Antiparasite behavior, 169

Aptenodytes patagonicus, 994

McCarty, 210

Aquatic Community Characteristics Influence the For-

Arena Birds: Sexual Selection and Behavior, by Paul

aging Patterns of Tree Swallows, by John P.

Apomorphine, 765

# **INDEX TO VOLUME 99**

A. Johnsgard, reviewed by David B. Lank and Frank A. Pitelka, 558 Abe, A. S., see Bech, C., 780 Arnold, Todd W., and C. Davison Ankney, The Adap-Absence of Locomotor-Respiratory Coupling During tive Significance of Nutrient Reserves to Breed-Simulated Descending Flight in the Cackling ing American Coots: A Reassessment, 91 Canada Goose, by Tim Jarsky and Richard Ste-Arthropod, 554 phenson, 1007 Artifical nests, 7, 14 Acorns, 756 Asio otus, 969 Acoustic display, 798 Assortative mating, 803 luring, 203 Asthenes anthoides, 253 Adaptations to and Consequences of an Herbivorous At-Sea Density Monitoring of Marbled Murrelets in Diet in Grouse and Waterfowl, by James S. Se-Central California: Methodological Consideradinger, 314 tions, by Benjamin H. Becker, Steven R. Beis-The Adaptive Significance of Nutrient Reserves to singer and Harry R. Carter, 743 Breeding American Coots: A Reassessment, by Atkinson, Eric C., Singing for Your Supper: Acoustical Todd W. Arnold and C. Davison Ankney, 91 Luring of Avian Prey by Northern Shrikes, 203 Adiposity, 969 Audouin's Gull, 773 Adkins-Regan, E., see Goodson, J. L., 990 Avian Energetics and Nutritional Ecology, edited by Adkisson, C. S., see Dixon, M. D., 756 Cynthia Carey, reviewed by Carlos Martinez del Aerial display, 514 Age, 642 Avian Nest Success in Relation to Past Grazing Reeffects, 906 gimes in a Montane Riparian System, by Elis-Ageing, 58 abeth M. Ammon and Peter B. Stacey, 7 Agelaius phoeniceus, 826 Avian prey, 203 Aggression, 434, 642 Avoidance responses, 162 Ainley, David G., A review of The Penguins: Ecology Aythya ferina, 916 and Management, edited by Peter Dann, Ian fuligula, 916 Norman and Pauline Reilly, 240 Azores, 634 Alaska, 25, 271, 299, 728 Alcidae, 353 В Alisauskas, R. T., see Sedinger, J. S., 836 B-hydroxy-butyrate, 113 Allele frequency, 812 Allozyme, 812 Badges, 83 Alternate plumage, 83 Bancroft, G. T., see Strong, A. M., 894 Barber, David R., and Thomas E. Martin, Influence of Amazilia versicolor, 780 American Coot, 91 Alternate Host Densities on Brown-headed Kestrel, 806 Cowbird Parasitism Rates in Black-capped Vir-Robin, 554 eos, 595 White Ibis, 191 Barkan, C. P. L., see Lemmon, D., 424 The American West, 1 Barlow, J. C., see Lang, A. L., 413 Barn Owl, 789. 969, 972 Ammon, Elisabeth M., and Peter B. Stacey, Avian Nest Success in Relation to Past Grazing Re-Barrios, R., see Valera, F., 765 gimes in a Montane Riparian System, 7 Basic plumage, 83 Bay of Fundy, 206 Amphispiza belli, 217 Anas discors, 543, 997 Bech, Claus, Augusto S. Abe, John Fleng Steffensen, platyrhynchos, 224 Martin Berger and Jose Eduardo P. W. Bicudo, rubripes, 231 Torpor in Three Species of Brazilian Hummingbirds Under Semi-Natural Conditions, 780 Ancestor reconstruction, 981 Andersen, D. E., see Plumpton, D. L., 888 Becker, Benjamin H., Steven R. Beissinger and Harry Anderson, D. J., see R. A. Browne, 812 R. Carter, At-Sea Density Monitoring of Mar-Ankney, C. D., see Arnold, T. W., 91; Sedinger, J. S., bled Murrelets in Central California: Method-836 ological Considerations, 743 Becker, Peter H., and Helmut Wendeln, A New Ap-Antarctica, 994

[1030]

Begging, 514

406

plication for Transponders in Population Ecol-

Rearing, by Ada C. Fowler and Craig R. Ely,

Behavior of Cackling Canada Geese During Brood

ogy of the Common Tern, 534

Bednarz, J. C., see Marzluff, J. M., 567

Beissinger, S. R., see Becker, B. H., 743; Casagrande, D. G., 445

Belize, 955

Bell, Christopher P., Leap-frog Migration in the Fox Sparrow: Minimizing the Cost of Spring Migration, 470

Bell, Douglas A., Hybridization and Reproductive Performance in Gulls of the *Larus glaucescens-oc-cidentalis* Complex, 585

Belterman, R. H. R., see Cavallo, D., 829

Berger, M., see Bech, C., 780

Berkelman, James, Food Habits of the Madagascar Buzzard in the Rain Forest of the Masoala Peninsula, 833

Bias Associated with Diet Samples in Audouin's Gulls, by Jacob González-Solís, Daniel Oro, Vittorio Pedrocchi, Lluis Jover and Xavier Ruiz, 773

Biased Detection of Bird Vocalizations Affects Comparisons of Bird Abundance Among Forested Habitats, by Jim Schieck, 179

Bicudo, J. E. P. W., see Bech, C., 780

Biogeography, 490

Biotelemetry, 231

Bird blow-flies, 271

communities, 719, 955

surveys, 179

Bird Life of Woodland and Forest, by Robert J. Fuller, reviewed by Thomas C. Grubb, 843

Bird, D. M., see Duke, G. E., 123

Bird-habitat relationships, 337

Bird-Habitat Relationships in a Vegetational Gradient in the Andes of Central Chile, by Cristian F. Estades, 719

A Birder's West Indies: An Island-by-Island Tour, by Roland H. Wauer, reviewed by John Faaborg, 560

Birds and Climate Change by John F. Burton, reviewed by Nicholas L. Rodenhouse, 242

Birds of Kenya and Northern Tanzania, by D. A. Zimmerman, D. A. Turner, and D. J. Pearson, reviewed by Robert B. Payne, 559

Birds of Southern Africa, by Ian Sinclair, Phil Hockey, and Warwick Tarboton, reviewed by David Cameron Duffy, 1012

Birds of Tropical America: A Watcher's Introduction to Behavior, Breeding and Diversity, by Steven Hilty, reviewed by Lisa J. Petit, 842

Birkhead, T. R., see Dixon, A., 966

Black Brant, 25, 381

Duck, 231

Skimmer, 191

Swift, 514

Black-capped Chickadee, 424

Vireo, 595

Black-crowned Night-Heron, 372

Black-faced Sheathbill, 818

Black-tailed prairie dog, 888

Blackwell, R. C., see Zink, R. M., 132

Blanken, M. S., see Nol, E., 389

Bledsoe, Anthony H., Robert J. Raikow and Loretta S. Crowell, Intraspecific Variation and Evolutionary Reduction in Tendon Ossification in *Den-drocincla* Woodcreepers, 503

Blood parasite, 520

Blue Jay, 434 Petrel, 985

Blue-winged Teal, 543, 997

Blums, Peter, Aivars Mednis and Robert G. Clark, Effect of Incubation Body Mass on Reproductive Success and Survival of Two European Diving Ducks: A Test of the Nutrient Limitation Hypothesis, 916

Bock, Carl E., The Role of Ornithology in Conservation of the American West, 1

Body Composition of the European Barn Owl During the Nonbreeding Period, by Sylvie Massemin, René Groscolas and Yves Handrich, 789

Body mass, 916

size, 253

temperature, 104, 780

Bollinger, E. K., see Peer, B. D., 151; Wood, D. R., 851

Boreal, 976

Boyd, W. S., see Cooke, F., 83

Brachyramphus marmoratus, 743

Braden, Gerald T., Robert L. McKernan and Shawn M.
Powell, Effects of Nest Parasitism by the
Brown-headed Cowbird on Nesting Success of
the California Gnatcatcher, 858

Branta bernicla nigricans, 25, 381 canadensis minima, 406, 1007

Brazil, 201

Breeding birds, 708, 976

grounds, 73

Breitwisch, R., see Eckerle, K. P., 169

Bretagnolle, Vincent, and Fabrice Genevois, Geographic Variation in the Call of the Blue Petrel: Effects of Sex and Geographical Scale, 985

Bried, Joël, and Pierre Jouventin, Morphological and Vocal Variation Among Subspecies of the Black-faced Sheathbill, 818

Briefly Noted Book Reviews, by Kimberly G. Smith, 246, 563, 1016

Brodin, A., see Olsson, O., 994

Brokaw, N. V. L., see Whitman, A. A., 955

Brood density, 406

parasitism, 151, 169, 220, 595, 622

rearing, 91, 406

Brood Parasitism, Nest Predation, and Season-Long Reproductive Success of a Tropical Island Endemic, by Bethany L. Woodworth, 605

Brown, C. R., A review of *Polygyny and Sexual Selection in Red-winged Blackbirds* by William A. Searcy and Ken Yasukawa, 238

Brown-headed Cowbird, 151, 169, 595, 851, 858, 866
Browne, Robert A., David J. Anderson, Jeffrey N.
Houser, Felipe Cruz, Kevin J. Glasgow, Cathleen Natividad Hodges and Greg Massey, Genetic Diversity and Divergence of Endangered Galapagos and Hawaiian Petrel Populations,

Bruderer, B., see Spaar, R., 458

Brunton, Dianne, Impacts of Predators: Center Nests are Less Successful than Edge Nests in a Large Nesting Colony of Least Terns, 372

Burger, Joanna, Effects of Oiling on Feeding Behavior of Sanderlings and Semipalmated Plovers in New Jersey, 290 Burhans, Dirk E., Habitat and Microhabitat Features Associated with Cowbird Parasitism in Two Forest Edge Cowbird Hosts, 866

Buteo brachypterus, 833

 $\mathbf{C}$ 

Cabana, T., see Rojas, L. M., 191 Caching, 756 Cackling Canada Goose, 406 Calidris alba, 290 alpina, 906 pusilla, 206

California, 327

Canada Goose, 406, 1007

Capen, D. E., see Germaine, S. S., 708

Capp, M. S., see Searcy, W. A., 826

Carpodacus mexicanus, 942

Carter, H. R., see Becker, B. H., 743

Casagrande, David G., and Steven R. Beissinger, Evaluation of Four Methods for Estimating Parrot Population Size, 445

Cassin's Auklet, 361

Cavallo, Delia, Raffaele De Vita, Patrizia Eleuteri, Robert H. R. Belterman and Giacomo Dell'Omo, Sex Identification in the Egyptian Vulture by Flow Cytometry and Cytogenetics, 829

Cavity nester, 806, 880 reuse, 880

Central Chile, 719

Centrocercus urophasianus, 933

Cercomacra tyrannina, 512

Changes in King Penguin Breeding Cycle in Response to Food Availability, by Olof Olsson and Anders Brodin, 994

Characteristics and Competition for Nest Cavities in Burrowing Procellariiformes, by Jaime A. Ramos, Luis R. Monteiro, Encarnacion Sola and Zita Moniz, 634

Characteristics of Nesting Areas Used by San Clemente Island Sage Sparrows, by David W. Willey, 217

Charadrii, 337

Charadrius, 47

semipalmatus, 290, 389, 803

Chase frequency, 162

Chick mortality, 372

Chionis minor, 818

Chitin, 554

Chrysocyon brachyurus, 201

Cicus pygargus, 458

Circulating Prolactin of Incubating Male Wilson's Phalaropes Corresponds to Clutch-Size and Environmental Stress, by David J. Delehanty, Lewis W. Oring, Albert J. Fivizzani and Mohamed E. El Halawani, 397

Circus aeruginosus, 458 macrourus, 458

Clark, R. G., see Blums, P., 916

Clavell, J., see Sol, D., 39

Climate, 389

Clutch completion dates, 389

Clutch size, 91, 381, 389, 397, 836, 933, 997

The Coevolutionary Process by John N. Thompson, reviewed by Christopher C. Smith, 244

Colinus virginianus, 478

Collias, Nicholas E., On the Origin and Evolution of Nest Building by Passerine Birds, 253

Colon, 123

Colonial breeding, 372

Colonization, 942

Colony departure, 345

Colorado, 880

Colorimetric variation, 132

Colwell, Mark A., and Sarah L. Dodd, Environmental and Habitat Correlates of Pasture Use by Nonbreeding Shorebirds, 337

Common Grackle, 151

Pochard, 916

Tern, 534

Communication, 798

Comparative Analysis of the Vocalizations of *Hylor-chilus* Wrens, by Héctor Gómez de Silva G., 981

Comparison of Pellets Versus Collected Birds for Sampling Diets of Double-crested Cormorants, by Clayton E. Derby and James R. Lovvorn, 549

A Comparison of Two Bird Survey Techniques Used in a Subtropical Forest, by Andrew A. Whitman, John M. Hagan III and Nicholas V. L. Brokaw, 955

Cone, 191

Conservation, 1, 567

Cooke, Fred, Gregory J. Robertson, R. Ian Goudie and W. Sean Boyd, Molt and the Basic Plumage of Male Harlequin Ducks, 83

Cooperative Breeding in Gray Jays: Philopatric Offspring Provision Juvenile Siblings, by Thomas A. Waite and Dan Strickland, 523

Corophium volutator, 206

Corre, Matthieu L., Diving Depths of Two Tropical Pelecaniformes: The Red-tailed Tropicbird and the Red-footed Booby, 1004

Corre, Matthieu L., and Pierre Jouventin, Kleptoparasitism in Tropical Seabirds: Vulnerability and Avoidance Responses of a Host Species, the Red-footed Booby, 162

Corticosterone Levels During Nest Departure of Nestling American Kestrels, by Julie Heath, 806

Corvidae, 490

Coturnix japonica, 990

Cracraft, J., see de los Monteros, A. E., 490

Cranes: Their Biology, Husbandry, and Conservation, edited by David H. Ellis, George F. Gee, and Clair M. Mirande, reviewed by Howard E. Hunt, 1015

Crawshaw, P. G., Jr., see Silveira, L., 201

Crow vocalization, 990

Crowell, L. S., see Bledsoe, A. H., 503

Cruz, F., see R. A. Browne, 812

Cuckoo, 815

Cuculus canorus, 815

Cultural Evolution in the Eurasian Tree Sparrow: Divergence Between Introduced and Ancestral Populations, by Anthony L. Lang and Jon C. Barlow, 413

Cuticle, 554

Cyanocitta cristata, 434, 756 Cypeseloides niger, 514 Cytochrome b, 490

D

Dark-rumped Petrel, 812 Darveau, M., see Rail, J., 976 Davidar, P., see Wagner, R. H., 520 Day, R. H., see Murphy, S. M., 299

Day, Robert H., Stephen M. Murphy, John A. Wiens, Gregory D. Hayward, E. James Harner and Brian E. Lawhead, Effects of the *Exxon Valdez* Oil Spill on Habitat Use by Birds Along the Kenai Peninsula, Alaska, 728

de los Monteros, Alejandro E., and Joel Cracraft, Intergeneric Relationships of the New World Jays Inferred from Cytochrome *b* Gene Sequences, 490

de Silva, Héctor G., Comparative Analysis of the Vocalizations of *Hylorchilus* Wrens, 981

De Vita, R., see Cavallo, D., 829

del Rio, Carlos M., A review of Avian Energetics and Nutritional Ecology, edited by Cynthia Carey, 1011

Delayed dispersal, 523

Delehanty, David J., Lewis W. Oring, Albert J. Fivizzani and Mohamed E. El Halawani, Circulating Prolactin of Incubating Male Wilson's Phalaropes Corresponds to Clutch-Size and Environmental Stress, 397

Dell'Omo, G., see Cavallo, D., 829

Demography, 605 Dendrocolaptinae, 503

Dendroica townsendi, 271

Derby, Clayton E., and James R. Lovvorn, Comparison of Pellets Versus Collected Birds for Sampling Diets of Double-crested Cormorants, 549

Derrickson, K. C., see Fleischer, R. C., 512

Descending flight, 1007

Desrochers, A., see Rail, J., 976

Detection biases, 179

Dialect, 942

Diet, 671, 833

assessment, 327, 773 determination, 765

sampling, 549

plasticity, 681

Digestion, 314

Digestion of Chitin by Northern Bobwhites and American Robins, by Jennifer I. Weiser, Adam Porth, David Mertens and William H. Karasov, 554

Diomedea exulans chionoptera, 58

Direct observation, 773

Directional selection, 503

Dispersal, 25

Distance sampling methods, 743

The Distribution of Neotropical Migrant Birds Wintering in the El Cielo Biosphere Reserve, Tamaulipas, Mexico, by Wendy K. Gram and John Faaborg, 658

Disturbance, 290

Diurnal and Nocturnal Visual Function in Two Tactile Foraging Waterbirds: The American White Ibis and the Black Skimmer, by Luz Marina Rojas, Raymond McNeil, Thérése Cabana and Pierre Lachapelle, 191

Diurnal Variation of Metabolic Responses to Short-Term Fasting in Passerine Birds During the Postbreeding, Molting and Migratory Period, by Susanne Jenni-Eiermann and Lukas Jenni, 113

Diving depth, 1002

Diving Depths of Two Tropical Pelecaniformes: The Red-tailed Tropicbird and the Red-footed Booby, by Matthieu Le Corre, 1004

Dixon, A., and T. R. Birkhead, Reproductive Anatomy of the Reed Bunting: A Species Which Exhibits a High Degree of Sperm Competition Through Extra-pair Copulations, 966

Dixon, Mark D., W. Carter Johnson and Curtis S. Adkisson, Effects of Caching on Acorn Tannin Levels and Blue Jay Dietary Performance, 756

DNA fingerprinting, 213, 512

Do Blood Parasites Affect Paternity, Provisioning and Mate-Guarding in Purple Martins?, by Richard H. Wagner, Priya Davidar, Malcolm D. Schug and Eugene S. Morton, 520

Do the Contents of Barn Owl Pellets Accurately Represent the Proportion of Prey Species in the Field?, by Yoram Yom-Tov and David Wool,

Dodd, S. L., see Colwell, M. A., 337

Dominance, 642

hierarchies, 434

rank, 424

Double-crested Cormorant, 549

Doudenum, 123

Dove, C. J., Quantification of Microscopic Feather Characters Used in the Identification of North American Plovers, 47

Drumming, 798

Duffy, David C., A review of Newman's Birds of Southern Africa, by Kenneth Newman, and Birds of Southern Africa, by Ian Sinclair, Phil Hockey, and Warwick Tarboton, 1012

Duke, G. E., J. Reynhout, A. L. TerEick, A. E. Place and D. M. Bird, Gastrointestinal Morphology and Motility in American Kestrels Receiving High or Low Fat Diets, 123

Dunlin, 906

Duodenal reflux, 123

Dusky Antbird, 512

 $\mathbf{E}$ 

Eastern Screech-Owl, 213

Eberhardt, Laurie S., A Test of an Environmental Advertisement Hypothesis for the Function of Drumming in Yellow-bellied Sapsuckers, 798

Eckerle, Kevin P., and Randall Breitwisch, Reproductive Success of the Northern Cardinal, a Large Host of Brown-headed Cowbirds, 169

Ecological Consequences of Nest Site Fidelity in Black Brant, by Mark S. Lindberg and James S. Sedinger, 25

Ecological perturbation, 728

Edges, 14

The Effect of Carrying Devices on Breeding Royal Penguins, by Cindy L. Hull, 530

Effect of Egg Covering and Habitat on Nest Destruc-

tion by House Wrens, by Douglas W. White and E. Dale Kennedy, 873

Effect of Incubation Body Mass on Reproductive Success and Survival of Two European Diving Ducks: A Test of the Nutrient Limitation Hypothesis, by Peter Blums, Aivars Mednis and Robert G. Clark. 916

Effectiveness, Biases and Mortality in the Use of Apomorphine for Determining the Diet of Granivorous Passerines, by Francisco Valera, Jose E. Gutjérrez and Rafael Barrios, 765

Effects of Caching on Acorn Tannin Levels and Blue Jay Dietary Performance, by Mark D. Dixon, W. Carter Johnson and Curtis S. Adkisson, 756

Effects of Nest Parasitism by the Brown-headed Cowbird on Nesting Success of the California Gnatcatcher, by Gerald T. Braden, Robert L. McKernan and Shawn M. Powell, 858

Effects of Oiling on Feeding Behavior of Sanderlings and Semipalmated Plovers in New Jersey, by Joanna Burger. 290

The Effects of Parental Quality and Timing of Breeding on the Growth of Nestling Thick-billed Murres, by J. Mark Hipfner, 353

Effects of Small Forest Openings on the Breeding Bird Community in a Vermont Hardwood Forest, by Stephen S. Germaine, Stephen H. Vessey and David E. Capen, 708

Effects of Spring Environment on Nesting Phenology and Clutch Size of Black Brant, by Mark S. Lindberg, James S. Sedinger and Paul L. Flint, 381

Effects of the Exxon Valdez Oil Spill on Habitat Use by Birds Along the Kenai Peninsula, Alaska, by Robert H. Day, Stephen M. Murphy, John A. Wiens, Gregory D. Hayward, E. James Harner and Brian E. Lawhead, 728

Effects of the Exxon Valdez Oil Spill on Birds: Comparisons of Pre- and Post-Spill Surveys in Prince William Sound, Alaska, by Stephen M. Murphy, Robert H. Day, John A. Wiens and Keith R. Parker, 299

Effects of the Landscape on Shorebird Movements at Spring Migration Stopovers, by Adrian H. Farmer and Alfred H. Parent, 698

Egg covering, 873

destruction, 873

metabolism, 224

rejection, 151

size, 389

Egg Removal by Brown-headed Cowbirds: A Field Test of the Host Incubation Efficiency Hypothesis, by Douglas R. Wood and Eric K. Bollinger, 851

Egretta thula, 894

tricolor, 894

Egyptian Vulture, 829

El Halawani, M. E., see Delehanty, D. J., 397

Electroretinogram, 191

Eleuteri, P., see Cavallo, D., 829

Ely, C. R., see Fowler, A. C., 406

Emas National Park, 201

Emberiza schoeniclus, 966

Emetic, 765

Energetics, 91, 538

Energetics, Thermoregulation and Nocturnal Hypothermia in Australian Silvereyes, by Tracy A. Maddocks and Fritz Geiser. 104

Environmental and Habitat Correlates of Pasture Use by Nonbreeding Shorebirds, by Mark A. Colwell and Sarah L. Dodd, 337

Environmental impact, 728

Estades, Cristian F, Bird-Habitat Relationships in a Vegetational Gradient in the Andes of Central Chile. 719

Estradiol Dosage and the Solicitation Display Assay in Red-winged Blackbirds, by William A. Searcy and Michael S. Capp, 826

Eudocimus ruber, 191

Eudyptes schlegeli, 530

Eupetomena macroura, 780

Eurasian Tree Sparrow, 413

Europa Island, 1004

European Nuthatch, 526

Evaluation of Four Methods for Estimating Parrot Population Size, by David G. Casagrande and Steven R. Beissinger. 445

Evapotranspiration, 470

Everglades, 894

Evolutionary reduction, 503

Experimental pond communities, 210

Explanations for the Infrequent Cowbird Parasitism on Common Grackles, by Brian D. Peer and Eric K. Bollinger, 151

Extra-pair copulation, 213, 966

fertilization, 213, 512, 520

Exxon Valdez, 299, 728

## F

Faaborg, J., see Gram, W. K., 658

Faaborg, J., A review of A Birder's West Indies: An Island-by-Island Tour, by Roland H. Wauer, 560

Factors Affecting the Success of Colony Departure by Thick-billed Murre Chicks, by H. Grant Gilchrist and Anthony J. Gaston, 345

Falco femoralis, 201

mexicanus, 567

sparverius, 123, 806

Farmer, A. H., and Alfred H. Parent, Effects of the Landscape on Shorebird Movements at Spring Migration Stopovers, 698

Fasting, 113

Fat digestibility, 554

Fat Loads and Flightlessness in Wilson's Phalaropes, by Joseph R. Jehl, Jr., 538

Feathers, 47

Feeding behavior, 201, 406

ecology, 1004

Feldheim, Cliff L., The Length of Incubation in Relation to Nest Initiation Date and Clutch Size in Dabbling Ducks, 997

Female age, 282

size, 389

Female Hooded Merganser Body Mass During Nesting, by Michael C. Zicus, 220

Fenske-Crawford, T. J., and Gerald J. Niemi, Predation

of Artificial Ground Nests at Two Types of Edges in a Forest-Dominated Landscape, 14

Feria, E., see Sol, D., 39

Ferruginous Hawk, 888

Field Sparrow, 866

Fish-eating birds, 549

Fivizzani, A. J., see Delehanty, D. J., 397

Flapping-gliding flight, 458

Fledging, 345, 806

Fledgling growth rate, 361

Fleischer, Robert C., Cheryl L. Tarr, Eugene S. Morton, Alexandra Sangmeister and Kim C. Derrickson, Mating System of the Dusky Antbird, a Tropical Passerine, as Assessed by DNA Fingerprinting, 512

Fleming, W. J., see Harms, C. A., 231

The Flight of the Red Knot by Brian Harrington, reviewed by Theunis Piersma, 239

Flight strategy, 458

Flightlessness, 538

Flint, P. L., see Grand, J. B., 926; Lindberg, M. S., 381; MacCluskie, M. C., 224

Flow cytometry, 829

Flynn, L., see Nol, E., 389

Food Habits of the Madagascar Buzzard in the Rain Forest of the Masoala Peninsula, by James Berkelman, 833

Food remains, 773

return, 642

samples comparison, 773

Foraging, 201, 203, 290, 1002

behavior, 530

ecology, 671

patterns, 210

The Foraging Behavior of Semipalmated Sandpipers in the Upper Bay of Fundy: Stereotyped or Prey-Sensitive?, by W. Herbert Wilson, Jr. and Erin R. Vogel, 206

Forest gaps, 976

openings, 708

Forests, 14, 976

Forpus passerinus, 445

Fowler, Ada C., and Craig R. Ely, Behavior of Cackling Canada Geese During Brood Rearing, 406

Fox Sparrow, 470

Fragmentation, 14

Free fatty acids, 113

Frugivory, 681

Fuego-Patagonia, 139

Fulcia americana, 91

Furnariidae, 253

G

Gadwall, 997

Galápagos Petrel, 812

Gaston, A. J., see Gilchrist, H. G., 345

Gastrointestinal Morphology and Motility in American Kestrels Receiving High or Low Fat Diets, by G. E. Duke, J. Reynhout, A. L. TerEick, A. E. Place and D. M. Bird, 123

Geiser, F., see Maddocks, T. A., 104

Genetic Diversity and Divergence of Endangered Galápagos and Hawaiian Petrel Populations, by Robert A. Browne, David J. Anderson, Jeffrey N. Houser, Felipe Cruz, Kevin J. Glasgow, Cathleen Natividad Hodges and Greg Massey, 812

Genevois, F., see Bretagnolle, V., 985

Genome size, 829

Geographic variation, 651

Geographic Variation in the Call of the Blue Petrel: Effects of Sex and Geographical Scale, by Vincent Bretagnolle and Fabrice Genevois, 985

Germaine, Stephen S., Stephen H. Vessey and David E. Capen, Effects of Small Forest Openings on the Breeding Bird Community in a Vermont Hardwood Forest, 708

Gibbs, H. L., see Jones, D. A., 815

Gilchrist, H. G., and Anthony J. Gaston, Factors Affecting the Success of Colony Departure by Thick-billed Murre Chicks, 345

Glaciation, 139

Glasgow, K. J., see R. A. Browne, 812

Gnatcatcher, 858

González, José A., Seasonal Variation in the Foraging Ecology of the Wood Stork in the Southern Llanos of Venezuela, 671

González-Solís, Jacob, Daniel Oro, Vittorio Pedrocchi, Lluis Jover and Xavier Ruiz, Bias Associated with Diet Samples in Audouin's Gulls, 773

Goodson, James L., and Elizabeth Adkins-Regan, Playback of Crows of Male Japanese Quail Elicits Female Phonotaxis, 990

Goudie, R. I., see Cooke, F., 83

Gram, Wendy K., and John Faaborg, The Distribution of Neotropical Migrant Birds Wintering in the El Cielo Biosphere Reserve, Tamaulipas, Mexico, 658

Grand, James B., and Paul L. Flint, Productivity of Nesting Spectacled Eiders on the Lower Kashunuk River, Alaska, 926

Granivorous birds, 765

Gray Jay, 523

Grazing, 7

Great Frigatebird, 162

Green-rumped Parrotlet, 445

Grinnell, Joseph, 1

Groscolas, R., see Massemin, S., 789

Grouse, 314

Growth, 353

Grubb, Thomas C., A review of *Bird Life of Woodland* and Forest, by Robert J. Fuller, 843

Gulls, 585

Gutiérrez, J. E., see Valera, F., 765

### н

Habitat and Microhabitat Features Associated with Cowbird Parasitism in Two Forest Edge Cowbird Hosts, by Dirk E. Burhans, 866

Habitat selection, 567, 894

use, 728

Habitat Selection by the Monk Parakeet During Colonization of a New Area in Spain, by Daniel Sol, David M. Santos, Elías Feria and Jordi Clavell, 39

Habitat Use and Time Budgeting by Wintering Ferruginous Hawks, by David L. Plumpton and David E. Andersen, 888

Haemoproteus, 520

Hagan, J. M. III, see Whitman, A. A., 955

Halobaena caerulea, 985

Handel, C. M., see Matsuoka, S. M., 271

Handrich, Y., see Massemin, S., 789; Massemin, S., 969

Härdling, Roger, Hans Källander and Jan-Åke Nilsson, Memory for Hoarded Food: An Aviary Study of the European Nuthatch, 526

Harlequin Ducks, 83

Harms, Craig A., W. James Fleming and Michael K. Stoskopf, A Technique for Dorsal Subcutaneous Implantation of Heart Rate Biotelemetry Transmitters in Black Ducks: Application in an Aircraft Noise Response Study, 231

Harner, E. J., see Day, R. H., 728

Harrier, 458

Hatch, Margret I., Variation in Song Sparrow Nest Defense: Individual Consistency and Relationship to Nesting Success, 282

Hatching success, 634

Hawaiian Petrel, 812

Hayward, G. D., see Day, R. H., 728

Heart rate, 231

Heath, Julie, Corticosterone Levels During Nest Departure of Nestling American Kestrels, 806

Helping behavior, 523

Herbivory, 314

Higher Winter Mortality of the Barn Owl Compared to the Long-eared Owl and the Tawny Owl: Influence of Lipid Reserves and Insulation?, by Sylvie Massemin and Yves Handrich, 969

Hipfner, J. M., The Effects of Parental Quality and Timing of Breeding on the Growth of Nestling Thick-billed Murres, 353

Histrionicus histrionicus, 83

Hoarding, 526

Hobson, K. A., see Sydeman, W. J., 327

Hodges, C. N., see R. A. Browne, 812

Hohman, William L., A review of *Hybrid Ducks: A Contribution Towards an Inventory*, by Eric Gillham and Barry Gillman, 562

Hohman, William L., A review of Ruddy Ducks & Other Stifftails: Their Behavior and Biology, by Paul A. Johnsgard and Montserrat Carbonell, 844

Hohman, William L., Scott W. Manley and David Richard, Relative Costs of Prebasic and Prealternate Molts for Male Blue-winged Teal, 543

Home range, 567

Hooded Merganser, 220

Host selection, 151

Hostile display, 514

House Finch, 942 Wren, 873

Houser, J. N., see R. A. Browne, 812

Hughes, M., see Searcy, W. A., 651

Huin, N., see Prince, P. A., 58

Hull, Cindy L., The Effect of Carrying Devices on Breeding Royal Penguins, 530

Hummingbirds, 780

Hunt, Howard E., A review of Cranes: Their Biology, Husbandry, and Conservation, edited by David H. Ellis, George F. Gee, and Clair M. Mirande, 1015

Hunting Association Between the Aplomado Falcon (Falco femoralis) and the Maned Wolf (Chrysocyon brachyurus) in Emas National Park, Central Brazil, by Leandro Silveira, Anah T. A. Jácomo, Flávio H. G. Rodrigues and Peter G. Crawshaw, Jr., 201

Huot, J., see Rail, J., 976

Hybrid Ducks: A Contribution Towards an Inventory, by Eric Gillham and Barry Gillman, reviewed by William L. Hohman, 562

Hybridization and Reproductive Performance in Gulls of the *Larus glaucescens-occidentalis* Complex, by Douglas A. Bell, 585

Hydrological Constraints on Tricolored Heron and Snowy Egret Resource Use, by Allan M. Strong, G. Thomas Bancroft and Susan D. Jewell, 894

Hylorchilus, 981

I

Image intensification radiology, 123

Impacts of Predators: Center Nests are Less Successful than Edge Nests in a Large Nesting Colony of Least Terns, by Dianne Brunton, 372

Incubation, 91, 224, 397

body mass, 220

length, 224

Indigo Bunting, 866

Influence of Alternate Host Densities on Brown-headed Cowbird Parasitism Rates in Black-capped Vireos, by David R. Barber and Thomas E. Martin, 595

The Influence of Habitat, Prey Abundance, Sex, and Breeding Success on the Ranging Behavior of Prairie Falcons, by John M. Marzluff, Bryan A. Kimsey, Linda S. Schueck, Mary E. McFadzen, Mark S. Vekasy and James C. Bednarz, 567

Insectivore, 554

Insulation, 969

Interference competition, 634

Intergeneric Relationships of the New World Jays Inferred from Cytochrome *b* Gene Sequences, by Alejandro Espinosa de los Monteros and Joel Cracraft, 490

Intra- and Interspecific Sequence Variation in a Portion of the Mitochondrial ND6 Gene in Cuckoos, by David A. Jones and H. Lisle Gibbs, 815

Intraspecific Competition Influences Food Return— Predation Risk Trade-Off by White-crowned Sparrows, by Robert Slotow and Ellen Paxinos, 642

Intraspecific Variability in Nestling Growth and Fledging Behavior of Cassin's Auklets at Triangle Island, British Columbia, by Yolanda E. Morbey and Ronald C. Ydenberg, 361

Intraspecific Variation and Evolutionary Reduction in Tendon Ossification in *Dendrocincla* Woodcreepers, by Anthony H. Bledsoe, Robert J. Raikow and Loretta S. Crowell, 503

Invasive species, 39

I

Jácomo, A. T. A., see Silveira, L., 201

Jahncke, J., see Zavalaga, C. B., 1002

Japanese Quail, 990

Jarsky, Tim, and Richard Stephenson, Absence of Locomotor-Respiratory Coupling During Simulated Descending Flight in the Cackling Canada Goose, 1007

Jays, 756

Jehl, Joseph R., Jr., Fat Loads and Flightlessness in Wilson's Phalaropes, 538

Jenni-Eiermann, Susanne, and Lukas Jenni, Diurnal Variation of Metabolic Responses to Short-Term Fasting in Passerine Birds During the Postbreeding, Molting and Migratory Period, 113

Jennings, Michael D., A review of *Mapping the Diversity of Nature*, edited by Ronald I. Miller, 557

Jewell, S. D., see Strong, A. M., 894

Johnson, W. C., see Dixon, M. D., 756

Jones, David A., and H. Lisle Gibbs, Intra-and Interspecific Sequence Variation in a Portion of the Mitochondrial ND6 Gene in Cuckoos, 815

Jongejan, G., see Rogers, C. M., 622

Jouventin, P., see Bried, J., 818; Corre, M. L., 162

Jover, L., see González-Solís, J., 773

#### K

Källander, H., see Härdling, R., 526

Kamil, Alan C., A review of *The Minds of Birds*, by Alexander F. Skutch, 842

Karasov, W. H., see Weiser, J. I., 554

Karyotype, 829

Kennedy, E. D., see White, D. W., 873

Kimsey, B. A., see Marzluff, J. M., 567

King Penguin, 994

Klatt, P. H., see Lawless, S. G., 213

Kleptoparasitism in Tropical Seabirds: Vulnerability and Avoidance Responses of a Host Species, the Red-footed Booby, by Matthieu Le Corre and Pierre Jouventin, 162

## $\mathbf{L}$

Lachapelle, P., see Rojas, L. M., 191

Lang, Anthony L., and Jon C. Barlow, Cultural Evolution in the Eurasian Tree Sparrow: Divergence Between Introduced and Ancestral Populations, 413

Lanius excubitor, 203

Lank, David B., and Frank A. Pitelka, A review of Leks, by Jacob Höglund and Rauno V. Alatalo, and Arena Birds: Sexual Selection and Behavior, by Paul A. Johnsgard, 558

Larus audouinii, 773

glaucescens, 585

occidentalis, 585

Lawhead, B. E., see Day, R. H., 728

Lawless, Sunni G., Gary Ritchison, Paul H. Klatt and David F. Westneat, The Mating Strategies of Eastern Screech-Owls: A Genetic Analysis, 213

Leap-frog Migration in the Fox Sparrow: Minimizing the Cost of Spring Migration, by Christopher P. Bell, 470 Least Tern, 372

Leks, by Jacob Höglund and Rauno V. Alatalo, reviewed by David B. Lank and Frank A. Pitelka, 558

Lemmon, David, Matthew L. Withiam and Christopher P. L. Barkan, Mate Protection and Winter Pairbonds in Black-capped Chickadees, 424

The Length of Incubation in Relation to Nest Initiation
Date and Clutch Size in Dabbling Ducks, by
Cliff L. Feldheim, 997

Life-history, 933

trade-off, 994

Lifetime identification, 534

Lindberg, Mark S., and James S. Sedinger, Ecological Consequences of Nest Site Fidelity in Black Brant, 25

Lindberg, Mark S., James S. Sedinger and Paul L. Flint, Effects of Spring Environment on Nesting Phenology and Clutch Size of Black Brant, 381

Line transect, 445, 743

llanos of Venezuela, 671

Local Survival of Dunlin Wintering in California, by Nils Warnock, Gary W. Page and Brett K. Sandercock, 906

Locomotor-respiratory coupling, 1007

Logging, 976

Logistic regression, 337

Long-eared Owl, 969

Lophodytes cucullatus, 220

Lovvorn, J. R., see Derby, C. E., 549

#### M

MacCluskie, Margaret C., Paul L. Flint and James S. Sedinger, Variation in Incubation Periods and Egg Metabolism in Mallards: Intrinsic Mechanisms to Promote Hatch Synchrony, 224

Madagascar Buzzard, 833

Maddocks, Tracy A., and Fritz Geiser, Energetics, Thermoregulation and Nocturnal Hypothermia in Australian Silvereyes, 104

Mallard, 224, 997

Manley, S. W., see Hohman, W. L., 543

Mapping the Diversity of Nature, edited by Ronald I.
Miller, reviewed by Michael D. Jennings, 557

Marbled Murrelet, 743

Marin, Manuel, On the Behavior of the Black Swift, 514

Marine birds, 299

food web, 327

Marking techinique, 534

Martin, T. E., see Barber, D. R., 595

Marzluff, John M., Bryan A. Kimsey, Linda S. Schueck, Mary E. McFadzen, Mark S. Vekasy and James C. Bednarz, The Influence of Habitat, Prey Abundance, Sex, and Breeding Success on the Ranging Behavior of Prairie Falcons, 567

Masked Booby, 162

Massemin, Sylvie, René Groscolas and Yves Handrich, Body Composition of the European Barn Owl During the Nonbreeding Period, 789

Massemin, Sylvie, and Yves Handrich, Higher Winter Mortality of the Barn Owl Compared to the

1038 **INDEX TO VOLUME 99** Long-eared Owl and the Tawny Owl: Influence of Lipid Reserves and Insulation?, 969 Massey, G., see R. A. Browne, 812 Mate Protection and Winter Pair-bonds in Black-capped Chickadees, by David Lemmon, Matthew L. Withiam and Christopher P. L. Barkan, 424 The Mating Strategies of Eastern Screech-Owls: A Genetic Analysis, by Sunni G. Lawless, Gary Ritchison, Paul H. Klatt and David F. Westneat, Mating System of the Dusky Antbird, a Tropical Passerine, as Assessed by DNA Fingerprinting, by Robert C. Fleischer, Cheryl L. Tarr, Eugene S. Morton, Alexandra Sangmeister and Kim C. Derrickson, 512 Matsuoka, S. M., Colleen M. Handel and Daniel D. Roby, Nesting Ecology of Townsend's Warblers in Relation to Habitat Characteristics in a Mature Boreal Forest, 271 Maurer, B. A., A Plethora of Conservation Biology Texts, 845 Maximal thermogenic capacity, 478 Maximum Dive Depths of the Peruvian Diving-petrel, by Carlos B. Zavalaga and Jaime Jahncke, 1002 Mayfield analysis, 169 McCarty, John P., Aquatic Community Characteristics

Influence the Foraging Patterns of Tree Swallows, 210 McFadzen, M. E., see Marzluff, J. M., 567 McKernan, R. L., see Braden, G. T., 858 McLaren, E. B., see Sydeman, W. J., 327 McNeil, R., see Rojas, L. M., 191 Mednis, A., see Blums, P., 916

Melanotrochilus fuscus, 780 Melospiza melodia, 282, 622, 651

Memory for Hoarded Food: An Aviary Study of the European Nuthatch, by Roger Härdling, Hans Källander and Jan-Åke Nilsson, 526

Mertens, D., see Weiser, J. I., 554

Metabolic rate, 104 Metabolism, 478 Metabolizability, 554 Metapopulations, 622 Mexico, 658, 981

Microcharacters, 47

Microfilaria, 520

Migration, 113, 206, 538, 681, 698 route, 470

timing, 73 Migration by Flapping or Soaring: Flight Strategies of Marsh, Montagu's and Pallid Harriers in Southern Israel, by Reto Spaar and Bruno Bru-

derer, 458 Mimetic differentiation, 413

The Minds of Birds, by Alexander F. Skutch, reviewed by Alan C. Kamil, 842

Minnesota, 14 Mist nets, 955

Mitochondrial DNA, 815

Mixed Sexual Dimorphism in Semipalmated Plovers, by Kevin L. Teather and Erica Nol, 803

Molecular Variation and Biogeography of Rock Shags, by Douglas Siegel-Causey, 139

Molothrus ater, 151, 595, 622, 851, 858

bonariensis, 605 Molt, 113, 543 cycle, 73 terminology, 73

Molt and the Basic Plumage of Male Harlequin Ducks. by Fred Cooke, Gregory J. Robertson, R. Ian Goudie and W. Sean Boyd, 83

Molt, Maturation of Plumage and Ageing in the Wandering Albatross, by P. A. Prince, H. Weimerskirch, N. Huin and S. Rodwell, 58

Monitoring, 955

Moniz, Z., see Ramos, J. A., 634

Monk Parakeet, 39

Monteiro, L. R., see Ramos, J. A., 634

Morbey, Yolanda E., and Ronald C. Ydenberg, Intraspecific Variability in Nestling Growth and Fledging Behavior of Cassin's Auklets at Triangle Island, British Columbia, 361

Morphological and Vocal Variation Among Subspecies of the Black-faced Sheathbill, by Joël Bried and Pierre Jouventin, 818

Morphometrics, 818

Morton, E. S., see Fleischer, R. C., 512; Wagner, R. H., 520 mtDNA, 132

Mulvihill, Robert S., and Christopher C. Rimmer, Timing and Extent of the Molts of Adult Red-eved Vireos on Their Breeding and Wintering Grounds, 73

Murphy, Stephen M., Robert H. Day, John A. Wiens and Keith R. Parker, Effects of the Exxon Valdez Oil Spill on Birds: Comparisons of Pre- and Post-Spill Surveys in Prince William Sound, Alaska, 299

Murphy, S. M., see Day, R. H., 728 Mycteria americana, 671 Myiopsitta monachus, 39 Myiornis auricularis, 253 Myology, 503

N

Natal fidelity, 25 ND6, 815 Neartic migrants, 708 Neartic-Neotropical migrants, 681 Neophron percnopterus, 829 Neotropical migrants, 658, 708 Nest abandonment, 397 defense, 282 departure, 806 destruction, 873 initiation, 381 mortality, 372 parasitism, 858 selection, 217

success, 7, 169, 271, 282, 858, 916, 926

Nest Predation and Cowbird Parasitism Create a Demographic Sink in Wetland-Breeding Song Sparrows, by Christopher M. Rogers, Mary J. Taitt, James N. M. Smith and Gwen Jongejan, 622

Nest-site characteristics, 345, 634 fidelity, 25 selection, 39, 381, 873

getic Condition in Nearctic Landbirds During

Blue Jays at a Feeder, by Keith A. Tarvin and

arctic Landbirds During Autumn Migration, by

Northern Tanzania, by D. A. Zimmerman, D.

A. Turner, and D. J. Pearson, 559

Autumn Migration, 681

Glen E. Woolfenden, 434

Jeffrey D. Parrish, 681

Nesting, 933 Parker, K. R., see Murphy, S. M., 299 chronology, 926 Parrish, Jeffrey D., Patterns of Frugivory and Enerdate, 997 Nesting Ecology of Townsend's Warblers in Relation to Habitat Characteristics in a Mature Boreal Parrots, 445 Forest, by Steven M. Matsuoka, Colleen M. Parus atricapillus, 424 Handel and Daniel D. Roby, 271 Passer montanus, 413 A New Application for Transponders in Population Passeriformes, 253 Ecology of the Common Tern, by Peter H. Pastures, 337 Becker and Helmut Wendeln, 534 Patagonian forests, 719 New World jays, 434, 490 Patch clear-cuts, 708 Newman's Birds of Southern Africa, by Kenneth New-Patterns of Dominance and Aggressive Behavior in man, and Birds of Southern Africa, by Ian Sinclair, Phil Hockey, and Warwick Tarboton, reviewed by David Cameron Duffy, 1012 Patterns of Frugivory and Energetic Condition in Ne-Niemi, G. J., see Fenske-Crawford, T. J., 14 Nilsson, J.-Å, see Härdling, R., 526 Nocturnal foraging, 191 Paxinos, E., see Slotow, R., 642 hypothermia, 104 Payne, Robert B., A review of Birds of Kenya and Noise, 231 Nol, E., see Teather, K. L., 803 Nol, Erica, Michèle Sullivan Blanken and Laura Flynn, Pedrocchi, V., see González-Solís, J., 773 Sources of Variation in Clutch Size, Egg Size Peer, Brian D., and Eric K. Bollinger, Explanations for and Clutch Completion Dates of Semipalmated Plovers in Churchill, Manitoba, 389 Nonbreeding period, 789 Northern Bobwhite, 478, 554 Cardinal, 169 Pintail, 997 Shoveler, 997 Shrike, 203 Nothofagus, 719 Nowicki, S., see Searcy, W. A., 651 Nutrient limitation hypothesis, 916 reserve dynamics, 836 reserves, 91 Nutrition, 314, 543 O Oaks, 756 Oil pollution, 728 spill, 299 Oiling, 290 impacts, 299 Olsson, Olof, and Anders Brodin, Changes in King Penguin Breeding Cycle in Response to Food Availability, 994 On the Behavior of the Black Swift, by Manuel Marin, On the Origin and Evolution of Nest Building by Passerine Birds, by Nicholas E. Collias, 253 Oring, L. W., see Delehanty, D. J., 397 Orioles, Blackbirds and Their Kin: A Natural History. by Alexander F. Skutch, reviewed by Scott K. Robinson, 1014 Ornithology, 1 Oro, D., see González-Solís, J., 773 Otoliths, 549, 773 Otus asio, 213 Page, G. W., see Warnock, N., 906 Parasitism, 858

Parent, A. H., see Farmer, A. H., 698

Parent quality, 353

the Infrequent Cowbird Parasitism on Common Grackles, 151 Pelecanoides garnotii, 1002 Pellets, 549, 773, 972 The Penguins: Ecology and Management, by Peter Dann, Ian Norman and Pauline Reilly [Eds.], reviewed by David G. Ainley, 240 Perisoreus canadensis, 523 Peruvian Diving-petrel, 1002 Petit, Lisa J., A review of Birds of Tropical America: A Watcher's Introduction to Behavior, Breeding and Diversity, by Steven Hilty, 842 Petrodroma sandwichensis, 812 Phaeton rubricauda, 1004 Phalacrocoracidae, 139 Phalacrocorax auritus, 549 Phalaropus tricolor, 538 Phonotaxis, 990 Phylogenetic analysis, 490, 503 Phylogeography, 132 Piersma, Theunis, A review of The Flight of the Red Knot, by Brian Harrington, 239 Pitelka, F. A., see Lank, D. B., 558 Pittas, Broadbills and Asities, by Frank Lambert and Martin Woodcock, reviewed by Pamela C. Rasmussen, 1013 Place, A. E., see Duke, G. E., 123 Plains cottonwood, 880 Playback, 651, 826 Playback of Crows of Male Japanese Quail Elicits Female Phonotaxis, by James L. Goodson and Elizabeth Adkins-Regan, 990 Plumage, 543 maturation, 58 Plumpton, David L., and David E. Andersen, Habitat Use and Time Budgeting by Wintering Ferruginous Hawks, 888 Plumulaceous, 47 Point count, 955 transect, 445 Polioptila californica, 858

Polygyny and Sexual Selection in Red-winged Blackbirds, by William A. Searcy and Ken Yasukawa, reviewed by Charles R. Brown, 238

Population biology, 534

declines, 7

genetics, 139

regulation, 634

Populus sargentii, 880

Porth, A., see Weiser, J. I., 554

The Potential to Lay Replacement Clutches by Tree Swallows, by Taali M. Rooneem and Raleigh J. Robertson, 228

Powell, S. M., see Braden, G. T., 858

Prairie Falcon, 567

Predation, 271, 372, 622, 642, 906

Predation of Artificial Ground Nests at Two Types of Edges in a Forest-Dominated Landscape, by Timothy J. Fenske-Crawford and Gerald J. Niemi, 14

Prey abundance, 994 selection, 972

Prince, P. A., H. Weimerskirch, N. Huin and S. Rodwell, Molt, Maturation of Plumage and Ageing in the Wandering Albatross, 58

Prince William Sound, 299

Procellariiformes, 634

Productivity, 933

Productivity of Nesting Spectacled Eiders on the Lower Kashunuk River, Alaska, by James B. Grand and Paul L. Flint, 926

Progne subis, 520

Prolactin, 397

Protocalliphora, 271

Pterodroma phaeopygia, 812

Puerto Rican Vireo, 605

Purple Martin, 520

Pyle, P., see Sydeman, W. J., 327

Pytte, Carolyn L., Song Organization of House Finches at the Edge of an Expanding Range, 942

## Q

Quantification of Microscopic Feather Characters Used in the Identification of North American Plovers, by Carla J. Dove, 47

Quebec, 976

Quercus, 756

Quiscalus quiscula, 151

## R

Radio telemetry, 567, 888

Raikow, R. J., see Bledsoe, A. H., 503

Rail, Jean-François, Marcel Darveau, André Desrochers and Jean Huot, Territorial Responses of Boreal Forest Birds to Habitat Gaps, 976

Rain forest, 833

Ramos, Jaime A., Luis R. Monteiro, Encarnacion Sola and Zita Moniz, Characteristics and Competition for Nest Cavities in Burrowing Procellariiformes, 634

Rasmussen, Pamela C., A review of *Pittas, Broadbills* and Asities, by Frank Lambert and Martin Woodcock, 1013

Recovery, 728

Recruitment, 916

Red-eyed Vireo, 73

Red-footed Booby, 162, 1004

Red-tailed Tropicbird, 1004

Red-winged Blackbird, 826

Reed Bunting, 966

Refined Methods for Assessment of Nutrient Reserve Use and Regulation of Clutch Size, by James S. Sedinger, C. Davison Ankney and Ray T. Alisauskas, 836

Regurgitation, 765, 773

Relative Costs of Prebasic and Prealternate Molts for Male Blue-winged Teal, by William L. Hohman, Scott W. Manley and David Richard, 543

Renesting, 933

Repeatability, 389

Replacement clutch, 228

Reproductive Anatomy of the Reed Bunting: A Species Which Exhibits a High Degree of Sperm Competition Through Extra-pair Copulations, by A. Dixon and T. R. Birkhead, 966

Reproductive effort, 933

fitness, 585

isolation, 818

strategies, 534

success, 605

Reproductive Success of the Northern Cardinal, a Large Host of Brown-headed Cowbirds, by Kevin P. Eckerle and Randall Breitwisch, 169

Resource partitioning, 894

The Response of Male and Female Song Sparrows to Geographic Variation in Song, by William A. Searcy, Stephen Nowicki and Melissa Hughes, 651

Retina, 191

Retrieval, 526

Reynhout, J., see Duke, G. E., 123

Richard, D., see Hohman, W. L., 543

Rimmer, C. C., see Mulvihill, R. S., 73

Riparian birds, 7

Ritchison, G., see Lawless, S. G., 213

Robertson, G. J., see Cooke, F., 83

Robertson, R. J., see Rooneem, T. M., 228

Robinson, Scott K., A review of *Orioles, Blackbirds* and Their Kin: A Natural History, by Alexander F. Skutch, 1014

Roby, D. D., see Matsuoka, S. M., 271

Rod, 191

Rodenhouse, Nicholas L., A review of *Birds & Climate Change*, by John F. Burton, 242

Rodrigues, F. H. G., see Silveira, L., 201

Rodwell, S., see Prince, P. A., 58

Rogers, Christopher M., Mary J. Taitt, James N. M. Smith and Gwen Jongejan, Nest Predation and Cowbird Parasitism Create a Demographic Sink in Wetland-Breeding Song Sparrows, 622

Rojas, Luz M., Raymond McNeil, Thérése Cabana and Pierre Lachapelle, Diurnal and Nocturnal Visual Function in Two Tactile Foraging Waterbirds: The American White Ibis and the Black Skimmer, 191

Rojas-Soto, O., see Zink, R. M., 132

The Role of Ornithology in Conservation of the American West, by Carl E. Bock, 1

Rooneem, Taali M., and Raleigh J. Robertson, The Po-

tential to Lay Replacement Clutches by Tree Swallows, 228

Roosting, 514

Royal Penguin, 530

Ruddy Ducks and Other Stifftails: Their Behavior and Biology, by Paul A. Johnsgard and Montserrat Carbonell, reviewed by William L. Hohman, 844

Ruiz, X., see González-Solís, J., 773 Rynchops niger, 191

 $\mathbf{S}$ 

Sage Grouse, 933 Sparrow, 217

San Clemente Island, 217

Sandercock, B. K., see Warnock, N., 906

Sanderling, 290

Sangmeister, A., see Fleischer, R. C., 512

Santos, D. M., see Sol, D., 39

Scarlet Ibis, 191

Schieck, Jim, Biased Detection of Bird Vocalizations Affects Comparisons of Bird Abundance Among Forested Habitats, 179

Schroeder, Michael A., Unusually High Reproductive Effort by Sage Grouse in a Fragmented Habitat in North-Central Washington, 933

Schueck, L. S., see Marzluff, J. M., 567

Schug, M. D., see Wagner, R. H., 520

Seabird, 327, 728, 994

Searcy, William A., and Michael S. Capp, Estradiol Dosage and the Solicitation Display Assay in Red-winged Blackbirds, 826

Searcy, William A., Stephen Nowicki and Melissa Hughes, The Response of Male and Female Song Sparrows to Geographic Variation in Song, 651

Seasonal Acclimatization, 478

Seasonal Effects on Metabolism and Thermoregulation in Northern Bobwhite, by David L. Swanson and Duane P. Weinacht, 478

Seasonal Variation in the Foraging Ecology of the Wood Stork in the Southern Llanos of Venezuela, by José A. González, 671

Seasonality, 470

Sedgwick, James A., Sequential Cavity Use in a Cottonwood Bottomland, 880

Sedinger, James S., Adaptations to and Consequences of an Herbivorous Diet in Grouse and Waterfowl. 314

Sedinger, James S., C. Davison Ankney and Ray T. Alisauskas, Refined Methods for Assessment of Nutrient Reserve Use and Regulation of Clutch Size, 836

Sedinger, J. S., see Lindberg, M. S., 25; Lindberg, M. S., 381; MacCluskie, M. C., 224

Selection-hybridization balance, 585

Selfish herd, 372

Semipalmated Plover, 290, 389, 803

Sandpiper, 206

Sequence analysis, 132

variation, 815

Sequential Cavity Use in a Cottonwood Bottomland, by James A. Sedgwick, 880

Sex effects, 906

Sex Identification in the Egyptian Vulture by Flow Cytometry and Cytogenetics, by Delia Cavallo, Raffaele De Vita, Patrizia Eleuteri, Robert H. R. Belterman and Giacomo Dell'Omo, 829

Sex-biased dominance, 434

Sexual dimorphism, 803

selection, 83, 520

Shiny Cowbird, 605

Shorebirds, 337, 389, 906

Siegel-Causey, Douglas, Molecular Variation and Biogeography of Rock Shags, 139

Silveira, Leandro., Anah T. A. Jácomo, Flávio H. G. Rodrigues and Peter G. Crawshaw, Jr., Hunting Association Between the Aplomado Falcon (Falco femoralis) and the Maned Wolf (Chrysocyon brachyurus) in Emas National Park, Central Brazil. 201

Silvereye, 104

The Simple Science of Flight/From Insects to Jumbo Jets, by Henk Tennekes, reviewed by Peter Stettenheim, 841

Singing for Your Supper: Acoustical Luring of Avian Prey by Northern Shrikes, by Eric C. Atkinson, 203

Sitta europaea, 526

Slotow, Robert, and Ellen Paxinos, Intraspecific Competition Influences Food Return-Predation Risk Trade-Off by White-crowned Sparrows, 642

Smith, Christopher C., A review of *The Coevolutionary Process*, by John N. Thompson, 244

Smith, J. N. M., see Rogers, C. M., 622

Smith, Kimberly G., Briefly Noted Book Reviews, 246, 563, 1016

Snowy Egret, 894

Soaring flight, 458

Sol, Daniel, David M. Santos, Elías Feria and Jordi Clavell, Habitat Selection by the Monk Parakeet During Colonization of a New Area in Spain, 39

Sola, E., see Ramos, J. A., 634

Somateria fischeri, 926

Song, 413, 651, 826

Song Organization of House Finches at the Edge of an Expanding Range, by Carolyn L. Pytte, 942

Song Sparrow, 282, 622, 651

Songbird populations, 622

Sound attenuation, 179

Source-sink population dynamics, 622

Sources of Variation in Clutch Size, Egg Size and Clutch Completion Dates of Semipalmated Plovers in Churchill, Manitoba, by Erica Nol, Michèle Sullivan Blanken and Laura Flynn, 389

Spaar, Reto, and Bruno Bruderer, Migration by Flapping or Soaring: Flight Strategies of Marsh, Montagu's and Pallid Harriers in Southern Israel, 458

Spatial distribution, 337

Speciation, 818

Species diversity, 719 inventory, 955

Species Limits in The Le Conte's Thrasher, by Robert M. Zink, Rachelle C. Blackwell and Octavio Rojas-Soto, 132

Spectacled Eider, 926

Sperm competition, 966 storage, 966 Sphyrapicus varius, 798 Stable isotope analysis, 327 Stacey, P. B., see Ammon, E. M., 7 State-dependent decision, 994 Statistical analysis, 836 power, 743 Steffensen, J. F., see Bech, C., 780 Stephenson, R., see Jarsky, T., 1007 Sterna hirundo, 534

Stettenheim, Peter, A review of *The Simple Science of Flight/From Insects to Jumbo Jets*, by Henk Tennekes, 841

Stictocarbo magellanicus, 139

Stokes Field Guide to Birds (Eastern Region) and (Western Region), by Donald and Lillian Stokes, reviewed by John L. Zimmerman, 243

Stopover area, 206 ecology, 681

Stoskopf, M. K., see Harms, C. A., 231

Stress, 231, 397, 543

response, 806

Strickland, D., see Waite, T. A., 523

Strix aluco, 969

Strong, Allan M., G. Thomas Bancroft and Susan D. Jewell, Hydrological Constraints on Tricolored Heron and Snowy Egret Resource Use, 894

Structural size, 789 Subantarctic, 58 Subtropical forest, 955 Sula sula, 1004 Supplemental feeding, 91 Survey methods, 445 Survival, 470, 906, 916

Swanson, David L., and Duane P. Weinacht, Seasonal Effects on Metabolism and Thermoregulation in Northern Bobwhite, 478

Sydeman, William J., Keith A. Hobson, Peter Pyle and Elizabeth B. McLaren, Trophic Relationships Among Seabirds in Central California: Combined Stable Isotope and Conventional Dietary Approach, 327

## T

Tachycineta bicolor, 210, 228

Taitt, M. J., see Rogers, C. M., 622

Tannins, 756

Tarr, C. L., see Fleischer, R. C., 512

Tarvin, Keith A., and Glen E. Woolfenden, Patterns of Dominance and Aggressive Behavior in Blue Jays at a Feeder, 434

Tawny Owl, 969

Teather, Kevin L., and Erica Nol, Mixed Sexual Dimorphism in Semipalmated Plovers, 803

A Technique for Dorsal Subcutaneous Implantation of Heart Rate Biotelemetry Transmitters in Black Ducks: Application in an Aircraft Noise Response Study, by Craig A. Harms, W. James Fleming and Michael K. Stoskopf, 231

Tendon ossification, 503

TerEick, A. L., see Duke, G. E., 123

Territorial Responses of Boreal Forest Birds to Habitat

Gaps, by Jean-François Rail, Marcel Darveau, André Desrochers and Jean Huot, 976

A Test of an Environmental Advertisement Hypothesis for the Function of Drumming in Yellow-bellied Sapsuckers, by Laurie S. Eberhardt, 798

Thermal conductance, 104

Thermoregulation, 104, 478, 780

Thick-billed Murre, 345, 353

Time allocation, 470

budget, 888

Time-depth recorders, 530

Timing and Extent of the Molts of Adult Red-eyed Vireos on Their Breeding and Wintering Grounds, by Robert S. Mulvihill and Christopher C. Rimmer, 73

Timing of breeding, 91, 353

Torpor in Three Species of Brazilian Hummingbirds Under Semi-Natural Conditions, by Claus Bech, Augusto S. Abe, John Fleng Steffensen, Martin Berger and Jose Eduardo P. W. Bicudo, 780

Townsend ground squirrel, 567

Townsend's Warbler, 271

Toxosoma arenicola, 132

lecontei, 132

Trade-off, 642 Transmitters, 530

Transponder, 534

Tree Swallow, 210, 228

Triangle Island, 361

Tricolored Heron, 894

Triglycerides, 113

Troglodytes aedon, 873

Troglodytidae, 981

Trophic cascade, 210

Trophic Relationships Among Seabirds in Central California: Combined Stable Isotope and Conventional Dietary Approach, by William J. Sydeman, Keith A. Hobson, Peter Pyle and Elizabeth B. McLaren, 327

Tropical birds, 512

Tufted Duck, 916

Tyto alba, 789, 969, 972

## U

Udvardy, M. D. F., A review of *The Wood Duck and the Mandarin*, by Lawton L. Shurtleff and Christopher Savage, 561

Unusually High Reproductive Effort by Sage Grouse in a Fragmented Habitat in North-Central Washington, by Michael A. Schroeder, 933

Turdus migratorius, 554 Uria lomvia, 345, 353 Uric acid, 113

## $\mathbf{v}$

Valera, Francisco, Jose E. Gutiérrez and Rafael Barrios, Effectiveness, Biases and Mortality in the Use of Apomorphine for Determining the Diet of Granivorous Passerines, 765

Variation in Incubation Periods and Egg Metabolism in Mallards: Intrinsic Mechanisms to Promote Hatch Synchrony, by Margaret C. MacCluskie, Paul L. Flint and James S. Sedinger, 224

Variation in Song Sparrow Nest Defense: Individual

Consistency and Relationship to Nesting Success, by Margret I. Hatch, 282

Vegetation height, 337

structure, 719

Vekasy, M. S., see Marzluff, J. M., 567

Venezuela, 445

Vermont, 708

Vessey, S. H., see Germaine, S. S., 708

Vicariance biogeography, 139

Vigilance, 406

Vireo atricapillus, 595

latimeri, 605

Vision, 191

Vocal behavior, 985

Vocalizations, 179, 818, 981

Vogel, E. R., see Wilson, W. H., Jr., 206

Wagner, Richard H., Priya Davidar, Malcolm D. Schug and Eugene S. Morton, Do Blood Parasites Affect Paternity, Provisioning and Mate-Guarding in Purple Martins?, 520

Waite, Thomas A., and Dan Strickland, Cooperative Breeding in Gray Jays: Philopatric Offspring Provision Juvenile Siblings, 523

Wandering Albatross, 58

Warnock, Nils, Gary W. Page and Brett K. Sandercock, Local Survival of Dunlin Wintering in California, 906

Water level, 894

Waterbirds, 191

Waterfowl, 314

Weimerskirch, H., see Prince, P. A., 58

Weinacht, D. P., see Swanson, D. L., 478

Weiser, Jennifer I., Adam Porth, David Mertens and William H. Karasov, Digestion of Chitin by Northern Bobwhites and American Robins, 554

Wendeln, H., see Becker, P. H., 534

Westneat, D. F., see Lawless, S. G., 213

White, Douglas W., and E. Dale Kennedy, Effect of Egg Covering and Habitat on Nest Destruction by House Wrens, 873

White-crowned Sparrow, 642

Whitman, Andrew A., John M. Hagan III and Nicholas V. L. Brokaw, A Comparison of Two Bird Survey Techniques Used in a Subtropical Forest,

Wiens, J. A., see Day, R. H., 728; Murphy, S. M., 299

Willey, David W., Characteristics of Nesting Areas Used by San Clemente Island Sage Sparrows,

Wilson's Phalarope, 397, 538

Wilson, W. Herbert, Jr. and Erin R. Vogel, The Foraging Behavior of Semipalmated Sandpipers in the Upper Bay of Fundy: Stereotyped or Prey-Sensitive?, 206

Wind tunnel, 1007

Winter mortality, 969

pair-bonds, 424

Wintering grounds, 73

Withiam, M. L., see Lemmon, D., 424

The Wood Duck and the Mandarin, by Lawton L. Shurtleff and Christopher Savage, reviewed by M. D. F. Udvardy, 561

Wood Stork, 671

Wood, Douglas R., and Eric K. Bollinger, Egg Removal by Brown-headed Cowbirds: A Field Test of the Host Incubation Efficiency Hypothesis, 851

Woodpecker, 798

Woodworth, Bethany L., Brood Parasitism, Nest Predation, and Season-Long Reproductive Success of a Tropical Island Endemic, 605

Wool, D., see Yom-Tov, Y., 972

Woolfenden, G. E., see Tarvin, K. A., 434

Ydenberg, R. C., see Morbey, Y. E., 361

Yellow-bellied Sapsucker, 798

Yom-Tov, Yoram, and David Wool, Do the Contents of Barn Owl Pellets Accurately Represent the Proportion of Prey Species in the Field?, 972

Zavalaga, Carlos B., and Jaime Jahncke, Maximum Dive Depths of the Peruvian Diving-petrel,

Zicus, Michael C., Female Hooded Merganser Body Mass During Nesting, 220

Zimmerman, John L., A review of Stokes Field Guide to Birds (Eastern Region) and (Western Region), by Donald and Lillian Stokes, 243

Zink, Robert M., Rachelle C. Blackwell and Octavio Rojas-Soto, Species Limits in The Le Conte's Thrasher, 132

Zonotrichia leucophrys, 642

Zosterops lateralis, 104