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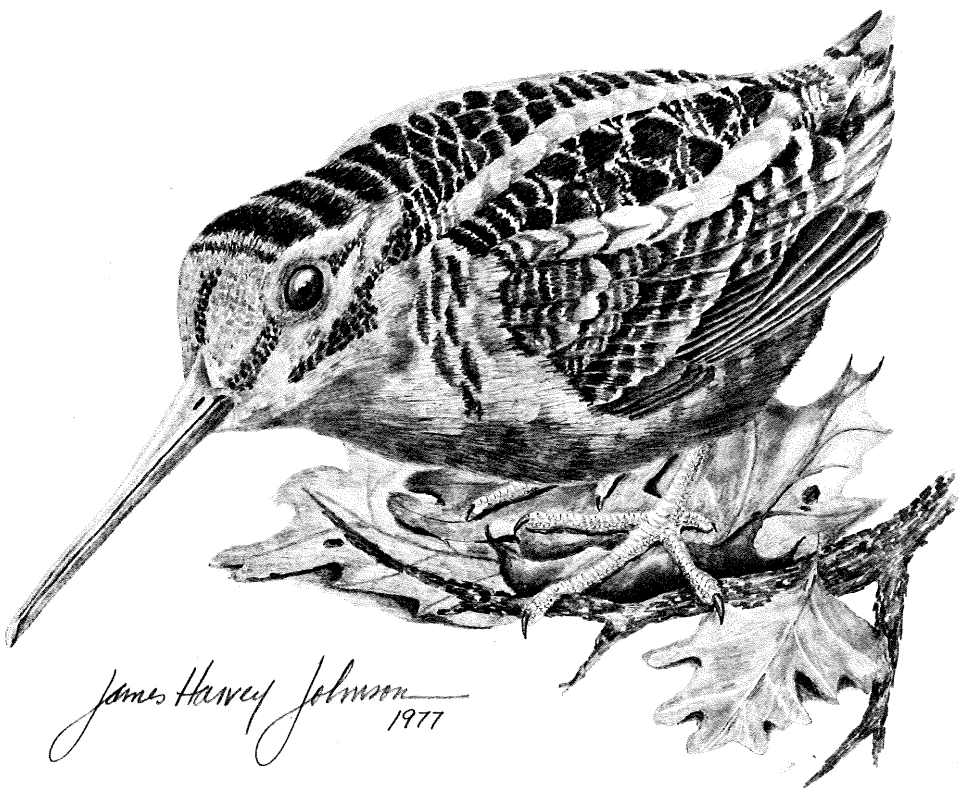
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BULLETIN OF THE

TEXAS ORNITHOLOGICAL SOCIETY

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Contents

Towards a Library on Texas Birds

William J. Graber III, Terry C. Maxwell, Frances Williams, Keith A. Arnold

Just where should the serious student of birds begin in his quest to acquire a useful library on Texas ornithology? The extensive bibliography of Texas birds (Rylander and White 1968, Bull. Texas Ornith. Soc. 7:8–10), with annual updates, provides the professional ornithologist an invaluable resource. But what about the home library for avid *TOS* birders or ornithologists without ready access to extensive library holdings? To this end the editor has chosen to search for recommendations for a basic Texas ornithological library. To be sure, based on the responses I have received, it might take "some doing" to acquire the entire list of works given below. For some, these opinions will provide a goal towards which future book acquisitions and study of Texas birds may be guided. And for some, these opinions will provide confirmation of your discriminating taste and knowledge of Texas ornithology!

The editor has asked William J. Graber III, Terry C. Maxwell, Frances Williams, and Keith A. Arnold to select approximately 15 books (or other significant publications) which would comprise, from their viewpoint, an indispensable ornithological library for Texas birders. These four (brave souls) are well known to the *TOS* membership: Bill Graber, past-president of the *TOS* (1967–1969), practices medicine and resides in Beaumont; Terry Maxwell, an ornithologist from San Angelo, is an instructor in the Biology Department at Angelo State University; Frances Williams, *TOS* vice-president, member *TOS* Bird Records Committee, and regional compiler for American Birds, resides in Midland; and Keith Arnold is chairman *TOS* Bird Records Committee, compiler for Texas Christmas bird counts, and an ornithologist at Texas A&M University.

For those members wishing to procure a library of North American bird books see "Choosing a basic ornithological library" (1976, American Birds 30:1009–1015). In the lists below complete bibliographic citations are given at first mention only.

William J. Graber III

I have attempted to provide a representative list of books on Texas birds for those wishing to acquire a personal library. Although certainly not exhaustive, this list is aimed at the many serious birders who are interested in more than just bird names. The list begins with field guides and bird finding, followed by bird distributions, ornithology as a science and finally, books for the armchair birder.

1. A Field Guide to the Birds of Texas and Adjacent States. Roger T. Peterson. 1960. Houghton-Mifflin Co., Boston.
2. A Field Guide to Mexican Birds. Roger Tory Peterson and Edward L. Chalif. 1973. Houghton-Mifflin Co., Boston.
3. A Birder's Guide to the Rio Grande Valley. James A. Lane. L & P Photography, P.O. Box 19401, Denver, Colorado 80219.
4. A Birder's Guide to the Texas Coast. James A. Lane and John L. Tveten. 1974. L & P Photography, P.O. Box 19401, Denver, Colorado 80219.
5. Check-list of the Birds of Texas. TOS Bird Records Committee. 1974. Texas Ornithological Society.

6. The Bird Life of Texas. H. C. Oberholser (Edited by E. B. Kincaid, Jr.). 1974. Univ. of Texas Press, Austin.
   —sine qua non—
7. Birds of Big Bend National Park and Vicinity. Roland H. Wauer. 1973. Univ. of Texas Press, Austin.
   —Absolutely essential to anyone seriously interested in bird distribution in Texas.—
8. The Birds of Tarrant County. Warren M. Pulich. 1961. Allen Co., Ft. Worth.
9. A Bird Finding and Naturalist's Guide for the Austin, Texas, Area. Edward A. Kutac and S. Christopher Caran. 1976. Oasis Press, Austin.
   —This along with Jim Lane's two books are especially valuable to the new birder, or birder new to Texas.—
10. Life Histories of North American Birds. A. C. Bent. 1919–1968. Reprinted by Dover Publishing Co., New York.
    —Basic natural history on North American birds.—
11. Handbook of North American Birds. Ralph C. Palmer. 3 volumes, 1962, 1976. Yale Univ. Press, New Haven, Conn.
12. Fundamentals of Ornithology. Josselyn Van Tyne and Andrew Berger. 1976. John Wiley & Sons. New York.
    —For those whose interest in birds, Texas or otherwise, extends beyond field identification and bird finding.—
13. The A.O.U. Check-list of North American Birds. Fifth Edition (and supplements). American Ornithologists' Union. 1957. Lord Baltimore Press, Baltimore.
14. Texas Bird Adventures. Herbert W. Brandt. 1938. Bird Research Foundation, Cleveland.
15. A Paradise of Birds; When Spring Comes to Texas. Helen G. Cruickshank. 1968. Dodd, Mead.
    —These last two are for armchair reading about bird watchers watching birds.—

Terry C. Maxwell

Compiling a basic ornithological library on Texas birds is unquestionably more difficult than choosing a list for North America or ornithology in general. There are fewer choices. Despite the vast size and ecological diversity of Texas, relatively few good bird books have been published. Most of what has been written is out of date and hard to find. I have selected my choices without regard to availability; ease of purchase as a criterion would eliminate most of the important works.

Historical Distribution and Ecology

Most of the important works in these disciplines are in the journal literature, and most of the books and monographs are out of print. This list should be augmented with the excellent state bird books for Louisiana, Oklahoma, and New Mexico and the guides to Mexican birds.

1. The Bird Life of Texas. Harry Oberholser and Edgar Kincaid, Jr. et al., Editors. 1974.
   —Indispensable to professional and amateur. Most of the information in the

following works are included in these volumes. The comments on historical change are particularly valuable, but some of the reasons given for change need more support from sound research.—

2. The Birds of Texas: An Annotated Check-list. John K. Strecker, Jr. 1912. Baylor Univ. Bull., Vol. 15, No. 1. Baylor Univ., Waco.
   —Get a Xerox copy from a major library. The first attempt to describe the Texas avifauna.—
3. Principal Game Birds and Mammals of Texas. Anon. 1945. Tex. Game, Fish and Oyster Commission, Austin.
   —Out of print and hard to find. Distribution maps particularly valuable.—
4. Biological Survey of Texas. North American Fauna No. 25, Vernon Bailey. 1905. U.S. Dept. Agri. Wash., D.C.
   —Primarily concerned with vertebrates other than birds, Oberholser's work was to be the companion volume. Useful for the early description of Texas and the application of the Life Zone concept to this state.—
5. The Biotic Provinces of Texas. W. Frank Blair. 1950. Tex. Journ. Sci., Vol. 2, No. 1:93–117.
   —Still available from the editor. The only journal article I include. Valuable for an understanding of the ecological diversity of Texas and the Biotic Province concept.—
6. Birds of the Austin Region. George F. Simmons. 1925. Univ. Tex. Press, Austin.
   —Out of print. Amazing regional coverage.—
7. The Birds of Brewster County, Texas. Josselyn Van Tyne and George M. Sutton. 1937. Misc. Publ. No. 37, Mus. Zool., Univ. Mich., Ann Arbor.
   —Out of print, but easily available from dealers. Excellent early description of Trans-Pecos bird life.—
8. Brief Studies in Texas Bird Life. Anon. 1936. Tex. Game, Fish and Oyster Commission, Austin.
   —Out of print. Of limited technical value, but one of earliest attempts to present Texas bird life to the public. Many of the species write-ups were the work of Roy Quillin, an important figure in Texas ornithology.—

Individual Species Studies in Texas

This list could be very long, but many of the works are published in journals and monograph series. Many remain unpublished as theses and dissertations. I have chosen three that represent a diversity of approaches.

9. Attwater's Prairie Chicken: Its Life History and Management. North American Fauna No. 57. Valgene W. Lehmann. 1941. U.S. Dept. Agri., Wash., D.C.
   —The first comprehensive study of this endangered Texas form.—
10. An ecological analysis of the interbreeding of Crested Titmice in Texas. Keith L. Dixon. 1955. Univ. Cal. Publ. Zool, Vol. 54, No. 3:125–206.
    —A good example of work that leads to taxonomic decisions affecting bird lists, and the work was done in Texas.—
11. The Golden-cheeked Warbler. Warren M. Pulich. 1976. Tex. Parks and Wildlife Dept., Austin.
    —A must for any library on Texas birds.—

General and Light Reading

The following selections include modern regional works, field guides and birding travelogs. Far too little has been published on interesting experiences with Texas birds.

12. A Field Guide to the Birds of Texas and Adjacent States. Roger T. Peterson. 1960.
—Still the best single book for a beginning birder in Texas.—
13. Check-list of the Birds of Texas. TOS Bird Records Committee. 1974.
—A good, quick reference on distribution; brings the Peterson guide up to date.—
14. Birds of Big Bend National Park and Vicinity. Roland H. Wauer. 1973.
—Good section on ecology, as well as birds, of the Big Bend area.—
15. Birds of Tarrant County. Warren M. Pulich. 1961.
—The goal of all local birding groups should be to prepare a book like this and the preceding title for their areas.—
16. Texas Bird Adventures. Herbert Brandt. 1938. Cleveland.
—Out of print. An account of a bird expedition to the Chisos Mountains and the Panhandle. Beautifully written.—

Frances Williams

My selections for a basic ornithological library emphasize bird finding, distributions and the excitement of birding adventures in Texas. These works, most readily attainable, should provide the background and encouragement to "get on" the trail of Texas birds. I have listed my selections in order of importance.

1. The Bird Life of Texas. Harry C. Oberholser and Edgar B. Kincaid, Jr. 1974.
—The only readily available source for detailed plumage descriptions, while the "haunts and habits" paragraphs are a delight to read.—
2. Check-list of the Birds of Texas. TOS Bird Records Committee. 1974.
—The latest information on "what, when and where" of Texas birds. Omits many of the undocumented sight records included in Oberholser, and includes up-to-date terminology largely ignored in that work.—
3. A Field Guide to the Birds of Texas and Adjacent States. Roger Tory Peterson. 1960.
—The birder's bible.—
4. A Field Guide to Mexican Birds. Roger Tory Peterson and E. L. Chalif. 1973.
—Becomes more necessary each year as tropical and sub-tropical birds extend their ranges northward.—
5. The Golden-cheeked Warbler. Warren M. Pulich. 1976.
—All that is known about Texas' own special bird.—
6. A Birder's Guide to the Texas Coast. James A. Lane and John L. Tveten. 1974.
7. A Birder's Guide to the Rio Grande Valley. James A. Lane.
—In this vast State, even the natives need a guide! New edition in preparation.—
8. Birds of Big Bend National Park and Vicinity. Roland H. Wauer. 1973.
—Essential to any Big Bend visitor.—

9. A Bird Finding and Naturalist's Guide for the Austin, Texas, Area. Edward A. Kutac and S. Christopher Caran. 1976.
   —A model regional guide after which others could be patterned.—
10. A Paradise of Birds; When Spring Comes to Texas. Helen Gere Cruickshank. 1968.
    —Many have experienced the joys of birding in Texas, but few have been able to put those emotions into words with the skill of Helen Cruickshank.—
11. Birds in the Wilderness. George M. Sutton. 1936. MacMillan.
    —Youthful bird-watching adventures, many of them in Texas, told by a distinguished raconteur.—
12. Texas Bird Adventures. Herbert W. Brandt. 1938.
    —Interesting account of bird life in north-central Texas and the Big Bend area before the population explosion.—

Keith A. Arnold

This compilation of books and references is based on the assumption that the reader has an interest in Texas birds transcending mere listing, i.e., the interest extends to knowledge on the natural history and distribution of birds of the Lone Star State. I have made no effort to include only those books and references that are readily available. Instead, I assume that the reader's interest is such that he/she will make an effort to procure the references by purchasing out-of-date journals and haunting used book shops in the hope of finding that elusive out-of-print book or monograph. In short, a birder with a serious intent of building a good ornithological library on Texas birds must also be somewhat of a bibliophile.

Distributional

1. The Bird Life of Texas. H. C. Oberholser (E. B. Kincaid, Jr., Editor). 1974.
   —Despite some rather severe shortcomings, this comprehensive work must be included in any library on Texas birds. The historical accounts are especially useful.—
2. Check-list of the Birds of Texas. L. R. Wolfe. 1956. Intelligencer Printing Co., Lancaster, Pa.
   —The first successful attempt to describe distribution of the Texas avifauna using subspecies. It is an historically important work.—
3. Check-list of the Birds of Texas. TOS Bird Records Committee. 1974.
   —This is the most up-to-date listing available. It is intended for revision every five years.—
4. The Birds of Texas. An Annotated Check-list. J. K. Strecker, Jr. 1912. Baylor Univ. Bull. 25:1–69.
   —The first attempt to cover the Texas avifauna, this work will be difficult to obtain.—

Regional

5. The Birds of Culberson County, Texas. V. Biaggi, Jr. 1960. Texas Ornith. Soc. Newsletter, Vol. 8, Nos. 8, 10.
6. Birds of Kerr County, Texas. H. K. Buecher. 1946–47. Trans. Kansas Acad. Sci., 49:357–362.
7. Birds of the Guadalupe Mountain region of Western Texas. T. D. Berleigh

and G. H. Lowery, Jr. 1940. Louisiana State Univ. Mus. Zool. Occas. Paper No. 8:85–151.
—One of the first thorough regional accounts for western Texas.—

8. Birds of the Rio Grande Delta Region. L. I. Davis. 1966. Privately published, Harlingen, Texas.
—A thorough summary of bird records for this tropical portion of Texas.—
9. Birds of Brazos County, Texas. W. B. Davis. 1940. Condor 42:81–85.
—Presents an excellent background for changes in the central part of the state.—
10. Check-list of the Birds of the Central Coast of Texas. C. N. Hager and F. M. Packard. 1952. Privately published.
11. A Bird Finding and Naturalist's Guide for the Austin, Texas, Area. E. A. Kutac and S. C. Caran. 1976.
—A well done and up-dated book that will be useful in many respects.—
12. The Summer Resident Birds of the Sierra Vieja Range in Southwestern Texas. H. W. Phillips and W. A. Thornton. 1949. Texas J. Sci. 1:101–131.
—A nice study on a little-known area.—
13. The Birds of Tarrant County. W. M. Pulich. 1961.
—The only thorough account for the north-central region.—
14. Birds of the Central Panhandle of Texas. J. C. Stevenson. 1942. Condor, 44:108–115.
—Outdated, but important for this area.—
15. Ecological Distribution of the Birds of the Stockton Plateau in Northern Terrell County, Texas. W. A. Thornton. 1951. Texas J. Sci. 3:413–430.
16. The Birds of Brewster County, Texas. J. Van Tyne and G. M. Sutton. 1937.
—An important historical account for the Big Bend area.—
17. Birds of Big Bend National Park and Vicinity. R. H. Wauer. 1963.
—The most important work for the Big Bend Country, with many observations on ecological distributions of birds in west Texas.—
18. Check-list of the Birds of the Upper Texas Coast. S. G. Williams. 1962. Outdoor Nat. Club, Houston.
—Outdated, but the only thorough account for this interesting region.—

Natural History

19. The Life of Birds. J. C. Welty. 1975 (2nd edition). W. B. Saunders Co., Philadelphia.
—A widely used college textbook that is a wealth of information on birds in general. Recommended for learning about the biology of birds in an easy manner.—
20. The Families of Birds. O. L. Austin, Jr. 1971 (paperback). Western Publishing Company, Inc. New York.
—A must for the avid birder and very inexpensive.—
21. Life Histories of North American Birds. A. C. Bent. 1963–1968. (Reprints). 26 Vols.
—A series originally issued as Bulletins of the U.S. National Museum, this is the single most important source of information on the life histories of North American birds; somewhat out-of-date, but a necessity in any serious birder's library.—

Incubation Temperature of a Parasitized Carolina Wren Nest

Brian W. Cain and Richard D. McCuistion

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Luther (1974) states the reported instances of Carolina Wrens (*Thryothorus ludovicianus*) fledging Brown-headed Cowbirds (*Molothrus ater*) are rare because the well-concealed nests and nesting experience of Carolina Wrens appears to reduce cowbird parasitism. Rothstein (1975) in his review of avian-brood parasitism suggests that in general the nests of rejecter species (i.e. those that bury or eject parasite eggs) are found more easily than the nests of accepters (those that incubate parasite eggs). More than 200 bird species are reported to serve as hosts for Brown-headed Cowbirds (Payne 1973). Most parasitized nests (25 of 31) found by Wiens (1963) had only one cowbird egg per nest. A large clutch of parasite and host eggs may reduce the survival of the brood parasite and host young because of insufficient incubation temperature and food supplied by the parent birds. Friedmann (1963) suggested the hosts generally are unable to rear more than one or two young cowbirds.

Incubation temperature of wren nests has not received a lot of attention. Baldwin and Kendeigh (1932) reported the incubation temperature of the House Wren (*Troglodytes aedon*) and Ricklefs and Hainsworth (1969) studied the nest environment of nestling Cactus Wrens (*Campylorhynchus brunneicapillus*). These studies indicate that nest temperatures are affected by the outside air temperature and that an incubating bird can regulate the nest temperature by her activities.

Methods

The pair of Carolina Wrens observed in this report began nest building 1 June 1974 in a hibachi grill located 1.8 m above the floor of a garage in College Station, Texas. The grill was adjacent to a side entrance with a broken glass pane. Laskey (1948) has reported wrens will nest in several unusual structures associated with man's habitation. The nest was apparently completed on 3 June and the wrens were not seen again until 7 June.

Temperatures inside the nest, outside the nest, and outside the garage were recorded with a telethermometer (Cole-Palmer) at dawn, midday and late evening each day. The three thermistors were placed at the same height and the thermistor outside the garage was shielded from the wind and direct sun. The recorded temperatures were averaged each day for the three daytime periods for each of the locations and were usually recorded with the bird in the nest.

Results and Discussion

On each morning of 4 and 5 June 1974 a Brown-headed Cowbird egg was found in the nest. The two cowbird eggs were deposited before the laying of the first two wren eggs which occurred on 6 and 7 June. Carolina Wrens usually lay their eggs before 0630 (Nice and Thomas 1948). The female wren added three more eggs by

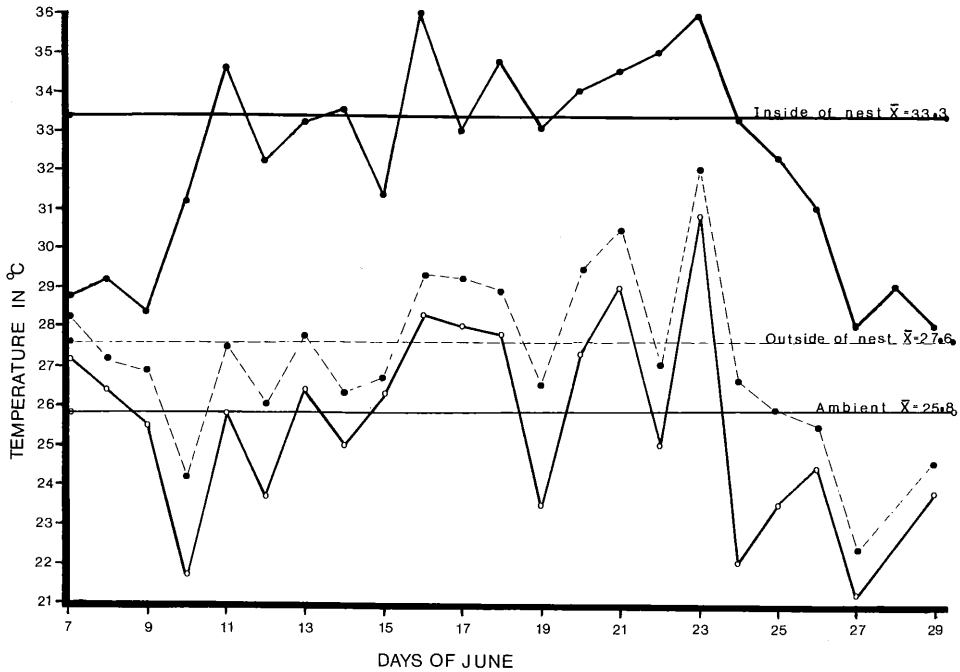

Fig. 1. Temperature profiles and the average temperatures recorded during the incubation of the Carolina Wren nest.

10 June. The last egg was found broken in the nest so it was removed. The incubated clutch thus contained two cowbird eggs and four wren eggs. We feel it is noteworthy that the cowbird deposited her first egg in an empty nest that, for a lack of a visual stimulus by an egg's presence, should signal to a parasitic bird an inactive nest.

The average temperature inside the nest at the egg level with an adult bird in the nest was 33.3°C, the air temperature around the nest averaged 27.6°C, and the temperature outside the garage averaged 25.8°C (Fig. 1). Kendeigh (1961) has shown that a small passerine bird could save up to 13 percent of its energy requirements by roosting in a cavity. The garage in this case no doubt served as a buffer to the ambient temperature around the nest (Fig. 1).

The nest was incubated from 10 June to 24 June. One cowbird chick hatched on 21 June (11 days of incubation) and two wren chicks hatched on 24 June (14 days of incubation). Cowbird eggs are known to hatch with a day or two less incubation than the host's eggs (Welty 1975). Incubation continued after the cowbird egg hatched but stopped after the two wren chicks hatched. The cowbird chick was fed by the nonincubating parent during this interval. Nest temperatures increased slowly during the incubation period. This trend was also reported for the House Wren (Baldwin and Kendeigh 1932). They suggested this increase is a reflection of the metabolic heat generated by the growing embryo in the egg. The nest temperature dropped after the wren chicks hatched (Fig. 1) and the parents began feeding the three young.

The smaller wren chick died 36 hours after hatching and the other wren chick died four days after hatching. The cowbird chick fledged nine days after hatching.

We believe the larger cowbird chick probably received most of the food items brought to the nest and consequently the two wrens starved.

Unhatched eggs were opened on 1 July and the cowbird egg contained a primitive-streak developmental stage embryo. The two wren eggs each contained a well developed dead embryo. High temperature is not considered as the reason for the dead embryos because the nest temperature never reached 41°C which is the temperature that results in 50 percent mortality in House Wren eggs (Baldwin and Kendeigh 1932, Kendeigh 1963). The highest temperature recorded in College Station during this interval was 37°C on 23 June (Climatological Data 1974, Vol. 79:6, Texas).

Death of the embryos may have resulted from reduced nest temperature after the first two wren chicks hatched (24 June, Fig. 1) or the very cold period on 19 June. Baldwin and Kendeigh (1932) reported that lower temperatures can be tolerated by House Wren embryos for up to 16 hours before hatching is significantly affected.

Acknowledgments

We appreciate the nest observations made by June McCuistion in our absence and Drs. John L. Zimmerman, R. Douglas Slack, and Keith A. Arnold for their suggestions to this manuscript. This paper is Contribution No. TA12465 from the Texas Agricultural Experiment Station.

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Kendeigh, S. C. 1961. Energy of birds conserved by roosting in cavities. Wilson Bull. 73:140–147.

———. 1963. Thermodynamics of incubation in the House Wren, *Troglodytes aedon*. Proc. XIII Intern. Ornithol. Congr. 884–904.

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Nice, M. M. & R. H. Thomas. 1948. A nesting of the Carolina Wren. Wilson Bull. 60:139–158.

Payne, R. B. 1973. The breeding season of a parasitic bird, the Brown-headed Cowbird, in central California. Condor 75:80–99.

Ricklefs, R. E. & F. R. Hainsworth. 1969. Temperature regulation in nestling Cactus Wrens: The nest environment. Condor 71:32–37.

Rothstein, S. I. 1975. An experimental and teleonomic investigation of avian brood parasitism. Condor 77:250–271.

Welty, J. C. 1975. *The Life of Birds*. 2nd Edition. W. B. Saunders Co. Philadelphia.

Wiens, J. A. 1963. Aspects of cowbird parasitism in southern Oklahoma. Wilson Bull. 75:130–139.

What's in a Name?

Charles D. Fisher

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Bird-watchers and professional ornithologists share a common problem: what to call a particular bird, i.e. what name to assign to it. To attempt a solution to this problem it is necessary to ask the question "what should a name tell us?" In other words, what kind of information do we want a name to convey? Do we want the name to tell us something about a bird's size, bill shape, skeletal structure, color, song, manner of flight, breeding behavior, sex, age, probable longevity, what kind of nest (if any) it builds, its geographic location, habitat preference, food habits, reproductive isolation, phylogenetic relationships, mutation rate, kinds of genes and gene linkages, blood proteins, or what?

All of the above characters can be ascribed to an individual bird. Because no two individuals are exactly alike (with very rare exceptions), it would be possible to assign a different name to virtually every bird one comes in contact with if a detailed study of a sufficient number of characters could be made. However, usually enough information cannot be gathered from our brief encounters with birds in nature to assign a different name to each individual. Therefore one looks, for convenience, for ways in which individuals can be "lumped" together and a single name can be assigned to all individuals of the group.

Probably the easiest way to group birds would be by sex, classifying each individual as either a male or a female. Apart from the difficulty that in birds this often involves dissection and inspection of the gonads, these two groups would not really tell us very much about a bird, except its role in producing new individuals. It would be possible to pick any other single character, like sex, and set up two or more groups based on this lone criterion. For example, groups could be established on the basis of number of tarsal scales, elongation of feathers on top of the head, origin and insertion of the muscles of the syrinx, number of white (unpigmented) spots in the outer rectrix, or whether the fifth primary was black or not (of course, it could be partly black and partly some other color, in which case subgroups could be recognized on the basis of the total amount of melanin present). It should be obvious that there are virtually an infinite number of characters, each with a variable number of "states" (the maximum number depending only on how finely one is able to discriminate), which can be used for grouping birds together.

At present it is impractical to use all the biological information contained in a bird in its classification (because of the time involved in measuring and quantifying all the characters; computers can analyze voluminous amounts of data in a few seconds). Which criteria should one use? Should characters be chosen arbitrarily, with some system of "weighting," or by picking them at random? Do some features of a bird tell us more about it than do others? (The answer to the last question may well be yes; a complete "map" of the genes of an individual, along with a knowledge of how and when each gene functions, probably conveys all the

information one needs to know, but unfortunately zoologists are still a long way from being able to draw individual genetic maps, and in fact it is not absolutely certain yet exactly what a "gene" is, though its chemical nature is known.)

Ornithologists (and other zoologists) have been assigning "scientific" names to animals since the time of Linnaeus in the 18th century, and even before. Of course, many animals, particularly birds, have been called by "common" names throughout the history of man. These names were an attempt to group together (1) males and females which bred together, and their offspring (however different in appearance these might have been), (2) males which "looked alike," and (3) females which "looked alike." Thus the earliest groupings of birds emphasized two facets of their biology—external appearance and ability to produce new individuals. I think the latter fact is sometimes overlooked. Had emphasis been only on overall similarity in appearance, then many females would have been given different names from those of the males they mated with (and initially such "mistakes" did occasionally happen). However, the ability of a male and female to mate and produce offspring was given more "weight" in assigning names than was external appearance. Females which bred with male "wood ducks," for instance, were called "wood ducks," even though they *looked* much more like female "mandarin ducks." Such groups of interbreeding males and females were called "species," as they are today. When one talks about different "kinds" of birds he is usually talking about species, though not always.

The majority of avian species were assigned a scientific name 50–200 years ago, at the time of their first published description. This name, which is italicized in publications, consists first of a generic name (capitalized) and secondly of a specific name (not capitalized), both taken from Latin or with Latin endings. It is therefore a "binomial," and it conveys more information than simply what species an individual belongs to. If a bird has been correctly named it also shows what other species the individual is most closely related to phylogenetically (i.e. in an evolutionary sense). For instance, all the species in *Dendroica* (e.g. Yellow Warbler, Magnolia Warbler, and Yellow-rumped Warbler) presumably shared a common ancestor more recently with each other than they did with any species in the genus *Vermivora* (e.g. Tennessee Warbler, Orange-crowned Warbler, and Nashville Warbler). Of course, zoologists don't know what are the actual phylogenetic relationships of most species since complete fossil records are almost always lacking. Judgements as to the evolutionary history of a group of birds must therefore be based, once again, on the overall similarity of characters which can be measured.

It is assumed that if two species resemble each other more closely than either resembles a third species (in morphology, physiology, ecology, behavior, or some other aspect of their biology), then the first two species are probably more closely related phylogenetically to each other than either is to the third species. Although this assumption is probably correct in a majority of cases, there are, nevertheless a number of situations (such as "parallelism" and "convergence") where close overall similarity does not reflect close phylogeny. This is because selective pressures in the same general kind of environment in different parts of a continent, or the world, may result in similar adaptations, and thus similar general appearance, of birds which are not necessarily closely related phylogenetically. Zoologists are

therefore divided into two schools of thought when it comes to naming animals, the "phenetic" (where emphasis is placed on appearance) and the "phylogenetic" (where the stress is on evolutionary history). In spite of the difficulties involved, it is probable that a majority of classification systems based on measurable characters do in fact reflect with reasonable accuracy evolutionary relationships.

Just prior to the middle of the 20th century, Huxley, Mayr, and several other biologists published their "biological species concept." This stated that species are *populations* of animals (or plants) that are *reproductively isolated* in nature from other populations. Within a species there is interbreeding between individuals. The idea of reproductive isolation (i.e. inability to produce offspring) was not really new, but the emphasis on "populations" of individuals, rather than on individuals themselves, had not previously been stressed. The impact on biology was considerable. Taxonomists shifted to measuring intra- and inter-population variances of characters, population geneticists stressed the gene pool, mutation rates, and gene frequencies within populations, and evolutionary biologists began asking *why* changes took place in populations, how fast changes occurred, and, more significantly, what were the factors responsible for acquisition of reproductive isolation between populations.

Although theoretically the idea of a species had changed, the application of the new concept to natural populations proved difficult. This was because many similar "species" in nature, during the breeding season at least, are allopatric, i.e. they do not overlap in geographic range. Since the biological species concept stresses what happens in nature rather than in the laboratory, there is no way in which geographically isolated populations can be studied to determine their degree of reproductive isolation. Furthermore, since reproductive isolation between populations is not an all or none phenomenon, but is a continuum, extending on one end from no barriers to gene exchange to a complete lack of interfertility on the other end, it is sometimes (not very often) difficult to ascertain the specific status of sympatric populations (those whose geographic ranges are adjacent or overlapping). This is not surprising since the inability to mate and produce offspring is a product of evolution (i.e. gradual population changes over a period of time). We can expect, therefore, to find populations in all stages of reproductive isolation. This has led Ehrlich (1961, *Systematic Zoology* 10:167–176) to suggest that the ability of populations to exchange genes may no longer be a useful criterion for the assignment of names at the species level.

If the idea of reproductive isolation between populations is discarded as the sole basis for defining species, what alternatives are there? Taxonomists would have to rely, as before, on "overall resemblance." Except that now there are many more characters available—morphological, physiological, embryological, behavioral, ecological, genetic, and others. Furthermore, "numerical taxonomy" enables a systematic zoologist to objectively measure and analyze many characters at once (with the aid of a computer), and to describe quantitatively the differences between populations. However, even with vast amounts of quantitative data, the problem of assigning species names to populations is still frequently an arbitrary decision, and is left up to the judgement of the investigator. The situation is complicated by the well-known fact that the amount of morphological differentiation between populations is often not closely correlated with the degree of repro-

ductive isolation (man is an excellent example). Thus, interbreeding populations of the same species may be more distinct in appearance than populations belonging to different species.

In the above discussion I have purposely ignored the many difficulties encountered in trying to subdivide species into "subspecies" (and of assigning a "trinomial" to them), but the problems are frequently of a similar nature. By definition, subspecies are "distinct" populations of a species inhabiting a prescribed part of the total range of the species. Geographic variation in a species results from different selective pressures in different parts of the overall range. This variation may be gradual (i.e. clinal) over long geographic distances, or it may be fairly abrupt. In the former situation, at least, I know of no objective way of drawing boundaries between adjacent populations, and therefore of assigning meaningful subspecies names.

With enough study and with a large enough sample size there are hardly any two populations of a species which cannot be found to differ significantly (in a statistical sense) in at least one character. Should these populations be named? Even in the field a person thoroughly familiar with a local population can almost always travel a relatively short distance (200–300 km) and discover differences in a population of the same species. Should he call each population by a different name?

In his insatiable appetite for organization man finds it necessary, and convenient, to classify and categorize the animals around him. Small groups are placed into larger and larger groups (families, orders, classes, etc.), until all the animals are placed in a single "kingdom," and all the plants in another kingdom (some biologists recognize more than 2 kingdoms). Yet it is the "species" that has attracted the most attention. In the biological hierarchy it is the only level for which an objective definition has been attempted. There seems to be little doubt about the prominent role of the species in biological evolution, and the significance of the ability to exchange genes between individuals of a population.

Many members of the *Texas Ornithological Society* are concerned with the changing status of bird names. So are many zoologists (it seems to be a part of man's basic biology to wish for stability, even though most of the world around him is forever changing). However, in spite of all attempts by the International Rules Committee on Zoological Nomenclature to stabilize names of animals, changes are occuring today at a faster rate than ever. In a majority of cases these new names probably convey more accurate information than did the old ones, and are therefore of value. This is true of most of the many changes in the names of birds. Scientific knowledge, fortunately, is not standing still, and as new knowledge is gained it becomes necessary to make revisions. Thus the AOU Checklist Committee is continually revising the Checklist of North American Birds, much to the chagrin of many bird-watchers as well as professional ornithologists.

In conclusion, I hope that I have pointed out some of the problems involved in assigning names to birds, and that I have caused readers of the *Bulletin of the Texas Ornithological Society* to consider what kind of information a name should convey. I believe that the concept of species as groups of individuals which are capable of exchanging genes is important, and should be utilized whenever possible. This, of course, is the current policy of most ornithological organizations and societies, including the *TOS*.

GENERAL NOTES

Unusual Feeding Behavior of a Male Purple Martin

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Male Purple Martins (*Progne subis*) have never been recorded feeding their mates (see particularly Allen and Nice 1952, Amer. Midl. Nat. 47:606–665; and Johnston and Hardy 1962, Wilson Bull. 74:243–262), nor have Purple Martins ever been noted feeding House Sparrows (*Passer domesticus*) (op. cit.). I had never observed either of these occurrences in 9 years of studying martins until May and June 1976.

On 31 May 1976 while photographing martins in my backyard colony of 35 martin pairs within the city of Sherman (Grayson County), Texas, I observed a subadult male martin repeatedly feed his presumably-subadult mate that was incubating 5 eggs. During a 1-hour period, I saw the male bring and feed insects to the female 10 times. Usually she accepted the food from him while sitting in the entrance hole of the nest. Occasionally he entered the nesting compartment and fed her while she sat on the eggs. Often after he fed her, she flew away, presumably to feed, and he then guarded the nest.

On 1 June 1976 the female often "begged" for food from the male in characteristic fledgling fashion (Fig. 1). On several occasions she perched on the porch of the martin house and fluttered her wings as the male continued to feed her. He arrived with food quite often, and many times the female emerged from the nest, accepted the food, then settled back down on the eggs. On 5 occasions the male arrived with food while the female was away. Each time he waited at the martin house and fed her upon her return. I saw this male feed his mate many times daily from 31 May until 12 June when the clutch was destroyed by House Sparrows.

On 9 June 1976 I observed a near-fledged juvenal House Sparrow sitting in the previously described martins' nesting hole. I presume this young sparrow was from an adjacent House Sparrow's nest. This was the first time I had ever seen a young sparrow in a martin's nest. The male martin often arrived at the entrance and fed the young sparrow as the sparrow sat there. The sparrow always opened its mouth whenever it saw the martin appear but never fluttered its wings. The female martin usually entered the nest by pushing the sparrow aside. She sat on the eggs while the young sparrow sat in the nest with her. During 9–10 June while the sparrow was in the nest, it took virtually all of the male martin's food loads since the young sparrow was usually sitting in the entrance. The male martin fed the sparrow readily. When the young sparrow flew from the nest on 10 June, the male martin resumed feeding the female martin.

This male martin probably began feeding the female before 31 May, and it is interesting that when I first observed this occurrence, the female accepted food from the male with little show of activity. But as he continued to feed her daily, she soon began begging for food every time he appeared, and she was often aggressive in her begging actions. Evidently parental feeding in this male developed earlier than normal, and his mate and the young House Sparrow were recipients for his feeding activity.

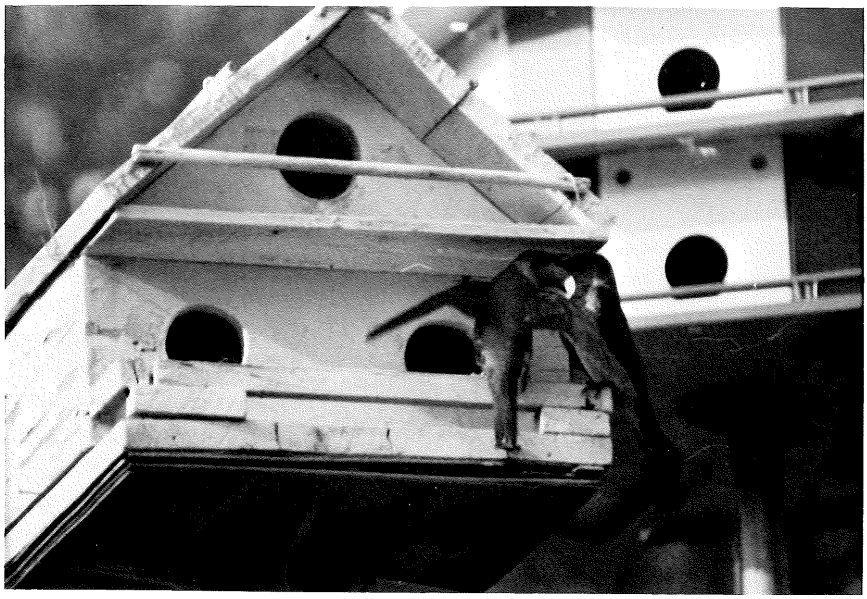

Fig. 1. Female Purple Martin begs for food from mate.

COLONIAL WATERBIRD GROUP.—The Colonial Waterbird Group (CWG) was officially formed at the North American Wading Bird Conference at Charleston, South Carolina, 16 October 1976. The CWG is a loosely structured organization, flexible enough to evolve through changing interests and needs of the membership. Its purpose is to establish better communication and coordination between people that are studying colonial waterbirds, and to facilitate the protection and management of stressed populations or habitats. The CWG, therefore, has set the following immediate goals: (1) encourage and coordinate standardized surveys of colonial waterbirds, (2) publish a newsletter, (3) assist efforts by conservationists related to protection and management of colonial waterbirds and their ecosystems, and (4) act as a clearinghouse of information for ongoing research and research opportunities.

Dues for 1977 were set at $5.00 to provide funds for a biannual newsletter and to assist in preparation for a proposed meeting in 1977. If you are interested in joining the Colonial Waterbird Group, please send your 1977 dues to Dr. Joanna Burger, Department of Biology, Livingston-Rutgers University, New Brunswick, New Jersey 08903. The reporter for Texas, Arizona, New Mexico and Oklahoma is Kirke A. King, U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center, Gulf Coast Field Station, P.O. Box 2506, Victoria, Texas 77901.

County Nesting Records for Caprimulgids in South and Central Texas

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During the past 2 years I have accumulated the following evidence of nesting records for 3 species of caprimulgids. These are difficult birds to locate during nesting and our knowledge of nesting distributions for this family in Texas is scant.

Poor-will (*Phalaenoptilus nuttallii*): James R. Dixon photographed a nest with 2 eggs on the Trevino Ranch, approximately 35 miles NW of Laredo, Webb County in June, 1974 (Fig. 1). According to Oberholser (1974, *The Bird Life of Texas*, Univ. Texas Press, Austin) there is one nesting record for South Texas, a sighting in Brooks County. Summer records are listed for other counties in South Texas, but not for Webb County.

The only other caprimulgid that breeds in Texas and lays unmarked eggs is the Whip-poor-will (*Caprimulgus vociferus*). However, the nearest nesting record for that species is in West Texas (Oberholser op. cit.).

Paraque (*Nyctidromus albicollis*): James R. Dixon photographed a nest with one young and a pipping egg (Fig. 2) in June, 1974 at a location 10 miles N of Freer, Duval County. This represents a new record on the western margin of the breeding area for this species in Texas; no previous summer records are known for that county (Oberholser op. cit.). However, breeding records are given for McMullen and Live Oak counties to the north, and Brooks County to the south.

Lesser Nighthawk (*Chordeiles acutipennis*): A roadkill juvenal male was salvaged by David Sierra on 28 July 1975 near the Travis-Hays county line in Hays County (No. 9946 in the Texas Cooperative Wildlife Collections). The remiges are still partially ensheathed, indicating a rather recent fledging time. The closest nesting record is for Bexar County. No previous summer records are listed for either Hays or Travis counties (Oberholser op. cit.). Obviously, one cannot be certain that the bird was raised in either Hays or Travis counties, but it is most likely.

Fig. 1. Poor-will nest with 2 eggs, Webb County.

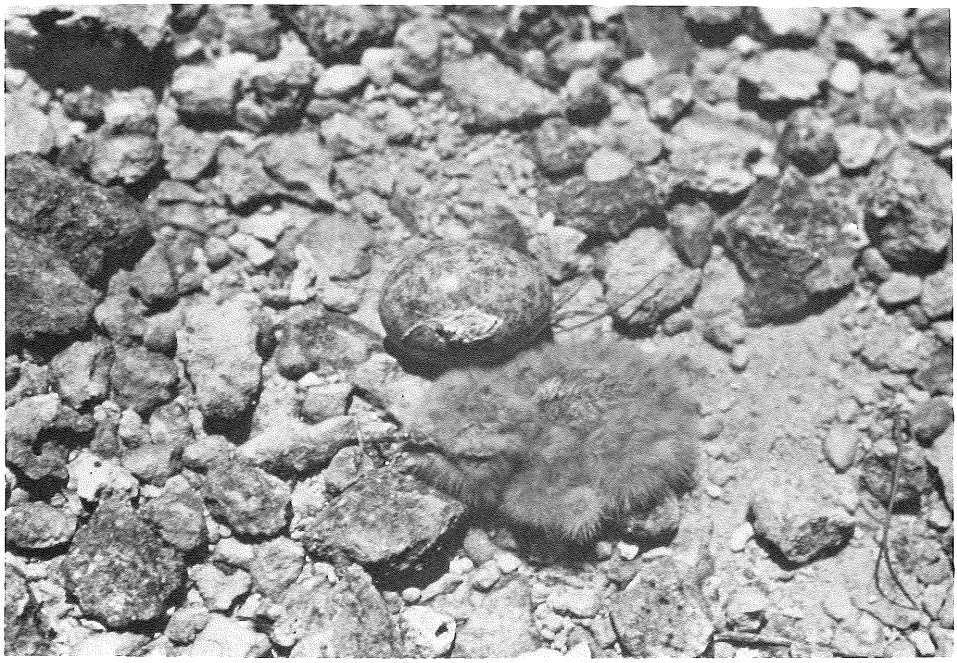

Fig. 2. Recently hatched chick and pipping egg in Paraque nest, Duval County.

Occurrence of Black-chinned Hummingbird in Northwest Texas in Winter

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A Black-chinned Hummingbird (*Archilochus alexandri*) regularly visited a hummingbird feeder in Lubbock (home of Mr. and Mrs. Max Addison) 5–16 January 1977. The feeder had not been emptied after fall migration and apparently attracted the hummingbird because it was under a shelter on the south side of the house and was protected from the several inches of snow that had accumulated on the ground during the week. On most days the bird visited the feeder only occasionally, but on January 9 it remained at or around the feeder most of the day, during which its activities (feeding, flying, resting) appeared to be in every way typical of this species during spring and summer, even though the temperature was −15°C and there were several inches of snow on the ground. If the bird had been in the area since fall, it may have survived on account of a few feeders in the area which had been left filled with sugar water. Lubbock had below average temperatures and above average snowfall in November and December of 1976.

Photographs taken of the bird were not diagnostic, but several other observers and I got excellent views of the hummingbird when it frequently perched for as long as 5 min on a woodpile less than three feet from an observation window. It was identified as a first winter male because of its incompletely colored throat that showed, in bright sunlight, a metallic purplish spot. This reduced but unmistakable throat coloration distinguished it from the Ruby-throated Hummingbird (*Archilochus colubris*) which shows red on the throat at the same stage of development. The plumage agreed exactly with the description of the first winter male plumage of the Black-chinned Hummingbird in Oberholser (1974, *The Bird Life of Texas*, Univ. Texas Press, Austin).

Winter records for this species are not listed for northwest Texas by Oberholser (op. cit.) nor for Oklahoma by Sutton (1967, *Oklahoma Birds*, Univ. Okla. Press, Norman) or New Mexico by Ligon (1961, *New Mexico Birds and Where to Find Them*, Univ. New Mex. Press, Albuquerque). The nearest winter records for hummingbirds appear to be sight records of a Black-chinned Hummingbird in Amarillo on 5 January 1975 (Am. Birds 29:709); two Rufous Hummingbirds (*Selasphorus rufus*) which "wintered" at Midland in 1974–1975 (*ibid*); and an Anna's Hummingbird (*Calypte anna*) on the 1968 Christmas Count in Sheffield, approximately 200 miles south of Lubbock (*TOS* Bird Records Committee 1974, *Check-list of the Birds of Texas*, Texas Ornithological Society).

Breeding Status of the Least Bittern in the Western Plains of Texas

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Sightings of the Least Bittern (*Ixobrychus exilis*) in the Southern Great Plains have increased in recent years (Williams 1976), but the frequency of breeding of this secretive heron in the plains remains uncertain (Rapp et al. 1958, Palmer 1962, Oberholser 1974, Tex. Panhandle Aud. Soc. 1976).

Although this heron has disappeared as a breeder from some localities in New Mexico (Ligon 1961), due to marsh drainage, it still breeds in much of that state (Ligon 1961, Alden and Mills 1974) and Oklahoma (Sutton 1967, Williams 1975).

Published accounts suggest a decline as a nesting species over much of inland Texas. Strecker (1912) believed it to be a summer resident of "the entire state, breeding from the northern boundary south to Brownsville." Oberholser (1974) suggested that it no longer nests in much of its former western-inland range. A review of checklists from western Texas: Potter-Randall counties and Lake Meredith Recreation Area (Tex. Panhandle Aud. Soc. 1966 and 1976), Lubbock County (Lubbock Aud. Soc. 1973), Tom Green and Schleicher counties (Maxwell and Wiedenfeld 1972), Midland County (Williams 1967), Big Bend National Park (Wauer 1973) and El Paso County (Hunt and White 1973), indicates that the Least Bittern is absent from much of western Texas but remains as a probable breeder in some localities (Big Bend National Park, Tom Green County, and Lake Meredith). Hamilton (1962) reported Least Bitterns as summer residents in marshes in the mesquite plains (most of his work was in the vicinity of Abilene, Taylor County). Kenneth Seyffert (pers. comm.) and others observed three Least Bitterns in cattail (*Typha* sp.) marsh below the dam at Lake Meredith, Hutchinson County between 15 June and 13 July 1975 (Williams 1975). Nesting was not confirmed.

Maxwell secured a specimen of a juvenal Least Bittern (TCWC 10150, Texas A&M University) on 1 August 1976 in a cattail-rush (*Scirpus* sp.) marsh 4 miles south of San Angelo, Tom Green County. This marsh is approximately 2 acres in size. The specimen, although subadult, is probably referable to the eastern race, *I. e. exilis*. Two Least Bitterns and a nest with 4 eggs were found in a small rush marsh (less than 1 acre) at Lake Nasworthy, 2 miles south of San Angelo on 1 May 1977.

Apparently Least Bitterns remain as irregular and widely dispersed nesters in the western plains. Two reasons probably account for the recent increase in reports of this heron. First, there may be recently increased habitat available for nesting. Natural cattail and rush marshes are relatively rare and local in western Texas. It is doubtful that this bittern was ever more than a sporadic breeder here, at the western periphery of its distribution. Numerous reservoirs have been constructed here, however, in the twentieth century. Below dams and where lakes and ponds are maintained at constant water levels, marshes commonly develop. These unnatural impoundments are known to be important bittern habitats in

Oklahoma (Sutton 1967) and are known to have altered some bird species distributions in the arid Southwest (Witzeman et al. 1975).

Secondly, Least Bitterns are secretive and difficult to detect. They have probably escaped detection in many localities for years, and increased expertise of observers is resulting in more reports (Williams 1976). More observers need to wade into shallow waters and examine patches of cattail marsh. Bent (1926) pointed out that the smallest patch of marsh is often sufficient habitat for the Least Bittern.

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Blue Jay with Crossed Mandibles

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Birds with deformed bills are rare in the wild (Pomeroy 1962, Threlfall 1968, Smith and Diem 1971). However, these atypical structures have prompted many reports in the literature (see summary by Pomeroy 1962). One of the most commonly reported abnormalities, crossed mandibles, has been documented in the United States for such diverse species as the Little Blue Heron (*Florida caerulea*) (Hanebrink and Beadles 1971), Common Raven (*Corvus corax*) (Ouellet 1971), American Robin (*Turdus migratorius*) (Hodges 1952), and Red-winged Blackbird (*Agelaius phoeniceus*) (Morton 1963). Typically, the upper mandible is decurved to one side, the lower mandible often upcurved, with the two crossing (usually toward the tip) without significant elongation (Pomeroy op. cit.:54).

Nickell (1965:398) discussed the adaptive behavior of a Blue Jay (*Cyanocitta cristata*) in Michigan with only about 13 mm of its lower mandible remaining. However, crossed mandibles have apparently never before been reported in this species.

On 4 December 1974, F. Simpson and R. M. Kemper caught an adult Blue Jay with crossed mandibles at Fort Sill, Comanche County, southwestern Oklahoma. The bird was observed as it stood on the ground among four or five other Blue Jays. When the others flushed, this individual flew away low to the ground for a short distance and landed. Simpson caught it and discovered its abnormally-shaped mandibles. When released it flew as before for about 15 m but gradually lost altitude, striking an elevated ridge and dying of a possible broken neck. Unfortunately, this bird's feeding behavior was not observed.

The specimen's upper mandible curved immediately at its base to the left and down over the lower mandible, rotated slightly counterclockwise toward the tip until its inner distal surface faced medially (Fig. 1). The exposed culmen measured 20 mm, and along its curvature 31 mm. The sex of the specimen could not be determined. Culmens of five full-size females in the University of Oklahoma Museum of Zoology averaged 19.7 mm and those of five males, 21.7 mm, indicating that our specimen was probably a female. The lower mandible, although straight, tilted about 45° below horizontal on its left side, probably due to pressure from the upper mandible as it grew downward.

The weight of the specimen was 65.7 g compared to an average 95.3 g for 11 fully-feathered males and 88.9 g for 15 females in the University of Oklahoma collection, indicating either gradual starvation or failure of the bird to attain normal size because of its difficulty in feeding. Its plumage appeared to be worn about normally for late fall. It was heavily infested with lice, especially in the abdominal region. This seems to be a common occurrence in birds unable to preen normally (Ash 1960, Boyd 1951, Worth 1940). Standard measurements in millimeters were: total length 259; wing 133; tail 122; and tarsus 43; these are average for adult females.

Several X-ray photographs were made of the skull (Fig. 2). The underlying bony structure of the mandibles appeared to be of about normal length and no scar was apparent. The rhamphotheca did not seem to be excessively elongated. Even so, the bill may have grown cross-wise after a particularly traumatic accident of some kind. Other less likely explanations include inducement by a chemical pollutant (see Ash 1958), nutritional deficiency, or genetic causes. The specimen is no. 528 in the Cameron University Museum of Zoology, Lawton, Oklahoma.

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Fig. 1. Blue Jay showing crossed mandibles.

Fig. 2. X-ray of Blue Jay skull.

NOTES AND NEWS

ABOUT THE ARTIST.—The drawing of the American Woodcock (inside front cover) is by James Harvey Johnson of Bryan, Texas. James' interpretation of a Carolina Chickadee was featured on the front cover of the December 1976 *Bulletin*. James' wildlife vignettes reflect his deep understanding of his subjects gained as a wildlife photographer, sportsman and veterinarian. He and his wife, Jocille, reside at 1908 Carter Creek Parkway, Bryan, Texas 77801.

ERRATA.—Steve West, author of "First Presidio County and Texas Winter Record of the Olivaceous Flycatcher" in the December *Bulletin of the Texas Ornithological Society* (1976, 9:8) has pointed out an unfortunate editorial error in his note. The next to last paragraph should read: Armistead was not previously familiar with the species; West had observed the Olivaceous Flycatcher in Arizona, Mexico and during a three-year period in the Canal Zone and Panama.

REQUEST FOR INFORMATION.—Needed: Egg date records for Purple Martins (*Progne subis*). Please send date on which each martin pair at colony laid its 1st egg. Age of each pair (adult or subadult) if known and yearly total of martin young raised at colony also would be helpful. If dates represent 2nd nesting attempts or 2nd broods, please indicate. Records for as many years as possible are needed. Each contribution will be acknowledged.—Charles R. Brown, 2601 Turtle Creek Drive, Sherman, Texas 75090.

SUGGESTIONS TO AUTHORS

The *Bulletin of the Texas Ornithological Society* publishes articles and notes on original ornithological research or observations. Articles and notes dealing with Texas birds are preferred. General articles on topics of interest to *TOS* members are also welcomed.

All manuscripts should be submitted in duplicate to the editor. Each manuscript will be read by one or more reviewers who will provide the editor advice on the article's acceptability and accuracy.

Manuscripts, including tables, should be typewritten and double-spaced on one side of 8½ × 11 inch paper. Submitted articles, notes and reviews should follow the format observed in this and subsequent issues of the *Bulletin of the Texas Ornithological Society*. Feature articles should include a "literature cited" section. Shorter articles and notes, with five cited works or less, should use parenthetical citations, e.g. (Oberholser 1974, *The Bird Life of Texas*, Univ. Texas Press, Austin).

Scientific and common names of North American birds should follow the 1957 A.O.U. Check-list and supplements. The 24-hour clock (0730), the continental dating convention (2 October 1976) and the metric system should be used.

Proofs of articles and notes will be sent to authors for review and correction. Immediate return of proofs is necessary. Reprints of articles, notes and reviews may be ordered on forms sent with proofs.

TEXAS ORNITHOLOGICAL SOCIETY

Dedicated to the observation, study and conservation of birds in Texas

Founded 1953

The *Bulletin* and *Newsletter* of the *Texas Ornithological Society* are issued to all members not in arrears for dues. Membership in the *Texas Ornithological Society* is open to all persons interested in observation, study, and conservation of birds in Texas. Membership dues are $3.00 per year (student), $5.00 per year (active), $10.00 per year (sustaining), $100.00 paid once, or in $25.00 annual payments over a period not to exceed four years (life). Inquiries regarding membership should be addressed to Ms. Elaine Robinson at *TOS*, P.O. Box 19581, Houston, Texas 77024. Original articles, reports and other items submitted for inclusion in the *Bulletin of the Texas Ornithological Society* should be sent to the editor, R. Douglas Slack, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843.

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Roadrunner from the Panhandle. Photograph by George W. Jury.