *Egretta sacra*
 Heusmann, H. W., see Frank C. Rohwer
 Hiebert, Sara M. Seasonal differences in the response of Rufous Hummingbirds to food restriction: body mass and the use of torpor, 526–537
 High-seas, 251–258
 Hines, James E., see Hepp, Gary R.
 Hippoboscids flies, 418–423
 Hitchcock, Mark A., see Lanning, Dirk V.
 Hobblesh, 575–581
 Holocene, 840–852
 Holway, David A. Nest-site selection and the importance of nest concealment in the Black-throated Blue Warbler, 575–581
 Hooge, Philip N., see Koenig, Walter D.
 Hormones, 354–364, 935–942
 Hoysak, Drew J., and Patrick J. Weatherhead. Sampling blood from birds: a technique and an assessment of its effect, 746–752
 Hughes, Melissa, see Nowicki, Stephen
 Human disturbance, 125–129, 259–265
 Hummingbird, Broad-tailed, see *Selasphorus platycercus*
 Rufous, see *Selasphorus rufus*

Hybridization, 185–189, 825–839
Hypoleucis auritus, 840–852

I

Icterus, 82–88
Icterus galbula, 82–88
 Incubation, 28–37, 89–97, 125–129, 486–495, 768–773, 799–810, 811–816
 Indeterminate laying, 106–124
 Individual recognition, 12–18
 Infanticide, 454–457, 630–636
 Inouye, David W., William A. Calder, and Nickolas M. Waser. The effect of floral abundance on feeder censuses of Hummingbird populations, 279–285
 Insulation, 538–545
 Interrupted migration, 236–250
 Intersexual behavioral differences, 659–665
 Intraspecific differences, 630–636
 nest intruders, 433–437
 nest parasitism, 817–824
 Irruptions, 694–700
 Islands, 340–345
 Islas Diego Ramirez, 175–176
 Itoh, Singi. Geographical variation of the plumage polymorphism in the Eastern Reef Heron (*Egretta sacra*), 383–389

J

Jakubas, Walter J., and Gordon W. Gullion. Use of Quaking Aspen flower buds by Ruffed Grouse: its relationship to Grouse densities and bud chemical composition, 473–485
 Jarvis, Robert L., see Euliss, Ned H.
 Jay, Blue, see *Cyanocitta cristata*
 Florida Scrub, see *Aphelocoma c. coerulescens*
 Gray-breasted, see *Aphelocoma ultramarina*
 Jays, 438–442
 Jimenez, Jose Luis, see Strahl, Stuart D.
 Johnson, L. Scott, and L. Henry Kermott. Effect of nest-site supplementation on polygynous behavior in the House Wren (*Troglodytes aedon*), 784–787
 Johnson, L. Scott, see Kermott, L. Henry
 Joint nesting, 159–163
 Junco, Dark-eyed, see *Junco hyemalis*
Junco hyemalis, 172–175, 538–545
 phaeonotus, 138–146, 346–353
 Junco, Yellow-eyed, see *Junco phaeonotus*

K

Kennedy, E. Dale. Determinate and indeterminate egg-laying patterns: A review, 106–124
 Keough, M. J., see Quinn, G. P.
 Kepler, Cameron B., see Hayward, Gregory D.
 Kerlinger, Paul, see Russell, Robert W.
 Kermott, L. Henry, L. Scott Johnson, and Marilyn S. Merkle. Experimental evidence for the function of mate replacement and infanticide by males in a north-temperate population of House Wrens, 630–636
 Kermott, L. Henry, see Johnson, L. Scott
 Kern, Michael D., and Michael Knapic. Short-term variations in water-vapor pressure in nests of common canaries, 768–773

Kern, Michael D., see Sogge, Mark K.
 Kern, Robert, see Sogge, Mark K.
 Khamis, Harry J., see Beal, Kathleen G.
 Kiff, Lloyd F., see Klein, Nedra K.
 King-Parrot, Australian, see *Alisterus scapularis*
 Kingbird, Western, see *Tyrannus verticalis*
 Kinnison, Michael J., see Gore, Jeffery A.
 Kirkpatrick, Roy L., see Morton, John M.
 Kittiwake, Black-legged, see *Rissa tridactyla*
 Klaassen, Marcel, and Rudolf Drent. An analysis of hatchling resting metabolism: in search of ecological correlates that explain deviations from allometric relations, 612–629
 Klein, Nedra K., Manuel A. Marin, Thomas S. Schlenberg, and Lloyd F. Kiff. Eggs, nests, and nest-building behavior of the Large-Footed Finch (*Pezopetes capitalis*) in Costa Rica, 447–448
 Klicka, John, and Kevin Winker. Observations of Ravens preying on adult Kittiwakes, 755–757
 Knapic, Michael, see Kern, Michael D.
 Knopf, Fritz L., see Sedgwick, James A.
 Koenig, Walter D., Mark T. Stanback, Philip N. Hooge, and Ronald L. Mumme. Distress calls in the Acorn Woodpecker, 637–643
 Koford, Rolf R., see Bowen, Bonnie S.
 Komen, Joris. Energy requirements of nestling Cape Vultures, 153–158
 Krapu, Gary L., Christopher P. Dwyer, and Carmen R. Luna. Orphaned Mallard brood travels alone from nest to water, 779–781
 Kroodsmma, Donald E., and Hiroshi Momose. Songs of the Japanese population of the Winter Wren (*Troglodytes troglodytes*), 424–432
 Kuenzi, Amy Jo, Frank R. Moore, and Ted R. Simons. Stopover of neotropical landbird migrants on East Ship Island following trans-gulf migration, 869–883

L

L'Hyver, Marie-Aude, and Edward H. Miller. Geographic and local variation in nesting phenology and clutch size of the Black Oystercatcher, 892–903
 Lanning, Dirk V., and Mark A. Hitchcock. Breeding distribution and habitat of Prairie Falcons in northern Mexico, 762–765
Laterallus jamaicensis, 952–966
Lathamus discolor, 302–317
 Latitude, 612–629
 Latitudinal sex ratio variation, 374–383
 Laymon, Stephen A., see Evens, Jules G.
 Lean mass, 463–465
 Learning, 1–11
 Lefevre, Christine, see Siegel-Causey, Douglas
 Life history, 409–417
 Lindstedt, Susan M., see Pogson, Thomas H.
 Linz, George M., see Twedt, Daniel J.
 Lipid, 463–465
 Lipid-limitation hypothesis, 1026–1029
 Local variation, 892–903
 Loeffel, Robert E., see Bayer, Range D.
 Lohr, Bernard, and Stephen Nowicki. Pitch production in Carolina Chickadee songs, 197–199
 Lokemoen, John T. Brood parasitism among water-

- fowl nesting on islands and peninsulas in North Dakota, 340–345
- Lorenzini, Rita, see Randi, Ettore
- Lorikeet, Musk, see *Glossopsitta concinna*
- Orange-billed, see *Neopsittacus pullicauda*
- Papuan, see *Charmosyna papou*
- Plum-faced, see *Oreopsittacus arfaki*
- Rainbow, see *Trichoglossus haematodus*
- Varied, see *Psitteuteles versicolor*
- Yellow-billed, see *Neopsittacus musschenbroekii*
- Lory, Western Black-capped, see *Lorius lory*
- Lougheed, Stephen C., see Handford, Paul
- Lovebird, Peach-faced, see *Agapornis roseicollis*
- Lowe, Roy W., see Bayer, Range D.
- Luna, Carmen R., see Krapu, Gary L.
- M**
- Macaroni Penguin*, 175–176
- Magpie, Black-billed, see *Pica pica*
- Magpie, see *Pica pica*
- Malacosoma disstria*, 473–485
- Male/female philopatry, 189–191
- Male pair status, 89–97
- Mallard, Mariana, see *Anas oustaleti*
- Mallard, see *Anas platyrhynchos*
- Mariana Islands, 38–43
- Marin, Manuel A., see Klein, Nedra K.
- Marler, Peter, see Nowicki, Stephen
- Martin, Pamela A., and Todd W. Arnold. Relationships among fresh mass, incubation time, and water loss in Japanese Quail eggs, 28–37
- Martin, Purple, see *Progne subis*
- Maryland, 399–408
- Mate choice, 82–88, 935–942
- harassment, 365–373
- replacement, 630–636
- Maturation, 448–452
- Mayer, Paul, M., and Mark R. Ryan. Survival rates of artificial Piping Plover nests in American Avocet colonies, 753–755
- Maynes, S. F., see Christidis, L.
- McDonald, Mary Victoria, and Russell Greenberg. Nest departure calls in female songbirds, 365–373
- Meadowlark, Eastern, see *Sturnella magna*
- Western, see *Sturnella neglecta*
- Melanerpes formicivorus*, 637–643
- Melopsittacus undulatus*, 302–317
- Melopiza georgiana*, 1–11, 365–373
- melodia micronyx*, 773–776
- Merkle, Marilyn S., see Kermott, L. Henry
- Merlin, see *Falco columbarius*
- Merops bullockoides*, 591–598
- Mersmann, Timothy J., see Buehler, David A.
- Metabolic rate, 793–798
- Metabolism, 538–545
- Mewaldt-King student research award, 791
- Mexico, 236–250, 762–765
- Micropsitta bruijnii*, 302–317
- pusio*, 302–317
- Midden site, 840–852
- Migration, 55–61, 172–175, 236–250, 374–382, 399–408, 864–868, 884–891
- Migration distance, 712–723
- Migration-uncertainty hypothesis, 1026–1029
- Miller, Edward H., see L'Hyver, Marie-Aude
- Miller, Linda S., see Fleischer, Robert C.
- Mimicry, 443–445
- Mitochondrial DNA, 98–105, 185–189, 318–329, 1016–1019
- Mixed foraging flocks, 864–868
- Mobbing, 753–755
- Mock, Patrick, J., Daily allocation of time and energy of Western Bluebirds feeding nestlings, 598–611
- Molothrus ater*, 185–189, 747–752
- artemisiae*, 185–189
- obscurus*, 185–189
- Molt, 236–250, 209–235, 724–730, 731–737
- Molt-migration, 236–250
- Momose, Hiroshi, see Kroodsma, Donald E.
- Monogamy, 71–81, 390–398
- Moore, Frank R., see Kuenzi, Amy Jo
- Moore, Michael C., see Schoech, Stephan J.
- Moorhen, Mariana Common, see *Gallinula chloropus guami*
- Morphological constraints, 644–658
- Morphology, 712–723
- Morrison, Michael L., see Brennan, Leonard A.
- Mortality, 251–258, 779–781
- Morton, John M., Roy L. Kirkpatrick, and Eric P. Smith. Comments on estimating total body lipids from measures of lean mass, 463–465
- Morton, Martin, L. Postfledging dispersal of Green-tailed Towhees to a subalpine meadow, 466–468
- Multivariate morphometrics, 825–839
- Mulvihill, Robert S., and C. Ray Chandler. A comparison of wing shape between migratory and sedentary dark-eyed Juncos (*Junco hyemalis*), 172–175
- Mumme, Ronald L., see Koenig, Walter D.
- Mumme, Ronald L., see Schoech, Stephan J.
- Murre, Common, see *Uria aalge*
- Thick-billed, see *Uria lomvia*
- Murrelet, Marbled, see *Brachyramphus marmoratus*
- Museum specimens, 236–250
- Mycteria*, 1004–1006
- americana* Linnaeus, 1004–1006
- Myiarchus cinerascens*, 461–462
- Myrmorchilus*, 445–446
- strigilatus*, 445–446
- N**
- Naslund, Nancy L., see Singer, Steven W.
- Natural nest cavities, 784–787
- Naugler, Christopher, T., and Peter C. Smith. Song similarity in an isolated population of Fox Sparrows (*Passerina iliaca*), 1001–1003
- Nelson, Douglas A. Demography of the Pigeon Guillemot on southeast Farallon Island, California, 765–768
- Neophema bourkii*, 302–317
- chrysostoma*, 302–317
- Neopsittacus musschenbroekii*, 302–317
- pullicauda*, 302–317
- Neotropical landbird migrants, 869–883
- migratory bird program, 1041
- Neotropics, 447–448
- Nest, 445–446, 447–448, 755–757
- Nest behavior, 365–373
- boxes, 784–787

building, 191–193
 concealment, 575–581
 departure calls, 365–373
 destruction, 967–974
 dispersion, 452–454
 humidity, 768–773
 microhabitat, 575–581
 orientation, 164–171
 parasitism, 967–974
 predation, 575–581
 site, 330–339, 575–581
 site abundance, 784–787
 site competition, 184–185, 461–462
 site quality, 784–787
 site selection, 563–574, 575–581
 spacing, 555–562
 survival, 753–755
 vulnerability, 125–129
 Nesting, 177–180, 340–345, 447–448
 Nesting behavior, 701–711, 768–773
 density, 452–454
 habitat, 1007–1012
 phenology, 892–903
 sites, 180–184
 Nestling, 138–146, 793–798
 care, 598–611
 development, 591–598
 growth, 49–54, 773–776
Netta peposaca, 175–176
 Nightjar, European, see *Caprimulgus europaeus*
 Noble, David G., see Croll, Donald A.
 Nocturnal field observations, 55–61
 foraging, 259–265
 North Dakota, 975–986
 North Pacific Ocean, 251–258
 Northern Great Plains, 975–986
Northiella haematogaster, 302–317
 Northwest Territories, 193–197
 Northwestern California, 563–574
 Nova Scotia, 189–191
 Nowicki, Stephen, Melissa Hughes, and Peter Marler.
 Flight songs of Swamp Sparrows: alternative
 phonology of an alternative song category, 1–11
 Nowicki, Stephen, see Lohr, Bernard
 Nutrient limitation, 1026–1029, 1032–1038
 Nutrient reserve hypothesis, 811–816
 reserves, 89–97, 799–810, 811–816, 1026–1029,
 1029–1032
 Nutrition, 458–461

O

Oaks, 438–442
 Observer variation, 676–682
 Offspring, 346–353
 Oil development, 180–184
 Old-growth forest, 330–339, 563–574
 Oliphant, Lynn W., see Bradley, Mark
 Olson, Storrs L. The fossil record of the Genus *Myc-
 teria* (Ciconiidae) in North America, 1004–1006
 Ontogeny, 448–452
 Optimal foraging, 503–515
 Oregon, 516–525
Oreopsittacus arfaki, 302–317
 Orians, Gordon H., see Harms, Kyle E.
 Oriole, 82–88

Oriole, Northern see *Icterus galbula*
 Ortega-Ruano, J., and J. A. Graves. Reverse mounting
 during the courtship of the European Shag *Phal-
 acrocorax aristotelis*, 859–836
 Osmek, Steven D., see Croll, Donald A.
Otus asio, 55–61
scops, 295–301
 Owl, Barn, see *Tyto alba*
 Common Scops, see *Otus scops*
 Eagle, see *Bubo bubo*
 Little, see *Athene noctua*
 Long-eared, see *Asio otus*
 Saw-whet, see *Aegolius acadicus*
 Screech, see *Otus asio*
 Short-eared, see *Asio flammeus*
 Tawny, see *Strix aluco*
 Owls, migrating, 55–61
Oxyura jamaicensis, 582–590
 Oystercatcher, Black see *Haematopus bachmani*

P

Page, Gary W., see Evens, Jules G.
 Pair formation, 82–88
 Paradisaeidae, 738–745
 Parakeet, Derbyan, see *Psittacula derbiana*
 Red-fronted, see *Cyanoramphus novaezelandiae*
 Slaty-headed, see *Psittacula himalayana*
 Parasitism, 49–54
 Parental care, 125–129
 investment, 71–81, 390–398
 Parents, 346–353
Parotia lawesii, 738–745
 Parrot, Australo-Papuan, 302–317
 Blue-collared, see *Geoffroyus simplex*
 Blue-winged, see *Neophema chrysostoma*
 Bourke's, see *Neophema bourkii*
 Eclectus, see *Eclectus roratus*
 Ground, see *Pezoporus wallicus*
 Hawk-headed, also Red-fan, see *Deroptyus accip-
 itrinus*
 Red-capped, see *Purpureicephalus spurius*
 Red-cheeked, see *Geoffroyus geoffroyi*
 Red-rumped, see *Psephotus haematonotus*
 Superb, see *Polytelis swainsonii*
 Swift, see *Lathamus discolor*
 Parrots, 302–317
 Parulinae, 712–723, 864–868
Parus atricapillus, 62–70, 130–137
carolinensis, 197–199
gambeli, 130–137
rufescens, 130–137
Passer domesticus, 175–176
Passerculus sandwichensis, 1016–1019
Passerella iliaca, 1001–1003
Passerina amoena, 236–250
ciris, 209–235, 987–1000
 Penguin, 777–779
 Peninsulas, 340–345
 Peterson, A. Townsend. Geographic variation in the
 ontogeny of beak coloration of Gray-breasted
 Jays (*Aphelocoma ultramarina*), 448–452
 Peterson, A. Townsend. Gene flow in Scrub Jays: fre-
 quency and direction of movement, 926–934
Pezopetes capitalis, 447–448
Pezoporus wallicus, 302–317

- Phalacrocoracidae*, 44–48, 840–852
Phalacrocorax, 859–863
Phalacrocorax albiventer, 825–839
 aristotelis, 859–863
 atriceps, 825–839
 auritus, 840–852, 853–858
 capillatus, 840–852
 carbo, 840–852
 kenyoni, 840–852
 magellanicus, 44–48
 pelagicus, 840–852
 penicillatus, 853–858
 perspicillatus, 840–852
 urile, 840–852
Phalcoboenus australis, 175–176
 Phenylpropanoid, 473–485
Philohela minor, 463–465
Phoenicopterus ruber ruber, 916–925
 Phonology, 1–11
 Phylogenetic relationships, 295–301
 species, 987–1000
 Phylogeny, 424–432
 Phylogeny inference, 98–105
Pica pica, 49–54, 452–454
 Picman, Jaroslav, see Pribil, Stanislav
 Pierotti, Raymond, Review of *Ravens in Winter* by Bernd Heinrich, 788–789
 Pierotti, Raymond, Individual variation and the costs of reproduction, Review of *Lifetime Reproduction in Birds* by Ian Newton, 1039–1040
 Pigeon Guillemot, see *Cephus columba*
 Pigeon, Tippler, see *Columba livia*
 Pintails, Northern, see *Anas acuta*
Pipilo aberti, 98–105
 albicollis, 98–105
 chlorura, 466–468
 crissalis, 98–105
 fuscus, 98–105
 Pitch change, 197–199
Platycercus elegans, 302–317
 eximius, 302–317
 Plover, Piping, see *Charadrius melodus*
 Plumage, 987–1000
 color, 383–389
 coloration, 82–88
 polymorphism, 409–417
 Plumages, 209–235
 Pochard, Rosy-billed, see *Netta peposaca*
 Pogson, Thomas H., and Susan M. Lindstedt. Distribution and abundance of large Sandhill Cranes, *Grus canadensis*, wintering in California's Central Valley, 266–278
 Point counts, 676–682
Poliptila californica, 1042
Polyborus plancus, 175–176
 Polygyny, 784–787
 Polymorphism, 409–417
Polytelis swainsonii, 302–317
 Population cycles, 473–485
 differentiation, 926–934
 dynamics, 399–408
 monitoring, 130–137
 size, 279–285
 status, 266–278
 structure, 318–329
Populus tremuloides, 473–485
 Postfledging dispersal, 466–468
 Postnatal dispersal, 466–468
 Poulin, Robert. Group-living and infestation by ectoparasites in Passerines, 418–423
 Pre-incubation behavior, 659–665
 Predation risk, 125–129
 Predator attraction, 637–643
 Predator-prey interaction, 755–757
 Prescott, David R. C. Winter distribution of age and sex classes in an irruptive migrant, the Evening Grosbeak (*Coccothraustes vespertinus*), 694–700
 Pribil, Stanislav, and Jaroslav Picman. Why house wrens destroy clutches of other birds: a support for the nest site competition hypothesis, 184–185
 Primary molt, 724–730
 Progesterone, 354–364
Progne subis, 666–675
 Protein electrophoresis, 302–317
 polymorphism, 295–301
 Protein-limitation hypothesis, 1026–1029
 Protomastro, Jorge J., see Caziani, Sandra M.
Psephotus haematonotus, 302–317
Psittacula brehmii, 302–317
 picta, 302–317
Psittacidae, 302–317
Psittacula derbiana, 302–317
 himalayana, 302–317
Psittuteutes versicolor, 302–317
Ptiloris, 738–745
Ptiloris alberti, 738–745
 intercedens, 738–745
 magnificus, 738–745
 paradiseus, 738–745
 victoriae, 738–745
Ptychoramphus aleuticus, 486–495
 Puffin, Atlantic, see *Fratercula arctica*
 Tufted, see *Fratercula cirrhata*
Puffinus griseus, 251–258, 724–730
 tenuirostris, 251–258
Purpureicephalus spurius, 302–317
 Pygmy-Parrot, Buff-faced, see *Micropsitta pusio*
 Red-breasted, see *Micropsitta bruijnii*
- ## Q
- Quail, Japanese, see *Coturnix japonica*
 Quinn, G. P., and M. J. Keough. Repeated measures analysis of variance: a comment on Beal and Khamis (1990), 200–202
Quiscalus major, 318–329
 mexicanus, 318–329, 365–373
 niger, 318–329
 quiscula, 318–329, 365–373
- ## R
- Radio transmitter, 546–554, 777–779
 Rail, Black, see *Laterallus jamaicensis*
 Ralph, C. John, see Singer, Steven W.
 Randi, Ettore, Gea Fusco, Rita Lorenzini, and Fernando Spina. Allozyme divergence and phylogenetic relationships within the Strigiformes, 295–301
 Rao's spacing test, 164–171

- Rasmussen, Pamela C. Relationships between coastal South American King and Blue-eyed Shags, 825–839
- Raven, Common, see *Corvus corax*
- Recorder, 777–779
- Recurvirostra americana*, 753–755
- Redhead, see *Aythya americana*
- Reichel, James D., see Stinson, Derek W.
- Repasky, Richard R., Roberta J. Blue, and Phillip D. Doerr. Laying Red-cockaded Woodpeckers cache bone fragments, 458–461
- Repeated measures analysis of variance, 200–203
- Replacement female, 454–457
- Reproduction, 496–502, 1013–1016
- Reproductive behavior, 71–81
effort, 817–824
hormones, 354–364
success, 286–294, 683–693
- Resource partitioning, 1007–1012
- Resources, 279–285
- Restani, Marco. Resource partitioning among three Buteo species in the Centennial Valley, Montana, 1007–1012
- Resting metabolic rate, 612–629
- Retardation, 591–598
- Reverse mounting, 159–163, 859–863
- Reversed sexual dominance, 1010–1012
sexual size dimorphism, 659–665
- Reville, Barry J. Nest spacing and breeding success in the Lesser Frigatebird (*Fregata ariel*), 555–562
- Riflebird, Magnificent, see *Ptiloris magnificus*
Victoria's, see *Ptiloris victoriae*
- Riflebirds, see *Ptiloris*
- Ringneck, see *Barnardius zonarius*
- Rising, James D., see Zink, Robert M.
- Rissa tridactyla*, 755–757
- Ritchie, Robert J. Effects of oil development on providing nesting opportunities for Gyrfalcons and Rough-legged Hawks in northern Alaska, 180–184
- Ritchison, Gary. The flight songs of Common Yellowthroats: description and causation, 12–18
- Ritter, Michael W., see Stinson, Derek W.
- Robertson, Raleigh J., see Chek, Andrew A.
- Rocky Mountain National Park, 71–81
- Rohwer, Frank C., and H. W. Heusmann. Effects of brood size and age on survival of female Wood Ducks, 817–824
- Rohwer, Frank C., see Arnold, Todd W.
- Roof-nesting, 759–762
- Rootes, William L., see Zink, Robert M.
- Rosella, Eastern, see *Platycercus eximius*
- Rosenberg, Kenneth V., see Chapman, Angela
- Rosenfield, Robert N., and John Bielefeldt. Undescribed bowing display in the Cooper's Hawk, 191–193
- Rosenfield, Robert N., and John Bielefeldt. Vocalizations of Cooper's Hawks during the pre-incubation stage, 659–665
- Rothstein, Stephen I., see Fleischer, Robert C.
- Russell, Robert W., Peter Dunne, Clay Sutton, and Paul Kerlinger. A visual study of migrating Owls at Cape May Point, New Jersey, 55–61
- Ryan, Mark M., see Mayer, Paul M.
- S
- Saguaro, 666–675
- Sakai, Howard F., and Barry R. Noon. Nest-site characteristics of Hammond's and Pacific-slope Flycatchers in northwestern California, 563–574
- San Clemente Island, 1041–1042
- Sanderling, see *Calidris alba*
- Savinetskii, Akady B., see Siegel-Causey, Douglas
- Scarlett, Todd L., and Kimberly G. Smith. Acorn preference of urban Blue Jays (*Cyanocitta cristata*) during fall and spring in northwestern Arkansas, 438–442
- Scaup, Lesser, see *Aythya affinis*
- Schoech, Stephan J., Ronald L. Mumme, and Michael C. Moore. Reproductive endocrinology and mechanisms of breeding inhibition in cooperatively breeding Florida Scrub Jays (*Aphelocoma c. coerulescens*), 354–364
- Schulenberg, Thomas S., see Klein, Nedra K.
- Scott, Abby C., and Marc Bekoff. Breeding behavior of Evening Grosbeaks, 71–81
- Scott, J. Michael, and Edward O. Garton. Population estimates of the Black-capped Vireo, 469–470
- Scott, J. Michael, see Hayward, Gregory D.
- Screams, 637–643
- Sea surface temperature anomaly, 853–858
- Seabirds, 251–258, 503–515, 765–768, 777–779
- Seasonal adjustments, 538–545
- Second broods, 683–693
- Secondary metabolite, 473–485
- Sedgwick, James A., and Fritz L. Knopf. The loss of avian cavities by injury compartmentalization, 781–783
- Seegar, Janis K. D., see Buehler, David A.
- Selasphorus platycercus*, 279–285
rufus, 526–537
- Serinus canarius*, 768–773
- Sex, 694–700
differences, 884–891
ratio, 374–382
- Sex-biased provisioning, 793–798
- Sexual display, 935–942
selection, 82–88, 454–457
- Seymour, Norman R. Philopatry in male and female American Black Ducks, 189–191
- Shag, Blue-eyed, see *Phalacrocorax atriceps*
European, see *Phalacrocorax aristotelis*
Kenyon's, see *Phalacrocorax kenyonii* and *Stictocarbo kenyonii*
King, see *Phalacrocorax albiventer*
Pelagic, see *Phalacrocorax pelagicus* and *Stictocarbo pelagicus*
Red-faced, see *Phalacrocorax urile* and *Stictocarbo urile*
Rock, see *Phalacrocorax magellanicus*
- Shags, 840–852, 859–863
- Shaw, D. D., see Christidis, L.
- Shearwater, Short-tailed, see *Puffinus tenuirostris*
Sooty, see *Puffinus griseus*
- Shodde, R., see Christidis, L.
- Shorebird, 259–265
- Shoveler, Northern, see *Anas clypeata*
- Sialia currucoides*, 461–462

- mexicana*, 598–611
sialis, 793–798
 Siegel-Causey, Douglas, Christine Lefevre, and Arkadii B. Savinetskii. Historical diversity of Cormorants and Shags from Amchitka Island, Alaska, 840–852
 Sierra Nevada, see 130–137
 Simons, Ted R., see Kuenzi, Amy Jo
 Simpkin, Janice L., and Alan A. Gubanich. Ash-throated Flycatchers (*Myiarchus cinerascens*) raise Mountain Bluebird (*Sialia currucoides*) young, 461–462
 Simultaneous inference, 1023–1025
 Singer, Stephanie A., see Singer, Steven W.
 Singer, Steven W., Nancy L. Naslund, Stephanie A. Singer, and C. John Ralph. Discovery and observations of two tree nests of the Marbled Murrelet, 330–339
 Singing behavior, 424–432
 Site choice, 555–562
 Smith, Eric P., see Morton, John M.
 Smith, Kimberly G., see Scarlett, Todd L.
 Smith, Peter C., see Naugler, Christopher T.
 Social interaction, 701–711
 Sociality, 448–452
 Sodhi, Navjot S. Pair copulations, extra-pair copulations, and intraspecific nest intrusions in Merlin, 433–437
 Sogge, Mark K., Michael D. Kern, Robert Kern, and Charles van Riper, III. Growth and development of thermoregulation in nestling San Miguel Island Song Sparrows, 773–776
 Soler, J. J., see Soler, M.
 Soler, M., and J. J. Soler. Growth and development of Great Spotted Cuckoos and their Magpie host, 49–54
 Song, 1–11, 12–18, 147–152, 424–432, 443–445, 784–787
 characteristics, 147–152
 populations, 424–432
 production, 197–199
 similarity, 1001–1003
 variation, 147–152, 644–658
 Songbirds, 365–373
 South Africa, 724–730
 Spalding, Marilyn G., see Bildstein, Keith L.
 Sparrow, Botteri's, see *Aimophila botterii*
 Brewer's, see *Spizella breweri*
 Fox, see *Passerella iliaca*
 Grasshopper, see *Ammodramus savannarum*
 House, see *Passer domesticus*
 Rufous-collared, see *Zonotrichia capensis*
 Savannah, see *Passerculus sandwichensis*
 Seaside, see *Ammodramus maritimus*
 Sharp-tailed, see *Ammodramus caudacutus*
 Song, see *Melospiza melodia*
 Swamp, see *Melospiza georgiana*
 White-crowned, see *Zonotrichia leucophrys gambelii*
 Spatial memory, 1020–1023
 Species limits, 98–105, 1016–1019
 recognition, 197–199
 Sperm competition, 433–437
 Spina, Fernando, see Randi, Ettore
Spizella breweri, 365–373
 St. Louis, Vincent, L., and Loes Breebaart. Calcium supplements in the diet of nestling Tree Swallows near acid sensitive lakes, 286–294
 Stallcup, Richard W., see Evens, Jules G.
 Stanback, Mark T., see Koenig, Walter D.
 Starling, European, see *Sturnus vulgaris*
 Statistical analyses, 1023–1025
 Status, 38–43
Sterna antillarum, 759–762
 dougallii, 125–129
 hirundo, 125–129
 Stewart, David J., and Cynthia Annett. *Review of Dynamic Modeling in Behavioral Ecology* by M. Mangel and C. W. Clark, 789–790
Stictocarbo kenyonii, 840–852
 pelagicus, 840–852
 urile, 840–852
 Stinson, Derek W., Michael W. Ritter, and James D. Reichel. The Mariana Common Moorhen: decline of an island endemic, 38–43
 Stone, Eric, and Charles H. Trost. The effects of supplemental food on nest dispersion in Black-billed Magpies, 452–454
 Storey, A. E., see Creelman, E.
 Stork, Wood, see *Mycteria americana* Linnaeus
 Storks, 1004–1006
 Stouffer, Philip C. Intra-seasonal costs of reproduction in Starlings, 683–693
 Strahl, Stuart D., Philip A. Desenne, Jose Luis Jimenez, and Isaac R. Goldstein. Behavior and biology of the Hawk-headed Parrot, *Derophtys accipitrinus*, in southern Venezuela, 177–180
 Striated Caracara, see *Phalco boenus australis*
 Strigiformes, 295–301
Strix aluco, 295–301
Sturnella magna, 365–373
 neglecta, 365–373
Sturnus vulgaris, 683–693
 Stutchbury, Bridget J. Coloniality and breeding biology of Purple Martins (*Progne subis hesperia*) in saguaro cacti, 666–675
 Subalpine, 466–468
 Sullivan, Kimberly A., see Weathers, Wesley W.
 Sun compass, 1020–1023
 Sunflower, 975–986
 Supplemental feeding, 19–27
 food, 452–454
 Survey design, 469–470, 470–472
 Survival, 1013–1016
 Survivorship, 346–353, 765–768
 Sutton, Clay, see Russell, Robert W.
 Swaby, R. J., see Beehler, Bruce M.
 Swallow, Tree, see *Tachycineta bicolor*
 Swanson, David L. Seasonal adjustments in metabolism and insulation in the Dark-eyed Junco, 538–545
 Systematics, 302–317, 738–745

T

- Tachycineta bicolor*, 286–294, 454–457
 Tardif, Josée, see Gauthier, Gilles
 Teal, Blue-winged, see *Anas discors*

- Tern, Common, see *Sterna hirundo*
 Least, see *Sterna antillarum*
 Roseate, see *Sterna dougallii*
 Territoriality, 1013–1016
 Testosterone, 354–364, 935–942
 Thermocline, 853–858
 Thermogenesis, 773
 Thermoregulation, 773
 Thompson, Christopher W. The sequence of molts and plumages in painted buntings and implications for theories of delayed plumage maturation, 209–235
 Thompson, Christopher W. Is the Painted Bunting actually two species? Problems determining species limits between allopatric populations, 987–1000
 Thorn-tailed Rayadito, see 175–176
Thryomanes bewickii, 443–445
 Tiger-Parrot, Brehm's, see *Psittacella brehmii*
 Painted, see *Psittacella picta*
 Time budget, 598–611, 701–711
 TOBEC, 463–465
 Torpor, 526–537
 Total body electrical conductivity, 463–465
 Towhee, Brown, 98–105
 Green-tailed, see *Pipilo chlorura*
 Transequatorial migration, 724–730
 Travel, 779–781
 Tree nests, 330–339
Trichoglossus haematodus, 302–317
Troglodytes aedon, 184–185, 443–445, 630–636, 784–787
troglodytes, 424–432
 Tubaro, Pablo Luis. Can *Troglodytes aedon* in Argentina "mimic" the songs of *Thryomanes bewickii*?, 443–445
 Twedt, Daniel J., William J. Bleier, and George M. Linz. Geographic and temporal variation in the diet of Yellow-headed Blackbirds, 975–986
Tyrannus verticalis, 164–171
Tyto alba, 55–61, 295–301
- U
- Underhill, Leslie G., see Cooper, John
Uria aalge, 516–525, 853–858
lomvia, 251–258, 496–502
- V
- van Riper, Charles, III, see Sogge, Mark K.
 Vehrencamp, Sandra L., see Bowen, Bonnie S.
 Venezuela, 177–180, 916–925
 Verbeek, N.A.M., see Emms, S. K.
Vireo atricapillus, 469–470, 470–472
Vireo, Black-capped, see *Vireo atricapillus*
 Virgin Islands, 864–868
 Vocalization, 62–70, 365–373, 659–665
 Vulture, Cape, see *Gyps coprotheres*
- W
- Wallace, George E. Noteworthy bird records from southernmost Chile, 175–176
 Wanless, S., and M. P. Harris. Diving patterns of full-grown and juvenile Rock Shags, 44–48
 Warbler, Black-throated Blue, see *Dendroica caerulescens*
 Yellow, see *Dendroica petechia*
 Warkentin, Ian G., see Derrickson, Kim C.
 Warning mate, 12–18
 Waser, Nickolas M., see Inouye, David W.
 Washington, 853–858
 Water flux, 546–554
 Water-vapor pressure, 768–773
 Waterfowl, 1026–1029, 1032–1038
 reproduction, 1029–1032
 Weatherhead, Patrick J., see Hoysak, Drew J.
 Weatherhead, Patrick, J., Drew J. Hoysak, Karen J. Metz, and Christopher G. Eckert. A retrospective analysis of red-band effects on Red-winged Blackbirds, 1013–1016
 Weathers, Wesley W., see Droge, Dale L.
 Weathers, Wesley W., and Kimberly A. Sullivan. Growth and energetics of nestling Yellow-eyed Juncos, 138–146
 Weathers, Wesley W., and Kimberly A. Sullivan. Foraging efficiency of parent Junco and their young, 346–353
 Weimerskirch, H. Sex-specific differences in molt strategy in relation to breeding in the Wandering Albatross, 731–737
 Wetlands, 916–925
 Wiedenfeld, David A. Geographical morphology of male Yellow Warblers, 712–723
 Wilson, Ulrich W. Responses of three Seabird species to El Niño events and other warm episodes on the Washington Coast 1979–1990, 853–858
 Wiltschko, Wolfgang, see Balda, Russell P.
 Wing length, 516–525, 987–1000
 shape, 172–175
 Wingfield, John C., see Borgia, Gerald
 Winker, Kevin, see Klicka, John
 Winter distribution, 266–278, 374–383, 694–700, 884–891
 residents, 864–868
 Woodcock, American, see *Philohela minor*
 Woodcreeper, Buff-throated, see *Xiphorhynchus guttatus*
 Plain-brown, see *Dendrocincla fuliginosa*
 Spix's, see *Xiphorhynchus spixii*
 White-chinned, see *Dendrocincla merula*
 Woodcreepers (Dendrocolaptidae), 904–915
 Woodpecker, Acorn, see *Melanerpes formicivorus*
 Workman, Gar W., see Gessaman, James A.
 Wrege, Peter H., see Emlen, Stephen T.
 Wren, Bewick's, see *Thryomanes bewickii*
 House, see *Troglodytes aedon*
 Winter, see *Troglodytes troglodytes*
- X
- Xanthocephalus xanthocephalus*, 365–373, 967–974, 975–986
Xiphorhynchus guttatus, 904–915
- Y
- Yellowthroat, Common, see *Geothlypis trichas*
 Young, Bruce E. Annual molts and interruption of the fall migration for molting in Lazuli Buntings, 236–250

Z

- Zink, Robert M., and Donna L. Dittmann. Evolution of Brown Towhees: mitochondrial DNA evidence, 98–105
- Zink, Robert M., William L. Rootes, and Donna L. Dittmann. Mitochondrial DNA variation, population structure, and evolution of the Common Grackle (*Quiscalus quiscula*), 318–329
- Zink, Robert M., Donna L. Dittmann, Steven W. Cardiff, and James D. Rising. Mitochondrial DNA variation and the taxonomic status of the Large-billed Savannah Sparrow, 1016–1019
- Zonotrichia capensis*, 644–658
- leucophrys gambelli*, 147–152
- Zooarchaeology, 840–852

IBIS

Journal of the British Ornithologists' Union

Edited by **Dr Peter Jones**

*Department of Forestry and Natural Resources, University of Edinburgh,
King's Buildings, Edinburgh EH9 3JU, UK*

One of the most prestigious bird journals in the world, *Ibis* has been in existence since 1859. It publishes papers from both professionals and amateurs on all aspects of ornithology ranging from geographical distribution to bird behaviour, covering topics such as kin selection, altruism and breeding systems. Reviews of the ornithological literature have always been an important feature of the jour-

nal. Although it is published for the British Ornithologists' Union it is by no means exclusively British, and less than half the papers deal with British birds.

Subscription Information

Ibis is published quarterly. Subscription rates for 1991 are £95.00 (UK), £110.00 (overseas) and US\$199.50 (USA & Canada) post free.

BSP

-JOURNALS-

Blackwell Scientific Publications

Osney Mead, Oxford OX2 0EL Tel: (0865) 240201