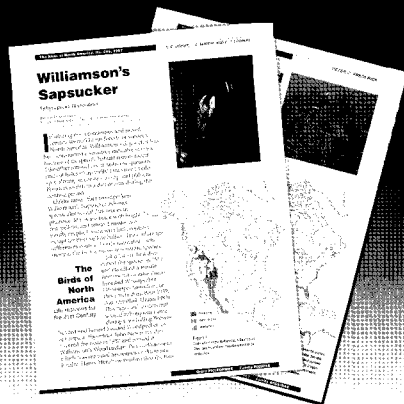


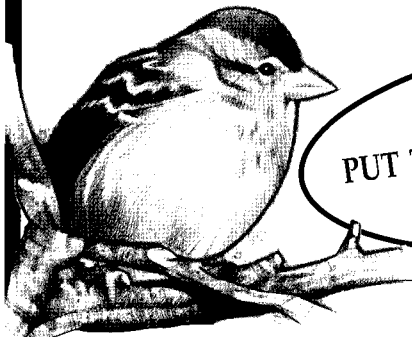
Do you have a copy of THE BIRDS OF NORTH AMERICA?

Prices have
been slashed!
BUY NOW!



AOU Members' price: \$1,690 – SAVE \$560

Academic & Public Library price: \$1,875 – SAVE \$1,420



**DON'T HESITATE –
PUT THIS ESSENTIAL REFERENCE
ON YOUR SHELVES.**

**IF YOUR LIBRARY HAS A COPY,
BUY ANOTHER
AT THE LOWEST PRICE EVER!**

*A limited number
of subscriptions
available at these prices.*

CALL TODAY!



The Birds of North America
P.O. Box 1897, Lawrence, KS 66044-8897

Call: 800-627-0629

Fax: 785-843-1274

**Visit our web site:
www.birdsofna.org**

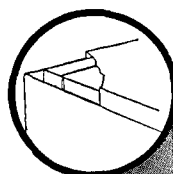


NEW!

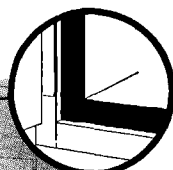
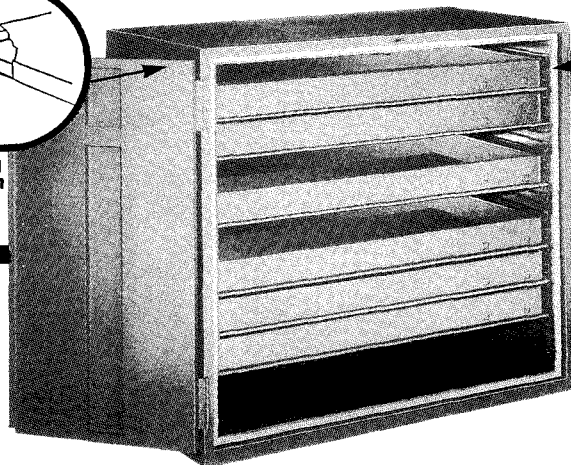
Lane Science Cabinets now feature Durable Neoprene Door Seals and Powder Paint Finishes.

PERMANENT SPECIMEN PRESERVATION

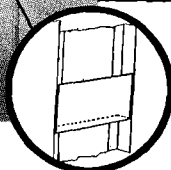
with *Lane* **ZOOLOGY AND ORNITHOLOGY SPECIMEN CABINETS**



Double Wall Construction



Pest-Proof and Air Tight Seal



Fumigant Compartment

- Double Wall Construction
- Pest-Proof and Air Tight Seal
- Double Panel Door
- Lift-off Safe Type Hinge
- Fumigant Compartment
- 3-Point Locking Mechanism
- Specimen Trays of Aluminum and Masonite. Lightweight, sturdy and easy to handle. Also available, Steel Trays.

FOR ILLUSTRATED BROCHURE, WRITE

Lane

SCIENCE EQUIPMENT CORP.

225 W. 34th St., New York, N.Y. 10122
Tel. (212) 563-0663 Fax (212) 465-9440

Skin Case #201 (illustrated)
Holds large trays for larger specimens.

Skin Case # 202 (not illustrated)
Divided for half-size trays for smaller specimens.

Lane Science Equipment Corp. Dept. P
225 W. 34th St., New York, N.Y. 10122

Please send complete details on Lane Zoology and Ornithology Specimen Cabinets to:

Name _____ Title _____

Institution _____

Address _____

City _____ State _____ Zip _____

**AVIAN REPRODUCTIVE TACTICS:
FEMALE AND MALE PERSPECTIVES**

Ornithological Monographs No. 49

Patricia G. Parker and Nancy Tyler Burley, Editors

- Themes and questions in the study of avian reproductive tactics (Burley and Parker)
- Mating tactics and systems of birds (Johnson and Burley)
- Variation in extra-pair behavior of Red-winged Blackbirds (Gray)
- Impact of extra-pair fertilizations on Dark-eyed Junco reproductive success (Ketterson et al.)
- Evolution of extra-pair mating systems (Stutchbury and Neudorf)
- Sexual selection and the clustering of avian territories (Wagner)
- Extra-group paternity in Superb Fairy-wrens (Dunn and Cockburn)
- Sexual coercion (McKinney and Evarts)

Send \$20.00 (\$16.00 for AOU members) plus \$3.50 for shipping and handling, payable by Mastercard/Visa or check in U.S. funds to: Max C. Thompson, Assistant to the Treasurer, AOU, Department of Biology, Southwestern College, 100 College St., Winfield, Kansas 67156, USA

American Ornithologists' Union

CHECK-LIST OF NORTH AMERICAN BIRDS

7th Edition

**The Species of Birds of North America from the Arctic
through Panama, including the West Indies
and Hawaiian Islands**

Regular price: \$49.95

AOU member price: \$39.95

Send payment plus \$4.00 (domestic) or \$7.00 (foreign) for shipping and handling, payable by MasterCard/Visa or check in U.S. funds to: Max C. Thompson, Assistant to the Treasurer, AOU, Department of Biology, Southwestern College, 100 College St., Winfield, Kansas 67156, USA



The American Ornithologists' Union

The Council for 1998–1999

Officers and Editors

President: FRANK B. GILL, *National Audubon Society, 700 Broadway, New York, New York 10003*

President-Elect: JOHN W. FITZPATRICK, *Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850*

Vice President: JAMES A. KUSHLAN, *U.S. Geological Survey, Biological Resources Division, Patuxent Wildlife Research Center, Laurel, Maryland 20708*

Secretary: MARY VICTORIA McDONALD, *Department of Biology, University of Central Arkansas, Conway, Arkansas 72035*

Treasurer: FREDERICK H. SHELDON, *Museum of Natural Science, Foster Hall 119, Louisiana State University, Baton Rouge, Louisiana 70803*

Editor of *The Auk*: THOMAS E. MARTIN, *Montana Cooperative Wildlife Research Unit, University of Montana, Missoula, Montana 59812*

Editor of *Ornithological Monographs*: DAVID A. WIEDENFELD, *Sutton Avian Research Center, P.O. Box 2007, Bartlesville, Oklahoma 74005*

Elective Councilors and Living Past Presidents

1999: Susan M. Haig, Jeffrey R. Walters, Wesley W. Weathers. 2000: Irene M. Pepperberg, Carol M. Vleck, David W. Winkler. 2001: Walter D. Koenig, Scott M. Lanyon, Stephen M. Russell.

Past Presidents: Ernst Mayr (1957–59), Dean Amadon (1964–66), Harold F. Mayfield (1966–68), Robert W. Storer (1970–72), Wesley E. Lanyon (1976–78), Harrison B. Tordoff (1978–80), Thomas R. Howell (1982–84), Frances C. James (1984–86), Glen E. Woolfenden (1988–90), Brina Kessel (1992–94), Richard C. Banks (1994–96), Ned K. Johnson (1996–98).

Instructions to Contributors

The Auk publishes original reports on the biology of birds. Appropriate topics include documentation, analysis, and interpretation of laboratory and field studies, theoretical or methodological developments, and reviews of information or ideas. Authors are encouraged to write papers from the perspective of general concepts and theories, and to consider the relevance of their findings to taxa in addition to birds. *The Auk* strives to publish a color frontispiece with each lead article; authors are encouraged to submit suitable color illustrations. Contributions are welcome from throughout the world but must be written in English. Submit five copies of each manuscript complete with tables, figure legends, and figures (retain original figures until notified) to the Editor. Include a copy of the manuscript on a 3.5-inch diskette (WordPerfect preferred, but identify the software). Double-space all written material (including tables and figure legends) on standard-sized stationery. Number pages through the figure legends. Submit tables separately from the text; type figure legends consecutively on a separate sheet. Manuscripts should conform to general usage in the most recent issue of the journal. The title page should contain: (1) full title; (2) authors' names and addresses; (3) left and right running heads (<36 characters each); and (4) name, mailing address, and e-mail address of author to whom correspondence should be sent. **Detailed instructions to contributors are available in *Auk* 113(3):731–733; copies may be obtained from the Editor. Paying close attention to these instructions will hasten the processing of your manuscript and gratify the editorial staff.**

The Auk

A Quarterly Journal of Ornithology

EDITOR

THOMAS E. MARTIN

MANAGING EDITOR

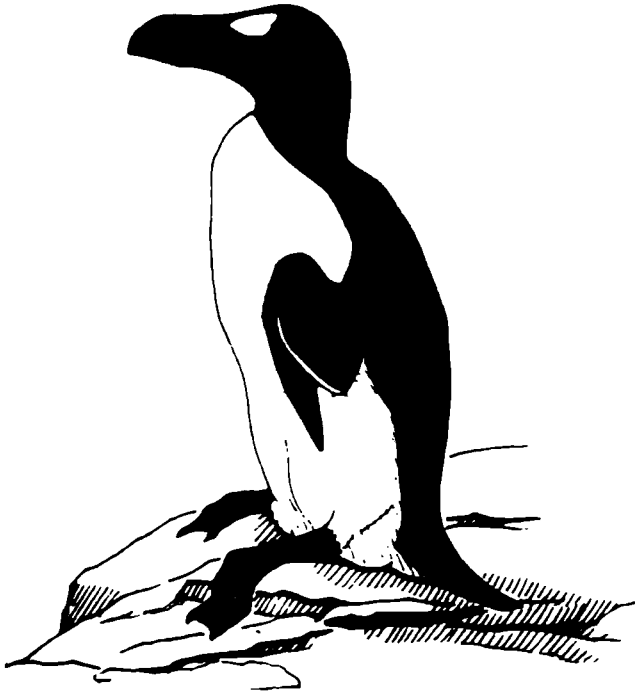
JEFFREY S. MARKS

EDITORIAL ASSISTANT

ALISON E. H. PERKINS

BOOK REVIEW EDITOR

CARL D. MARTI



VOLUME 115

PUBLISHED BY

THE AMERICAN ORNITHOLOGISTS' UNION

1998

Contents of Volume 115



NUMBER 1

OVERVIEWS

- ANOTHER THREAT POSED BY FOREST FRAGMENTATION: REDUCED FOOD SUPPLY. *Scott K. Robinson* 1

ARTICLES

- COOPERATIVE BREEDING IN THE FRUGIVOROUS TOUCAN BARBET (*SEMORNIS RAMPHASTINUS*). *Carla Restrepo and Marta Lucy Mondragón* 4
- NEST PREDATION IN ASPEN WOODLOTS IN AN AGRICULTURAL AREA IN ALBERTA: THE ENEMY FROM WITHIN. *Susan J. Hannon and Susan E. Cotterill* 16
- ENVIRONMENTAL EFFECTS ON BODY SIZE OF CANADA GEESE. *James O. Leafloor, C. Dawson Ankney, and Donald H. Rusch* 26
- NEST-SITE CHARACTERISTICS AND REPRODUCTIVE SUCCESS IN MAGELLANIC PENGUINS (*SPHENISCUS MAGELLANICUS*). *David L. Stokes and P. Dee Boersma* 34
- THE BARRED OWL (*STRIX VARIA*) INVASION IN CALIFORNIA. *Shawna J. Dark, R. J. Gutiérrez, and Gordon I. Gould, Jr.* 50
- FORAGING FLIGHTS OF BREEDING THICK-BILLED MURRES (*URIA LOMVIA*) AS REVEALED BY BIRD-BORNE DIRECTION RECORDERS. *Silvano Benvenuti, Francesco Bonadonna, Luigi Dall'Antonia, and Gudmundur A. Gudmundsson* 57
- FLEXIBLE GROWTH RATES IN FORK-TAILED STORM-PETRELS: A RESPONSE TO ENVIRONMENTAL VARIABILITY. *P. Dee Boersma and Julia K. Parrish* 67
- THE ADRENOCORTICAL RESPONSE TO STRESS IN INCUBATING MAGELLANIC PENGUINS (*SPHENISCUS MAGELLANICUS*). *Laura C. Hood, P. Dee Boersma, and John C. Wingfield* 76
- RE-EVALUATION OF ADULT SURVIVAL OF BLACK-HEADED GULLS (*LARUS RIDIBUNDUS*) IN PRESENCE OF RECAPTURE HETEROGENEITY. *Anne-Caroline Prévot-Julliard, Jean-Dominique Lebreton, and Roger Pradel* 85
- INFLUENCE OF FOOD ABUNDANCE, NEST-SITE HABITAT, AND FOREST FRAGMENTATION ON BREEDING OVENBIRDS. *Dawn M. Burke and Erica Nol* 96
- PHYLOGENETIC PATTERNS IN THE TROCHILIDAE. *John A. Gerwin and Robert M. Zink* 105
- PATTERNS OF CAVITY-ENTRANCE ORIENTATION BY GILDED FLICKERS (*COLAPTES CHRYSOIDES*) IN CARDÓN CACTUS. *Patrick W. Zwartjes and Shawn E. Nordell* 119
- MOLECULAR AND OSTEOLOGICAL HERON PHYLOGENIES: SOURCES OF INCONGRUENCE. *Kevin G. McCracken and Frederick H. Sheldon* 127
- CONTRASTS IN SCHEDULING OF MOLT AND MIGRATION IN EASTERN AND WESTERN WARBLING-VIREOS. *Gary Voelker and Sievert Rohwer* 142
- SUGAR PREFERENCES AND "SIDE BIAS" IN CAPE SUGARBIRDS AND LESSER DOUBLE-COLLARED SUNBIRDS. *Susan Jackson, Susan W. Nicolson, and Christopher N. Lotz* 156
- FACTORS AFFECTING PARENTAL BEHAVIOR IN SEMIPALMATED PLOVERS. *Michèle Sullivan Blanken and Erica Nol* 166
- EVALUATION OF THE CYCLOPROPANE ABSORPTION METHOD OF MEASURING AVIAN BODY FAT. *James A. Gessaman, Roy D. Nagle, and Justin D. Congdon* 175
- CYTOCHROME-B EVIDENCE FOR VALIDITY AND PHYLOGENETIC RELATIONSHIPS OF *PSEUDOBULWERIA* AND *BULWERIA* (PROCELLARIIDAE). *Vincent Bretagnolle, Carole Attié, and Eric Pasquet* 188

GUTS DON'T FLY: SMALL DIGESTIVE ORGANS IN OBESE BAR-TAILED GODWITS. <i>Theunis Piersma and Robert E. Gill, Jr.</i>	196
IN MEMORIAM: DIOSCORO S. RABOR, 1911–1996. <i>Robert S. Kennedy and Hector C. Miranda, Jr.</i>	204
IN MEMORIAM: PHILIP L. WRIGHT, 1914–1997. <i>Jeffrey S. Marks</i>	206
IN MEMORIAM: CHARLES M. WEISE, 1926–1997. <i>Millicent Sigler Ficken</i>	207
IN MEMORIAM: PHILIP ATKINSON DUMONT, 1903–1996. <i>James J. Dinsmore</i>	207
SHORT COMMUNICATIONS	
Behavioral interactions between Golden-winged and Blue-winged warblers. <i>John L. Confer and Jeffery L. Larkin</i>	209
Numts: A challenge for avian systematics and population biology. <i>Michael D. Sorenson and Thomas W. Quinn</i>	214
Body mass, ambient temperature, time of day, and vigilance in Tufted Titmice. <i>Vladimir V. Pravosudov and Thomas C. Grubb, Jr.</i>	221
Prey selection by breeding and nonbreeding Barn Owls in Argentina. <i>M. Isabel Bellocq</i>	224
Extrapair paternity associated with reneesting in the American Goldfinch. <i>G. J. Gissing, T. J. Crease, and A. L. A. Middleton</i>	230
Early arrival is not advantageous for Rufous Bush-Robins parasitized by Common Cuckoos. <i>José Javier Palomino, Manuel Martin-Vivaldi, and Manuel Soler</i>	235
Recent change in the winter distribution of Rufous Hummingbirds. <i>Geoffrey E. Hill, Robert R. Sargent, and Martha B. Sargent</i>	240
COMMENTARIES	
Response to Latta and Baltz (1997). <i>John H. Rappole and M. Victoria McDonald</i>	246
History and tradition, or contemporary ornithology? Why ornithological journals should not have bird names. <i>J. V. Remsen, Jr., James A. Kushlan, and Bette A. Loiselle</i>	252
Keep "The Auk" alive and flying. <i>Glen E. Woolfenden, Jack P. Hailman, and Wesley E. Lanyon</i>	254
WILLIAM BREWSTER MEMORIAL AWARD, 1997: JOHN C. AVISE	256
ELLIOTT COUES AWARD, 1997: CHANDLER S. ROBBINS	257
REVIEWS. <i>Edited by Carl D. Marti</i>	260
100 YEARS AGO IN <i>THE AUK</i>	276
NOTES AND NEWS	278, 279
NOTICE FROM THE COMMITTEE ON CLASSIFICATION AND NOMENCLATURE	280

NUMBER 2

OVERVIEWS	
HYBRIDIZATION IN BIRDS. <i>Frank B. Gill</i>	281
ARTICLES	
THREE HYBRID ZONES BETWEEN HERMIT AND TOWNSEND'S WARBLERS IN WASHINGTON AND OREGON. <i>Sievert Rohwer and Christopher Wood</i>	284
BROOD SURVIVAL AND RECRUITMENT OF MALLARDS IN RELATION TO WETLAND DENSITY AND HATCHING DATE. <i>Elston H. Dzus and Robert G. Clark</i>	311
DO SEEDS HINDER DIGESTIVE PROCESSING OF FRUIT PULP? IMPLICATIONS FOR PLANT/FRUGIVORE MUTUALISMS. <i>Mark C. Witmer</i>	319
ECOLOGICAL FACTORS AFFECTING GROUP AND TERRITORY SIZE IN WHITE-THROATED MAGPIE-JAYS. <i>Tom A. Langen and Sandra L. Vehrencamp</i>	327
EFFECTS OF CLUTCH SIZE AND TIMING OF BREEDING ON REPRODUCTIVE SUCCESS OF GREATER RHEAS. <i>Gustavo J. Fernández and Juan C. Reboreda</i>	340
POSTFLEDGING DISPERSAL, HABITAT USE, AND HOME-RANGE SIZE OF JUVENILE WOOD THRUSHES. <i>Angela D. Anders, John Faaborg, and Frank R. Thompson III</i>	349
A GLYCOALKALOID IN RIPE FRUIT DETERS CONSUMPTION BY CEDAR WAXWINGS. <i>Douglas J. Levey and Martin L. Cipollini</i>	359

BLACKFLY-INDUCED MORTALITY OF NESTLING RED-TAILED HAWKS. <i>Roger N. Smith, Steven L. Cain, Stanley H. Anderson, Jeffrey R. Dunk, and Elizabeth S. Williams</i>	368
EFFECTS OF HABITAT AND INVERTEBRATE DENSITY ON ABUNDANCE AND FORAGING BEHAVIOR OF BROWN-HEADED COWBIRDS. <i>Dana L. Morris and Frank R. Thompson III</i>	376
SHORT-RANGE AND LONG-RANGE SONGS: USE OF TWO ACOUSTICALLY DISTINCT SONG CLASSES BY DARK-EYED JUNCOS. <i>Russell C. Titus</i>	386
MOLECULAR SYSTEMATICS OF THE SCALED QUAIL COMPLEX (GENUS <i>CALLIPEPLA</i>). <i>Robert M. Zink and Rachele C. Blackwell</i>	394
ABIOTIC FACTORS AS PREDICTORS OF DISTRIBUTION IN SOUTHERN AFRICAN BULBULS. <i>Penn Lloyd and Antony R. Palmer</i>	404
SYSTEMATIC RELATIONSHIPS AMONG THE EMBERIZID SPARROWS. <i>Michael A. Patten and Michael Fugate</i>	412
RESPONSES OF AVIAN ASSEMBLAGES TO A NATURAL EDGE IN A CHACO SEMIARID FOREST IN ARGENTINA. <i>Javier Lopez de Casenave, Juan Pablo Pelotto, Sandra M. Caziani, Myriam Mer-moz, and Jorge Protomastro</i>	425
ECOLOGICAL SIGNIFICANCE OF BROOD-SITE FIDELITY IN BLACK BRANT: SPATIAL, ANNUAL, AND AGE-RELATED VARIATION. <i>Mark S. Lindberg and James S. Sedinger</i>	436
RED-COCKADED WOODPECKER NEST-CAVITY SELECTION: RELATIONSHIPS WITH CAVITY AGE AND RESIN PRODUCTION. <i>Richard N. Conner, Daniel Saenz, D. Craig Rudolph, William G. Ross, and David L. Kulhavy</i>	447
EVOLUTION OF NEST-BUILDING BEHAVIOR IN <i>AGAPORNIS</i> PARROTS. <i>Jessica R. Eberhard</i>	455
IN MEMORIAM: ROGER TORY PETERSON, 1908–1996. <i>Susan Roney Drennan</i>	465
IN MEMORIAM: HELMUT SICK, 1910–1991. <i>François Vuilleumier</i>	470
SHORT COMMUNICATIONS	
Ecological neighborhoods in Red-cockaded Woodpecker populations. <i>R. Todd Engstrom and Grzegorz Mikusinski</i>	473
What is the function of first eggs in Crested Penguins? <i>Colleen Cassidy St. Clair</i>	478
Natal philopatry and close inbreeding in Cory's Shearwater (<i>Calonectris diomedea</i>). <i>Corinne Rabouan, Jean-Claude Thibault, and Vincent Bretagnolle</i>	483
Chipmunks use leverage to eat oversized eggs: Support for the use of quail eggs in artificial nest studies. <i>David P. Craig</i>	486
Chick recognition in American Avocets: A chick-exchange study. <i>Szabolcs Lengyel, Julie A. Robinson, and Lewis W. Oring</i>	490
Implications of frequent habitat switches in foraging Bar-tailed Godwits. <i>Brian J. McCaffery</i>	494
Frequency of extrapair young increases in second broods of Eastern Phoebes. <i>Kelvin F. Conrad, Raleigh J. Robertson, and Peter T. Boag</i>	497
An application of O'Connor's brood-reduction model. <i>Melinda S. LaBranche</i>	502
Reproductive success of Belding's Savannah Sparrows in a highly fragmented landscape. <i>Abby N. Powell and Christine L. Collier</i>	508
Response of Eastern Willets (<i>Catoptrophorus s. semipalmatus</i>) to vocalizations of Eastern and Western (<i>C. s. inornatus</i>) willets. <i>Hector D. Douglas III</i>	514
Size-selective predation by a specialist forager, the Roseate Tern. <i>David A. Shealer</i>	519
Female Adélie Penguins acquire nest material from extrapair males after engaging in extrapair copulations. <i>F. M. Hunter and L. S. Davis</i>	526
"Wife-sharing" in the Tasmanian Native Hen (<i>Gallinula mortierii</i>): Is it caused by a male-biased sex ratio?. <i>Anne W. Goldizen, Alan R. Goldizen, David A. Putland, David M. Lambert, Craig D. Millar, and Jason C. Buchan</i>	528
A new intragenetic <i>Dendroica</i> hybrid from Hispaniola. <i>Steven C. Latta, Kenneth C. Parkes, and Joseph M. Wunderle, Jr.</i>	533
Allozymic and morphometric comparisons among Indigo and Lazuli buntings and their hybrids. <i>Myron C. Baker and Michael S. Johnson</i>	537
Erratum: Weathers (1997). <i>Wesley W. Weathers</i>	543
REVIEWS. <i>Edited by Carl D. Marti</i>	544
100 YEARS AGO IN <i>THE AUK</i>	554

NUMBER 3

OVERVIEWS

NEW SPECIES AND NEW SPECIES LIMITS IN BIRDS. <i>A. Townsend Peterson</i>	555
--------------------------------------------------------------------------------	-----

ARTICLES

A NEW <i>HERPSILOCHMUS</i> ANTWRAN (AVES: THAMNOPHILIDAE) FROM NORTHERN AMAZONIAN PERU AND ADJACENT ECUADOR: THE ROLE OF EDAPHIC HETEROGENEITY OF <i>TERRA FIRME</i> FOREST. <i>Bret M. Whitney and José Alvarez Alonso</i>	559
USE OF VOCALIZATIONS TO ESTABLISH SPECIES LIMITS IN ANTIBIRDS (PASSERIFORMES: THAMNOPHILIDAE). <i>Morton L. Isler, Phyllis R. Isler, and Bret M. Whitney</i>	577
WINGBEAT FREQUENCY OF TWO <i>CATHARUS</i> THRUSHES DURING NOCTURNAL MIGRATION. <i>Robert H. Diehl and Ronald P. Larkin</i>	591
HIGH PATERNITY WITHOUT PATERNITY-ASSURANCE BEHAVIOR IN THE PURPLE SANDPIPER, A SPECIES WITH HIGH PATERNAL INVESTMENT. <i>Elin P. Pierce and Jan T. Lifjeld</i>	602
DENSITY-DEPENDENT EFFECTS ON GROWTH, BODY SIZE, AND CLUTCH SIZE IN BLACK BRANT. <i>James S. Sedinger, Mark. S. Lindberg, Brian T. Person, Michael W. Eichholz, Mark P. Herzog, and Paul L. Flint</i>	613
MOLECULAR PHYLOGENETICS OF THE GENUS <i>PIRANGA</i> : IMPLICATIONS FOR BIOGEOGRAPHY AND THE EVOLUTION OF MORPHOLOGY AND BEHAVIOR. <i>Kevin J. Burns</i>	621
DAILY ENERGY EXPENDITURE OF MALE AND FEMALE MARSH HARRIER NESTLINGS. <i>Bernd Riedstra, Cor Dijkstra, and Serge Daan</i>	635
COLONIAL NESTERS IN A DETERIORATING HABITAT: SITE FIDELITY AND COLONY DYNAMICS OF LESSER SNOW GEESE. <i>Barbara Ganter and Fred Cooke</i>	642
AN UNUSUAL SEQUENCE OF FLIGHT-FEATHER MOLT IN COMMON MURRES AND ITS EVOLUTIONARY IMPLICATIONS. <i>Christopher W. Thompson, Monique L. Wilson, Edward F. Melvin, and D. John Pierce</i>	653
FORAGING-NICHE DYNAMICS OF GADWALLS AND AMERICAN COOTS IN WINTER. <i>S. Keith McKnight and Gary R. Hepp</i>	670
VARIATION IN EJACULATE QUALITY IN DARK-EYED JUNCOS ACCORDING TO SEASON, STAGE OF REPRODUCTION, AND TESTOSTERONE TREATMENT. <i>Tracey L. Kast, Ellen D. Ketterson, and Val Nolan Jr.</i>	684
RESPONSE OF GREAT HORNED OWLS TO EXPERIMENTAL "HOT SPOTS" OF SNOWSHOE HARE DENSITY. <i>Christoph Rohner and Charles J. Krebs</i>	694
MORPHOLOGICAL ADAPTATION WITH NO MITOCHONDRIAL DNA DIFFERENTIATION IN THE COASTAL PLAIN SWAMP SPARROW. <i>Russell Greenberg, Pedro J. Cordero, Sam Droege, and Robert C. Fleischer</i>	706
PHILIPPINE BIRDS OF PREY: INTERRELATIONS AMONG HABITAT, MORPHOLOGY, AND BEHAVIOR. <i>Anita Gamauf, Monika Preleuthner, and Hans Winkler</i>	713
INTERACTIONS AMONG ENVIRONMENTAL STRESS, BODY CONDITION, NUTRITIONAL STATUS, AND DOMINANCE IN GREAT TITS. <i>Luis M. Carrascal, Juan Carlos Senar, Ingrid Mozetich, Fransec Uribe, and Jordi Domenech</i>	727
INFLUENCE OF BREEDING PHENOLOGY AND CLUTCH SIZE ON HYBRIDIZATION BETWEEN HERMIT AND TOWNSEND'S WARBLERS. <i>Scott F. Pearson and Sievert Rohwer</i>	739
BARRED OWL HOME RANGE AND HABITAT SELECTION IN THE BOREAL FOREST OF CENTRAL SASKATCHEWAN. <i>Kurt M. Mazur, Shanna D. Frith, and Paul C. James</i>	746
IN MEMORIAM: MARTIN HUMPHREY MOYNIHAN, 1928-1996. <i>Neal Griffith Smith</i>	755
SHORT COMMUNICATIONS	
Fat storage in male Willow Warblers in spring: Do residents arrive lean or fat? <i>Thord Fransson and Sven Jakobsson</i>	759
Are rooster crows honest signals of fighting ability? <i>Bryant Furlow, Rebecca T. Kimball, and Michael C. Marshall</i>	763

Modeling the breeding cycle of long-lived birds: Why do King Penguins try to breed late? <i>Anders Brodin, Olof Olsson, and Colin W. Clark</i>	767
Flight without horizon references in European Starlings. <i>Robert G. Moyle and Frank H. Heppner</i>	771
Molt patterns of nonbreeding White-faced Whistling-Ducks in South Africa. <i>Scott A. Petrie</i>	774
Metabolic rate, temperature regulation, and the energetic implications of roost nests in the Bananaquit (<i>Coereba flaveola</i>). <i>Michele Merola-Zwartjes</i>	780
Assortative mating and sexual size dimorphism in Western and Semipalmated sandpipers. <i>Brett K. Sandercock</i>	786
Subadult movement patterns of the endangered Hawaiian Stilt (<i>Himantopus mexicanus knudseni</i>). <i>J. Michael Reed, Michael D. Silbernagle, Karen Evans, Andrew Engilis, Jr., and Lewis W. Oring</i>	791
COMMENTARIES	
Modeling departure strategies in auks. <i>Anthony J. Gaston</i>	798
Evaluating models of departure strategies in alcids. <i>R. C. Ydenberg</i>	800
On forest-interior species, edge avoidance, area sensitivity, and dogmas in avian conservation. <i>Marc-André Villard</i>	801
REVIEWS. Edited by Carl D. Marti	806
100 YEARS AGO IN THE AUK	821

NUMBER 4

OVERVIEWS

ON THE IMPORTANCE OF STOPOVER SITES TO MIGRATING BIRDS. <i>Richard L. Hutto</i>	823
AVIAN GENITALIA. <i>James V. Briskie</i>	826

ARTICLES

STOPOVER ECOLOGY AND HABITAT USE OF MIGRATORY WILSON'S WARBLERS. <i>Wang Yong, Deborah M. Finch, Frank R. Moore, and Jeffrey F. Kelly</i>	829
TEMPERATURE, EGG MASS, AND INCUBATION TIME: A COMPARISON OF BROWN-HEADED COWBIRDS AND RED-WINGED BLACKBIRDS. <i>Bill M. Strausberger</i>	843
WINTER RANGE EXPANSION AND RELATIONSHIPS BETWEEN LANDSCAPE AND MORPHOMETRICS OF MIDCONTINENT LESSER SNOW GEESE. <i>Ray T. Alisauskas</i>	851
EXERCISE CAPACITY OF HOUSE WREN NESTLINGS: BEGGING CHICKS ARE NOT WORKING AS HARD AS THEY CAN. <i>Mark A. Chappell and Gwen C. Bachman</i>	863
NESTING SUCCESS IN BROWN-AND-YELLOW MARSHBIRDS: EFFECTS OF TIMING, NEST SITE, AND BROOD PARASITISM. <i>Myriam E. Mermoz and Juan C. Reboreda</i>	871
FOREST AREA AND HABITAT QUALITY FOR NESTING WOOD THRUSHES. <i>Howard J. Weinberg and Roland R. Roth</i>	879
EVOLUTIONARY DIFFERENTIATION IN THREE ENDEMIC WEST INDIAN WARBLERS. <i>Irby J. Lovette, Eldredge Bermingham, Gilles Seutin, and Robert E. Ricklefs</i>	890
BODY-FAT LEVELS AND ANNUAL RETURN IN MIGRATING SEMIPALMATED SANDPIPERS. <i>Charles Pfister, Mark J. Kasprzyk, and Brian A. Harrington</i>	904
ASYMMETRICAL FORCE PRODUCTION IN THE MANEUVERING FLIGHT OF PIGEONS. <i>Douglas R. Warrick, Kenneth P. Dial, and Andrew A. Biewener</i>	916
EFFECTS OF PRIOR NESTING SUCCESS ON SITE FIDELITY AND BREEDING DISPERSAL: AN EXPERIMENTAL APPROACH. <i>Carola A. Haas</i>	929
PHYLOGENETIC RELATIONSHIPS AMONG THE TROGONS. <i>Alejandro Espinosa de los Monteros</i>	937
FOREST SIZE AND ISOLATION HAVE NO EFFECT ON REPRODUCTIVE SUCCESS OF EURASIAN NUTHATCHES (<i>SITTA EUROPAEA</i>). <i>Erik Matthysen and Frank Adriaensen</i>	955
INDIVIDUAL AND TEMPORAL VARIATION IN CLOACAL PROTUBERANCE SIZE OF MALE BEARDED TITS (<i>PANURUS BIARMICUS</i>). <i>Andreas Sax and Herbert Hoi</i>	964
MODELING COLONY-SITE DYNAMICS: A CASE STUDY OF GULL-BILLED TERNS (<i>STERNA NILOTICA</i>) IN COASTAL VIRGINIA. <i>R. Michael Erwin, James D. Nichols, T. Brian Eyler, Daniel B. Stotts, and Barry R. Truitt</i>	970

EFFECTS OF DOUBLE BROODING ON PRODUCTIVITY OF CRESTED CARACARAS. <i>Joan L. Morrison</i>	979
RECRUITMENT MODELS FOR MALLARDS IN EASTERN NORTH AMERICA. <i>Susan E. Sheaffer</i>	988
DIVERSITY AND CONSERVATION OF UNDERSTORY BIRDS IN THE TILARÁN MOUNTAINS, COSTA RICA. <i>Bruce E. Young, Debra DeRosier, and George V. N. Powell</i>	998
MORPHOLOGICAL DIFFERENCES RELATIVE TO ECOLOGICAL SEGREGATION IN PETRELS (FAMILY: PROCELLARIIDAE) OF THE SOUTHERN OCEAN AND TROPICAL PACIFIC. <i>Larry B. Spear and David G. Ainley</i>	1017
EFFECTS OF GEOGRAPHIC LOCATION AND HABITAT ON BREEDING PARAMETERS OF GREAT TITS. <i>Juan José Sanz</i>	1034
IN MEMORIAM: BETSY TRENT THOMAS, 1923–1998. <i>Morton L. Isler and Clemencia Rodner</i>	1052
SHORT COMMUNICATIONS	
Genetic differentiation between wintering populations of Lesser Snow Geese nesting on Wrangel Island. <i>Sergei B. Kuznetsov, Vasily V. Baranyuk, and John Y. Takekawa</i>	1053
Rejection of cowbird eggs by Mourning Doves: A manifestation of nest usurpation? <i>Brian D. Peer and Eric K. Bollinger</i>	1057
Timing of breeding and reproductive costs in Collared Flycatchers. <i>David A. Wiggins, Tomas Pärt, and Lars Gustafsson</i>	1063
Competition for nest sites between Kelp Gulls (<i>Larus dominicanus</i>) and terns (<i>Sterna maxima</i> and <i>S. eurygnatha</i>) in Patagonia. <i>Flavio Quintana and Pablo Yorio</i>	1068
Rediscovery of <i>Hylopezus (macularius) auricularis</i> : Distinctive song and habitat indicate species rank. <i>Sjoerd Majer</i>	1072
Chromosome-specific intron size differences in the avian CHD gene provide an efficient method for sex identification in birds. <i>Nate W. Kahn, Judith St. John, and Thomas W. Quinn</i>	1074
COMMENTARY	
On the role of the referee. <i>Kenneth C. Parkes</i>	1079
REVIEWS. <i>Edited by Carl D. Marti</i>	1081
REVIEWERS FOR <i>THE AUK</i> , 1998	1094
100 YEARS AGO IN <i>THE AUK</i>	1096
NOTES AND NEWS	1097
INDEX TO VOLUME 115. <i>Compiled by Alison E. H. Perkins</i>	1098

SUPPLEMENT

RECENT ORNITHOLOGICAL LITERATURE No. 75, 1-31

DATES OF ISSUES OF "THE AUK"

VOL. 115, NO. 1-9 JANUARY 1998

VOL. 115, NO. 2-10 APRIL 1998

VOL. 115, NO. 3-7 JULY 1998

VOL. 115, NO. 4-20 OCTOBER 1998

Contents (continued)



MORPHOLOGICAL DIFFERENCES RELATIVE TO ECOLOGICAL SEGREGATION IN PETRELS (FAMILY: PROCELLARIIDAE) OF THE SOUTHERN OCEAN AND TROPICAL PACIFIC. <i>Larry B. Spear and David G. Ainley</i>	1017
EFFECTS OF GEOGRAPHIC LOCATION AND HABITAT ON BREEDING PARAMETERS OF GREAT TITS. <i>Juan José Sanz</i>	1034
IN MEMORIAM: BETSY TRENT THOMAS, 1923–1998. <i>Morton L. Isler and Clemencia Rodner</i>	1052
SHORT COMMUNICATIONS	
Genetic differentiation between wintering populations of Lesser Snow Geese nesting on Wrangel Island. <i>Sergei B. Kuznetsov, Vasily V. Baranyuk, and John Y. Takekawa</i>	1053
Rejection of cowbird eggs by Mourning Doves: A manifestation of nest usurpation? <i>Brian D. Peer and Eric K. Bollinger</i>	1057
Timing of breeding and reproductive costs in Collared Flycatchers. <i>David A. Wiggins, Tomas Pärt, and Lars Gustafsson</i>	1063
Competition for nest sites between Kelp Gulls (<i>Larus dominicanus</i>) and terns (<i>Sterna maxima</i> and <i>S. eurygnatha</i>) in Patagonia. <i>Flavio Quintana and Pablo Yorio</i>	1068
Rediscovery of <i>Hylopezus (macularius) auricularis</i> : Distinctive song and habitat indicate species rank. <i>Sjoerd Maijer</i>	1072
Chromosome-specific intron size differences in the avian CHD gene provide an efficient method for sex identification in birds. <i>Nate W. Kahn, Judith St. John, and Thomas W. Quinn</i>	1074
COMMENTARY	
On the role of the referee. <i>Kenneth C. Parkes</i>	1079
REVIEWS. <i>Edited by Carl D. Marti</i>	1081
REVIEWERS FOR <i>THE AUK</i> , 1998	1094
100 YEARS AGO IN <i>THE AUK</i>	1096
NOTES AND NEWS	1097
INDEX TO VOLUME 115. <i>Compiled by Alison E. H. Perkins</i>	1098

**CONTENTS**

REVIEWS

- ON THE IMPORTANCE OF STOPOVER SITES TO MIGRATING BIRDS. *Richard L. Hutto* 823
 AVIAN GENITALIA. *James V. Briskie* 826

ARTICLES

- STOPOVER ECOLOGY AND HABITAT USE OF MIGRATORY WILSON'S WARBLERS. *Wang Yong, Deborah M. Finch, Frank R. Moore, and Jeffrey F. Kelly* 829
 TEMPERATURE, EGG MASS, AND INCUBATION TIME: A COMPARISON OF BROWN-HEADED COWBIRDS AND RED-WINGED BLACKBIRDS. *Bill M. Strausberger* 843
 WINTER RANGE EXPANSION AND RELATIONSHIPS BETWEEN LANDSCAPE AND MORPHOMETRICS OF MIDCONTINENT LESSER SNOW GEESSE. *Ray T. Alisauskas* 851
 EXERCISE CAPACITY OF HOUSE WREN NESTLINGS: BEGGING CHICKS ARE NOT WORKING AS HARD AS THEY CAN. *Mark A. Chappell and Gwen C. Bachman* 863
 NESTING SUCCESS IN BROWN-AND-YELLOW MARSHBIRDS: EFFECTS OF TIMING, NEST SITE, AND BROOD PARASITISM. *Myriam E. Mermoz and Juan C. Reboreda* 871
 FOREST AREA AND HABITAT QUALITY FOR NESTING WOOD THRUSHES. *Howard J. Weinberg and Roland R. Roth* 879
 EVOLUTIONARY DIFFERENTIATION IN THREE ENDEMIC WEST INDIAN WARBLERS. *Irby J. Lovette, Eldredge Bermingham, Gilles Seutin, and Robert E. Ricklefs* 890
 BODY-FAT LEVELS AND ANNUAL RETURN IN MIGRATING SEMIPALMATED SANDPIPERS. *Charles Pfister, Mark J. Kasprzyk, and Brian A. Harrington* 904
 ASYMMETRICAL FORCE PRODUCTION IN THE MANEUVERING FLIGHT OF PIGEONS. *Douglas R. Warrick, Kenneth P. Dial, and Andrew A. Biewener* 916
 EFFECTS OF PRIOR NESTING SUCCESS ON SITE FIDELITY AND BREEDING DISPERSAL: AN EXPERIMENTAL APPROACH. *Carola A. Haas* 929
 PHYLOGENETIC RELATIONSHIPS AMONG THE TROGONS. *Alejandro Espinosa de los Monteros* 937
 FOREST SIZE AND ISOLATION HAVE NO EFFECT ON REPRODUCTIVE SUCCESS OF EURASIAN NUT-HATCHES (*SITTA EUROPAEA*). *Erik Matthysen and Frank Adriaensen* 955
 INDIVIDUAL AND TEMPORAL VARIATION IN CLOACAL PROTUBERANCE SIZE OF MALE BEARDED TITS (*PANURUS BIARMICUS*). *Andreas Sax and Herbert Hoi* 964
 MODELING COLONY-SITE DYNAMICS: A CASE STUDY OF GULL-BILLED TERNS (*STERNA NILOTICA*) IN COASTAL VIRGINIA. *R. Michael Erwin, James D. Nichols, T. Brian Eyler, Daniel B. Stotts, and Barry R. Truitt* 970
 EFFECTS OF DOUBLE BROODING ON PRODUCTIVITY OF CRESTED CARACARAS. *Joan L. Morrison* 979
 RECRUITMENT MODELS FOR MALLARDS IN EASTERN NORTH AMERICA. *Susan E. Sheaffer* 988
 DIVERSITY AND CONSERVATION OF UNDERSTORY BIRDS IN THE TILARÁN MOUNTAINS, COSTA RICA. *Bruce E. Young, Debra DeRosier, and George V. N. Powell* 998

(Continued on inside back cover)