

## ORNITHOLOGICAL LITERATURE

**THE PINYON JAY: BEHAVIORAL ECOLOGY OF A COLONIAL AND COOPERATIVE CORVID.** By John M. Marzluff and Russell P. Balda, T. & A. D. Poyser, Ltd., London, England, 1992: 317 + xxi pp., 116 figs., 44 tables. \$45.00.—In the spring of 1968, Russ Balda and Gary Bateman began studying the breeding biology of Pinyon Jays (*Gymnorhinus cyanocephalus*) in the ponderosa pine forests east of Flagstaff, Arizona. I was fortunate to be an undergraduate field assistant on the project for several years, beginning in the spring of 1969. In subsequent years and continuing through 1987, a long line of graduate students and assistants has been involved in the project, studying every aspect of Pinyon Jay biology. During this time, focus changed to another flock whose home range included residential areas in Flagstaff. Each year, virtually all new members of this town flock were color banded so that the relationships of jays and social structure of the flock gradually emerged. This book summarizes the findings of that 19-year-long research effort. Thirteen chapters cover topics including an overview of the annual cycle of a Pinyon Jay flock, the fall harvest and storage of piñon pine seeds and their importance in the economy of jays throughout the year, taxonomic relationships of Pinyon Jays to other New World and Old World corvids, a description of the jay vocal repertoire and a detailed analysis of the use of vocal communication in jay social life, dominance relationships among jay age and sex classes, social structure of a flock, mating behavior, nest site selection and its effect on nesting success, mobbing and predator-avoidance behavior, parental care and breeding success, juvenile and yearling survival and their recruitment into the flock, dispersal of individuals between flocks, social and environmental correlates of jay longevity, and population dynamics within a flock. Six appendices present data on the number and spacing of nests within colonies, mean breeding productivity each year of the study, annual variation in jay survival rates, causes of jay mortality, a genealogical tree of the jays over 16 years, and a list of common and scientific names of species mentioned in the text. The book concludes with a bibliography of about 300 references and an index.

The value of long-term studies of individually marked birds is readily apparent in the types of questions that the authors can ask and the answers that are forthcoming. For example, the authors analyze the influence of weather and the size of piñon pine seed crops on the timing and success of breeding efforts, determine how nest site selection changes with a pair's breeding experience, calculate lifetime reproductive success of male and female jays, compare social dominance to reproductive success, and investigate the past reproductive success of jays that have lost their mates and determine what influence this has on the selection of new mates.

The book is far more than just a description of Pinyon Jay natural history. The authors and their collaborators exhibit a strong commitment to hypothesis testing and experimental analyses to answer important questions about the lives of jays. The background and rationale for experiments are described in terms that are interesting and entertaining. References to the literature (many by the authors and their colleagues) are cited sparingly, which increases the readability of the book to amateur ornithologists, but, at times, makes it difficult to trace ideas to the primary literature. The numerous figures generally are of good quality but a few are drawn poorly (e.g., Fig. 1). The illustrations by Tony Angell nicely accent the text.

The town flock, from which most of the information in the book is derived, is an atypical Pinyon Jay flock in some regards. During the latter years of the study, the town flock was in decline owing to a variety of anthropogenic disturbances. Suburban sprawl has claimed jay nesting habitat, increased human refuse has attracted more ravens and crows which are responsible for increased egg and nestling mortality, and trigger-happy children have in-

creased mortality rates of adult jays. On the other side of the ledger, residential bird feeders have probably had a positive influence on the size of the town flock. The net effect, however, is that the Flagstaff environs appear to have become less suitable for Pinyon Jays in recent years. This raises some important questions concerning the applicability of certain aspects of the information presented in this book (e.g., date of the onset of breeding, nesting success, survival rates of juvenile, yearling, and adult age classes, flock population dynamics) to Pinyon Jay flocks that are not influenced significantly by humans.

Twenty-five years ago, the Pinyon Jay was a mysterious and poorly known bird. Today, thanks to Balda, Marzluff, and their associates, the mystery has been replaced by fascination, and it can fairly be said that few birds are understood as well as the Pinyon Jay. This book presents a wealth of information in a clear and readable style and should serve as a valuable source of information for those interested in the social lives of birds. —STEPHEN B. VANDER WALL.

A GUIDE TO THE BIRDS OF TRINIDAD AND TOBAGO (Second edition). By Richard French, illus. by John P. O'Neill and Don R. Eckleberry. Comstock Publ. Assoc., Ithaca, New York. 1991: 426 pp., 29 color plates, nine color portraits, 4 maps, 39 text figs. \$72.50 (\$34.50 paper).—The first edition of this book appeared in 1973 (revised in 1976 and 1980) and was a great improvement over any existing reference source for this area then available (Collins, Wilson Bull. 87:127–129, 1975); the current edition still retains that position! Although much of the extensive introductory text remains the same, except where updated material has been provided this is not just a cosmetically changed book with a new publisher and page size ( $5\frac{1}{2}'' \times 8\frac{1}{2}''$ ). It includes an additional twenty-eight species accounts, mostly representing migrant species and vagrants which have been detected in recent years by the increased numbers of field observers. Also a number of species accounts have been substantially rewritten to reflect recent changes in status or abundance. For example, the Southern Lapwing (*Vanellus chilensis*), first recorded in Trinidad in 1961 and previously considered an "occasional visitor," is now a well-established resident breeder, particularly in areas cleared for cattle ranching. As previously noted in my more detailed review (Collins, op. cit.), the species accounts contain a wealth of information from studies in Trinidad and summaries of work done elsewhere. The extensive "Literature Cited" section now includes 327 entries, an increase of 93 from the first edition. This book very successfully serves the dual role of a general avifaunal reference and a field guide. The enlarged page size does not make it too bulky for use in the field and in fact contributed to a 10% decrease in total pages despite the considerable amount of new material included.

One new color plate has been added to the original 28, and seven of 25 text figures of birds have been redrawn. However, the original color plates have been reprinted in their original size despite the enlarged page of the new edition. I consider this a particularly unfortunate decision as they frequently did not make full use of the previous  $5'' \times 7\frac{1}{2}''$  page size. Distinctive differences are hard to see when the reproduction is this small. The inclusion of one more color plate should be a plus, but the choice of species in it completely eludes me. Five of the eight species shown are also illustrated as text figures, and the remaining ones are two distinctive raptors and the Scarlet Ibis (*Eudocimus ruber*)! Certainly other harder-to-identify species could have been chosen which would have enhanced this book's field guide role. I view this as a wasted opportunity. My original objection (op. cit.) to the inclusion in the limited color plates of at least 10 species which are "rare visitors" or "possible rare resident" and one species mistakenly included in the avifauna still remains. Similarly, my previous critique of the colors and proportions of some species could not be addressed

in this straight reprinting of the original plates. The Eckleberry portraits which have been slightly cropped are still magnificent.

Despite these uncorrected problems, this book still will be wanted by any birder visiting Trinidad and Tobago, as well as by many ornithologists as a general reference. It continues to outcompete, by a wide margin, anything else currently available or likely to appear in the near future. —CHARLES T. COLLINS.

**NEW WORLD PARROTS IN CRISIS: SOLUTIONS FROM CONSERVATION BIOLOGY.** Edited by Steven R. Beissinger and Noel F. R. Snyder. Smithsonian Institution Press, Washington and London. 1992: 288 pp. \$35.00.—No sizable group of birds has more endangered species than the New World parrots. Almost one-third of the 140 species are in imminent danger of extinction! Nearly all the remaining species are declining in numbers. The basic causes are known: habitat destruction and excessive “take” for the international pet trade, of which the United States is a major consumer. Cataclysmic growth of human populations and concomitant agricultural practices underlie most loss of natural habitats. The density of humans the earth can sustain is a problem that should be addressed by all persons of influence, who have even the slightest degree of objective foresight. Excessive “take” of wildlife is a far more restricted problem, and if birds are involved then the “take” is a problem that should be addressed by ornithologists. The American Ornithologists’ Union addressed the problems confronting New World parrots at its 1990 annual meeting held in Los Angeles. A full-day symposium and discussion was devoted to the topic. This book is a result.

Chapters 1–9 are the reports of a distinguished group of parrot biologists who spoke at the symposium. Major topics discussed are the causes of the decline of particular species, population dynamics, the complex social systems of the few species for which data have been obtained, and the potential values of ecotourism, sustainable harvesting, and aviculturists to parrot conservation, and, finally, some of the appalling facts regarding the international pet trade. Chapter 10 is an edited transcript of the discussion that followed, which includes the comments and questions of the many attendees of the symposium. Chapter 11, “Toward a conservation strategy for Neotropical psittacines,” was authored by Beissinger and Snyder, and Frances C. James, who moderated the discussion. This chapter includes discussion of the problems that should be addressed by persons involved with drafting laws designed to regulate the import of exotic birds.

“New World Parrots in Crisis” should be read by all persons interested in endangered wildlife or in conservation in general. It illustrates beautifully both the simplicity and the complexities of developing a conservation program for any group of organisms. A potentially useful feature is the summaries in Spanish. I suggest “potential” be inserted as the second word in the title of the chapter “The role of private aviculture in the conservation of Neotropical psittacines.” As far as I am aware, private parrot breeders have contributed little to the conservation of New World parrots, and I suspect if the net effect of these persons were measured, it would be negative. Perhaps because I live in Florida, I would like to have seen a chapter on introduced parrots. More than 60 species of parrots have been identified flying free in Florida, the populations of many number in the hundreds, and almost half are known to breed “in the wild.” Perhaps serious thought will be directed toward this “cageless menagerie” when one or more of the parrots are deemed agricultural pests.

A treatise on the conservation of the New World parrots is timely. As I prepare this review (July 1992), two bills, each designed to limit the taking of birds from the wild for the pet trade, are before the Congress of the United States. Certainly some of the persons who influenced the drafting of these bills had the New World parrots in mind as primary

examples of a group in trouble. The Wild Bird Protection Act would ban immediately the importation of wild birds for the pet trade; the Exotic Bird Conservation Act extends bird imports for another five years. The three authors of Chapter 11 in "Parrots in Crisis" favor immediate ban. I wonder if any member of Congress has had the common sense and interest to contact representatives of the AOU for information and opinions regarding these issues?—GLEN E. WOOLFENDEN.

IN SEARCH OF ARCTIC BIRDS. By Richard Vaughan. T. & A. D. Poyser, London. 1992: 431 pp., 73 photographic plates, 26 line drawings, 40 maps. \$39.95.—In "Search of Arctic Birds" is not only a scholarly treatise on Arctic adventure, but it is also a magnificent compilation of ornithological history. Richard Vaughan is a naturalist-historian of the first order, leaving no stone unturned in uncovering events that took place from the beginning of Arctic bird study. Conjecture is not his forte.

Vaughan admits that his book is not a monograph on birds of the Arctic; rather it is about the human pursuit of birds in the Arctic. He describes the way polar birds have been hunted for food and sport, collected for scientific purposes, and studied by amateur and professional birders all around the Holarctic. Evidently he has visited numerous Arctic sites, judging by his many personal photographs of various bird species that enhance the text. Relatively few photos were borrowed from others, and for the most part they cover those species that inhabit the hard to negotiate places in Siberia. The black-and-white photos of all these birds are sharp and form a nice grouping of Arctic species. Simple black-and-white line drawings by artist Gunnar Brusewitz make very effective chapter headings, while a scattering of others by him were used where needed. Uncluttered maps also do the job. Color adorns only the jacket cover, but color illustrations in a book of this type would serve only to increase its cost.

Commencing with an introductory description of physical aspects of the Arctic and its native peoples, Vaughan runs the gamut from early discovery ships to modern bird watching, including useful information on where to go for certain species and how to get there. Falconers the world over will love Vaughan's chapter, "Falcons from the Arctic." A special chapter was written for Vaughan's countrymen, entitled "Britons in the Russian and Siberian Arctic," still another for Americans and Canadians on "Bird collecting in North America." The chapter that captivated me was "Ornithological treasure trove" because it dealt largely with the Red Knot (*Calidris canutus*), a high Arctic breeder and long-time favorite of many polar adventurers. Somewhere I read, and later carelessly quoted in print, that Commander Robert Peary was the first to discover Red Knot eggs—the preserved shells of which were most sought after and prized by collectors. After considering Vaughan's account, I am convinced that Peary's discovery of the alleged first knot eggs is as suspect as his heralded sledging trip to the North Pole. It is this intriguing historic research by Vaughan that one finds fascinating.

Perhaps Vaughan's most significant ornithological chapter deals with Soviet bird studies in the Siberian Arctic. Comprehending this chapter is a must for all serious polar ornithologists. Another chapter devoted to conservation is equally appropriate for birders, tourists, and anyone who visits fragile northern bird colonies. The chapter is certainly applicable to those individuals engaged in endless debates regarding the hunting of certain species, e.g., Tundra Swans (*Cygnus columbianus*), that elicit a lot of concern these days.

The Richard Vaughan I met in 1989 at Barrow, Alaska was a serious, devoted field person who paid attention to detail and exuded enthusiasm. He worked hours on end from a blind (hide) erected near a Snowy Owl's (*Nyctea scandiaca*) nest. Later he kindly shared with me the use of his blind which was placed near the only Pomarine Jaeger's (*Stercorarius pomarinus*) nest found that season. At the time, I lacked photos of that particular species.

Richard Vaughan's impeccable use of the English language comes across in his writings, providing a smooth and entertaining read. Here is a delightful book packed full of information that can be used and enjoyed by anyone interested in birds.—DAVID FREELAND PARMELEE.

**BIRDS OF SOUTHWESTERN BRAZIL—CATALOGUE AND GUIDE TO THE BIRDS OF THE PANTANAL OF MATO GROSSO AND ITS BORDER AREAS.** By Balthasar Dubs, illus. by the author. Bertrona-Verlag, Hinterzelg 35, CH-8700 Küsnacht/ZH Switzerland. 1992: 164 pp., 58 color plates, 8 pp. of black-and-white habitat photos, 1 map, 2 numbered text figs. US \$35.00 plus mailing costs.—Anyone going to Brazil's great Pantanal marsh with birds in mind will want this book. As the first English-language guide to birds in any part of Brazil (on the fly-leaf the author apologizes, in Portuguese, to Brazilians, for having written the book in English), and the first guide in any language that includes all the birds of a specific Brazilian region, it provides valuable orientation to the area's 698 species. A short introductory section covers habitats, biogeography, and ornithological research in the Pantanal. Each species account is headed by the scientific name, with English and Brazilian names also provided (the latter apparently from Willis and Oniki's 1991 list). The name used in the original scientific description and its author are given to facilitate finding the species in older literature. Brief sections within each species account cover description, local distribution, ecology, and range. The color plates portray 534 species. Separate indexes are provided for English and scientific names.

Although the author refers to the book as a field guide, it lacks a number of the characteristics of one. Its hard cover and 7" × 9¾" dimensions would demand an out-sized pocket. Illustrations are grouped at the end of the volume, and almost one-fourth of the species are not pictured. There are no pictures of caprimulgids or swifts, and only 40 of the area's 94 flycatcher species are portrayed. There are no range maps. No information on vocalization is given. Identifying behavior is rarely mentioned, not even the jumping of the Blue-black Grassquit (*Volatinia jacarina*) or the distinctive voice of the Great Kiskadee (*Pitangus sulphuratus*).

Descriptive material in the species accounts includes total length as well as bill, wing, and tail measurements and generally adequate plumage detail, though I have trouble with such things as the Great Kiskadee's superciliary stripe "extending down the neck" (also so illustrated) and the lack of precision in limiting the plumage description of the Boat-billed Flycatcher (*Megarynchus pitangua*) to "colours as in the [Great Kiskadee]". The ecology section of a species account may be limited to a stark "inhabits forests" but usually holds more extensive information that may include food preferences, nest shape, egg color, flocking tendencies, and migratory data. Range information includes reference to subspecies and their location.

The illustrations of birds are reminiscent of the Olrog/Frisch school—clumsy and unaesthetic—but a lot better than nothing. They were based on museum skins and are monotonously wooden in aspect, almost all sharing an identical stance showing the right profile. If one can ignore the total lack of streamlined grace that is the essence of most birds, many of these sketches are surprisingly effective in presenting the principal identifying features of the birds represented. Bill, tarsus, and soft part colors are not shown (the woodcreepers have no legs at all), but plumage colors are often good. I noticed rackets on the elongated tail-feathers of the Swallow-tailed Manakin (*Chiroxiphia caudata*) that I have never seen on a bird of this species. The birds grouped on each plate are sized appropriately in relation to each other and to a bar representing 10 cm.

Books on the birds of Brazil are all too scarce, so each new one that offers something

distinctive is welcome. "Birds of Southwestern Brazil" merits praise as Brazil's first field guide and for covering the world's most extensive marshland, as well as because it is well printed and easy to use as a reference. Its inadequacies, while unfortunate, are not disabling. Take it along when you go to the Pantanal. — WILLIAM BELTON.

A MONOGRAPH OF THE PHEASANTS. By William Beebe. Dover Publications, 31 East 2nd St., Mineola, New York 11501. Two volume unabridged reprint of four volumes, Witherby & Co., London, England, and New York Zoological Society, New York, New York, 1918–1922. 1223 pp., 184 black-and-white photos, 20 maps, and 90 full-color plates, clothbound. Vol. 1, \$50.00 and Vol. 2, \$50.00.—Once again a milestone in ornithology has become available. Beebe certainly displayed his flamboyant writing style in these superb volumes. Detailed descriptions, general ecology, plumage, and remarks on early history of nearly 100 species of Phasianidae are covered in the text. His excellent poetic style transfixes the reader, as he has done in his five previous books. Two of these, "Pheasants: their lives and homes" (1926) and "Pheasant jungles" (1927) were written for the general reader and tell of his expeditions in search of pheasants throughout Asia.

Full-colored plates by eminent wildlife artists Louis Agassiz Fuertes, H. Gronvold, G. E. Lodge, C. R. Knight, and H. Jones highlight these volumes. The black-and-white plates, mostly by the author, depict habitats, nests, and eggs, and the haunts of these magnificent birds. No less than 23 of the species covered in these two volumes currently are considered rare, vulnerable, or endangered by King (Endangered birds of the world: the ICBP bird red data book, Smithsonian Institution Press, 1981). It is likely that other species have been added to this list since 1981.

One of the outstanding features of Beebe's monumental work is his enlightening observations of these magnificent birds in their natural environment. With the steady reduction of habitat, as well as predation by the ever-increasing human population throughout their range, it is likely that some species of pheasants may be extirpated within the next decade.

These monumental volumes will be of interest to every serious bird lover, ornithologist, and anyone interested in the natural history of Asia. — HARLAN D. WALLEY.

MY WAY TO ORNITHOLOGY. By Olin Sewall Pettingill, Jr. Univ. Oklahoma Press, Norman. 1992: 245 pp., 28 black-and-white photos. \$24.95.—Olin Sewall Pettingill is one of the grand old men of ornithology. His interest in the amateur side of the science and his willingness to devote considerable energy to popularizing the study of birds have made his name one of a handful to be associated instantly with the field. Given his stature on both the popular and serious sides of ornithology, it might come as a surprise to learn that as a high school and undergraduate student he was not at the top of his class. In fact, he experienced some difficulties even being accepted to Bowdoin, the college of his choice. But nearly everyone's path to his/her eventual career is filled with difficulties, detours, and change. It should be of interest (and comfort) to all of us to read that even the most well-known and successful individuals may have found the roads rocky at times, especially when the narrative is as well written as "My Way to Ornithology".

This autobiographical account takes the author from infancy in 1907 and his school years in New England to his appointment in 1936 to the faculty of Carleton College in Minnesota, his first permanent professional post. Because the focus is on those influences that helped shape his career, many episodes of the author's early life are omitted. However, those that are included are narrated with the details as fresh and crisp as though they happened

yesterday. The author's detailed diary, which he has kept since he was very young, certainly enhanced his memories.

I expected the book to be well written. I did not expect, however, to find that once I started reading, I had difficulty putting it down. Pettingill is a master story-teller and weaves the chapters and episodes together seamlessly. He succeeds in his aim to show us his path to ornithology. I highly recommend this book.—D. SCOTT WOOD.

#### SHORT REVIEWS

**BIRDS, DISCOVERY AND CONSERVATION.** 100 Years of the British Ornithologists' Club. By David Snow (Ed.). Helm Information Ltd., Near Robertsbridge, E. Sussex, England, 1992: ix + 198 pp., 1 col. plate. £19.95.—To celebrate its centennial, the British Ornithologists' Club has issued this handsome anthology of papers from the past issues of the Club's *Bulletin*. The excerpts are grouped into several general topics: Geographical Ornithology; Discovery of New Species and Subspecies; Migration; Ecology and Behaviour; The Cuckoo Contriver; Taxonomy, Systematics and Evolution; The British List; Conservation; and Ornithologists. Many of these were originally read at meetings of the Club and often stimulated spirited discussion which is also printed here. The papers chosen do much to give the present-day reader the flavor and atmosphere of ornithology in the first half of this century. Of special interest are the accounts of early expeditions to remote areas of Asia and Africa and the evolving conservation attitudes.

The volume is graced by an elegant painting by Martin Woodcock of the King-of-Saxony Bird-of-Paradise (*Pteridophora alberti*), and the dust jacket with a painting of the Mikado Pheasant (*Syrnaticus mikado*).—GEORGE A. HALL.

**CURRENT ORNITHOLOGY**, Vol. 9. Dennis M. Power (Ed.). Plenum Press, New York, 1992: xiv + 247 pp., many black-and-white graphs and diagrams. \$69.50.—Volume 9 continues this exemplary series with six reviews by seven authors from the United States, Canada, Argentina, and Sweden. The papers are "The Causes of Extinction of the Passenger Pigeon" by Enrique H. Bucher; "Population Regulation of Seabird Colonies" by David K. Cairns; "The Effects of Investigator Disturbance on Nesting Birds" by Frank Gotmark; "Analyzing Quantitative Relationships between Seabirds and Marine Resource Patches" by J. Christopher Haney and Andrew R. Solow; "Interaction of Nest Predation and Food Limitation in Reproductive Status" by Thomas E. Martin; and "Wood-Warbler Song Systems: A Review of Paruline Singing Behavior" by David A. Spector. Editor Power continues to keep high standards with his selection of reviews.—GEORGE A. HALL.

**CHECKLIST OF THE BIRDS OF BRITAIN AND IRELAND.** Sixth edition. By A. G. Knox (compiler). British Ornithologist's Union, Tring, England, 1992: 50 pp. £5.95.—This edition of the checklist contains minimal information about the 544 species accepted to the British List by the Records Committee of the B.O.U. The status of the species and subspecies regularly seen is given by a coding system. The total number of records is given for those species with less than 100 reports. No changes have been made in the taxonomy, but the suggested changes in English names that have aroused so much discussion in Britain are incorporated.—GEORGE A. HALL.

CONSERVATION OF THE SLENDER-BILLED CURLEW. By Adam Gretton. International Council for Bird Preservation. Monograph No. 6. (32 Cambridge Road, Girton, Cambridge CB3 0PJ, UK). 1992: x + 1159 pp., 16 black-and-white photos, many graphs., £8.—The Slender-billed Curlew (*Numenius tenuirostris*) like its New World counterpart, the Eskimo Curlew (*N. borealis*), is one of the most threatened bird species in the world. Given the known population decline and the lack of good information about the species, the I.C.B.P. in 1988 launched a two-year project to gather data on population, habitats, and migratory routes. The monograph at hand summarizes the information obtained. It is felt that the maximum number of birds is 1000, but the best estimate is 100–400 birds and the population is not likely to be below 80. The principal cause of this decline is thought to be hunting although habitat destruction is also a factor. The report closes with a country by country recommended “action plan.” An appendix lists the records since 1900 for each country.—GEORGE A. HALL.

PUTTING BIODIVERSITY ON THE MAP. Priority Areas for Global Conservation. By. C. J. Bibby, N. J. Collar, M. J. Crosby, M. F. Heath, Ch. Imboden, T. H. Johnson, A. J. Long, A. J. Stattersfield, and S. J. Thirgood. International Council for Bird Preservation. (32 Cambridge Road, Girton, Cambridge CB3 0PJ, UK). 1992: vi + 90 pp., many colored photos, diagrams and maps. \$23.50).—The ICBP Biodiversity project has produced this attractive summary of world-wide areas of avian endemism. Twenty-five percent of the world's bird species are restricted to just 221 sites which occupy only 5% of the earth's land surface. Ninety-two percent of this land is unprotected. These areas are also areas of endemism for organisms other than birds. Suggestions for priority of action to conserve these areas are also given.—GEORGE A. HALL.

## NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS—1994

The North American Bluebird Society announces the tenth annual grants in aid for ornithological research directed toward cavity-nesting species of North America with emphasis on the genus *Sialia*. Presently three grants of single or multiple awards are awarded and include:

*Bluebird Research Grant:* Available to student, professional or individual researcher for a research project focused on any of the three species of bluebird in the genus *Sialia*.

*General Research Grant:* Available to student, professional or individual researcher for a research project focused on any North American cavity-nesting species.

*Student Research Grant:* Available to full-time college or university students for a research project focused on any North American cavity-nesting species.

Further guidelines and application materials are available upon request from:

Kevin L. Berner  
Research Committee Chairman  
College of Agriculture and Technology  
State University of New York  
Cobleskill, New York 12043

Completed applications must be received by December 1, 1993; funding decisions will be announced by January 15, 1994.