# SPECIALIST GROUP ON STORKS, IBISES AND SPOONBILLS

**NEWSLETTER** 

Volume 1, Number 1

August, 1988

#### LETTER FROM THE CHAIRMAN

Communication from me has been painfully absent over the past 18 months. While still working in Germany, I became extensively involved in project administration with the Brehm Fund. Even though I was involved in stork-ibis activities, I did not share these activities with members of the Group. Please accept my apologies for this silence.

In October of 1987, I left Germany and began working for ICBP in December, as their Pan American officer. Needless to say, this position has kept me more than busy, and again I have neglected the Specialist Group. For this reason I am delighted that Dr. Malcolm Coulter and Larry Bryan of the Savannah River Ecology Laboratory have offered to publish this newsletter for the ICBP-SIS Group.

I have been meaning to write and circulate a newsletter to Group members for some time, but have been distracted from this original intention. At long last, this idea has materialized, and I am happy to introduce the first newsletter of the Group. We hope to be able to produce two per year, to keep all of you informed as to what is happening with the other members, who is working on what, and

information about species research and conservation needs.

The storks, ibises and spoonbill Group has very definitely received much greater attention in recent years. I am hearing more and more about research and conservation activities being focused on these species. A number of workshops have been held featuring these waterbirds, including the October, 1986, international symposium on the Ecology and Conservation of Storks (Charleston, South Carolina), the May, 1987, Workshop on the Conservation the Oriental White Stork, Ciconia boyciana (Qiqihar, China), and the March, 1988, Workshop on the Conservation of the Scarlet Ibis (Caracas, Venezuela). In the meantime a number of us have been cooperating on preparing the bibliography for the Storks, Ibises and Spoonbills: the first draft has been printed and circulated for revision and additions, courtesy of the Savannah River Ecology Laboratory. Another exciting initiative is the Storks, Ibises and Spoonbills of the World a book prepared by James Kushlan and James Hancock, with full-color paintings of each species. The paintings are being sponsored by the Vogelpark Walsrode, West Germany.

Through the efforts of the Specialist Group, it has come to our attention that certain species, particularly in the stork family, are facing increasing threats in numerous parts of the the world. Please refer to my summary of the status of storks, printed in the Journal of Colonial Waterbirds (Volume 10, Number 2). I enclose herewith a reprint of this article.

I am particularly concerned for storks in South and Southeast Asia; you will see in my article (1987. Status and Conservation Priorities for the World's Stork Species. Colonial Waterbirds 10:181-202) that most Asian storks are threatened, and it might be that the Greater Adjutant (Leptoptilos dubius) is endangered. The Milky Stork (Mycteria cinerea), Lesser Adjutant (L. javanicus) and Oriental White Stork are If you have new vulnerable. information on any of these species, please send this to us. Furthermore, we like to alert Asian conservationists and ornithologists to this grave situation, and we hope that you will in turn make an effort for the conservations of these species.

In order for a Newsletter to be effective, it requires the input from members. Please respond to this plea to provide any information about what you are doing regarding research and conservation with these birds. I hope you will find this Newsletter useful, and I look forward to hearing form you with updates or current information you can provide.

With Warm Regards,

Charlie (Charlie) S. Luthin Chairman

#### LETTER FROM THE EDITORS

Charlie Luthin, as Chairman of the ICBP Specialist Group on Storks, Ibises and Spoonbills, has done a great job in bringing together current knowledge of Storks, Ibises and Spoonbills, and and in working for their conservation. As a

basis for this he has worked hard to establish a much-needed communication network among researchers and conservationists around the world. We have offered to assist in promoting communication among the group by providing this newsletter twice a year.

This newsletter, of course, belongs to the entire ICBP-SIS group, and is a product of the group. In order to provide full and timely communication among Stork, Ibis and Spoonbill researchers, YOU must communicate with us. Please fill out the enclosed questionnaires. Just as important, please let us know of any recent developments that should be included in the next issue, or critical conservation issues affecting these species. Also, please let us know of others whom you think should receive the newsletter. This is very much your newsletter. We look forward to hearing from each and every one of you.

Malcolm C. Coulter and A. Larry Bryan, Jr.

Savannah River Ecology Laboratory Drawer E Aiken, South Carolina 29802 U.S.A.

### ACTION PLAN FOR STORKS, IBISES AND SPOONBILLS

The ICBP Specialist Groups (of which there are currently fourteen) are also members of the IUCN Species Survival commission. the Commission is made up of all Specialist Groups, from plants, marine invertebrates, butterflies, to elephants, rhinoceroses, and primates. During the last two World Conferences of IUCN (1985, Madrid, Spain and 1988, San Juan, Costa Rica), the Chairman of SSC called upon the Specialist Groups to prepare action plans for the taxa within their respective groups. These action

plans should clearly identify the research / conservation priorities for the species and regions throughout the world. A number of action plans have been prepared by other SSC Groups, noteworthy among these being two Primate Plans and an Action Plan for Ungulates. Several of the ICBP Specialist Groups are presently preparing Action Plans for their Groups, including cranes, pheasants, and cracids. The Parrot Specialist Group will meet in October (Curitiba, Brazil) to begin preparing species action priorities.

Whereas several years ago we did not have enough information on the status of the various storks, ibises and spoonbills to prepare species or regional action plans, today we have enough information to get a good start on this exercise in prioritizing conservation needs for these species. I would like to ask the assistance of all active researchers and conservationists to participate in an effort to develop stork, ibis and spoonbill action plans. Since the critical conservation needs are in Asia, this is the best place to begin.

If each member of the Specialist Group begins now to accumulate information on the species of storks, ibises and spoonbills in you area, including status recent population trends (i.e. decreasing, stable or increasing), certain and potential threats, and the condition of habitats for these species, by the time of the next newsletter we can formally request information and species action plans from each of you. This important undertaking can only be successful if we have the participation and cooperation of each of you. I hope you will join us with this effort to prioritize conservation needs for these ciconiiform species.

C. Luthin Chairman

#### REQUEST FOR INFORMATION

During October, 1988, Ron Johnson, Curator of Birds at the Miami Metro Zoo (Miami, Florida) and Charles Luthin will present a paper on storks in the wild and in captivity. They are seeking any recent information on storks, including an update on the status of species throughout the world), and any information on breeding of storks in captivity, including care maintenance. By filling in the enclosed Species Status Report on storks in your country, and sending a copy to Charlie Luthin (P.O. Box 1369, Melrose, Florida 32666 USA), you will be contributing to an important paper being presented to a wide audience. You will be acknowledged for your information. Any information on storks in captivity can be sent to Ron Johnson (10540 S.W. 160 Street, Miami, Florida 33157 USA). Thank you for your prompt attention to this request.

#### !! ACTION ALERT !!

#### **ATTENTION: ASIAN SIS CONTACTS!**

The status of the Greater Adjutant Stork (Leptoptilos dubius) is, surprisingly, largely unknown. This species formerly occurred widely in southeast Asia: northern India, Nepal, Bangladesh, Burma, Thailand, Kampuchea (Cambodia), and southern Vietnam. Charlie Luthin reports in his recent article, Status of and Conservation Priorities for the World's Stork Species (Colonial Waterbirds 10,2:181-202), that the species has almost disappeared from its former range. The large colonies formerly in Burma have often been described as the stronghold for the species, but these colonies have vanished, and no individuals have been reported in the country in recent years. The decline in the species has practically gone unnoticed. The species is in urgent need of help. Please send any information that you have concerning Greater

Adjutant Storks to Malcolm Coulter, SREL, Drawer E, Aiken, South Carolina 29802, U.S.A. We urgently need to understand the current status of the species in order to determine and press for needed action.

### M. P. KAHL RECEIVES MACARTHUR FELLOWSHIP

M. P. Kahl received a fellowship from the John D. MacArthur Foundation in July, 1988. Dr. Kahl is familiar to stork researchers for his pioneering work on all species in the family during the 1960's and 1970's. He has more recently studied Flamingos and Spoonbills. The fellowship provides full funding for his activities for the next five years, with no obligations. He is one of 31 to receive MacArthur Fellowships in 1988. These fellowships are awarded to a wide range of people, including many artists. While he is still developing his goals for the coming years, his plans will include continuation of his spoonbill work. He will begin work on Black-billed Spoonbills in Asia. He may also write a monograph based on his Flamingo research. offer We heartv congratulations to Dr. Kahl for this welldeserved award!

### PROCEEDINGS: SYMPOSIUM ON THE CONSERVATION OF THE WHITE STORK

A symposium on the conservation status of the White Stork (Ciconia ciconia) was held in Walsrode, West Germany in October, 1985; although the proceedings have been slow in coming (try holding an event where there are 25 countries represented and just as many languages, ask each participant to write a paper in a foreign language, and then try editing these it is no easy task!), but papers; significant progress has been made. All papers have been carefully edited, and are being reread for final corrections. The proceedings, edited by Dr. Goetz Rheinwald of West Germany and John

Ogden of the United States, should be printed in a matter of months. We hope to announce the availability of the proceedings in the next newsletter.

### SYMPOSIUM ON THE ECOLOGY AND CONSERVATION OF STORKS

A symposium concerning ecological studies and conservation problems for the world's stork species occurred at the tenth annual meeting of the Colonial Waterbird Society on October 25,1986, in Charleston, South Carolina, USA. The meeting was attended by researchers from around the world. A total of fifteen presentations were given on topics ranging from ecological research and conservation problems to genetics and captive propagation. Field researchers had the opportunity to The interact with zoo researchers. abstracts for all presentations are printed in Colonial Waterbird Newsletter 1986: Volume 10, No. 3.

Manuscripts for most of the presentations appeared in: Coulter, M.C., and J.A. Rodgers, Jr. 1987. Ecology and Conservation of Storks: Proceedings of an International Symposium at the Tenth Annual meeting of the Colonial Waterbird Society. Colonial Waterbirds 10,2:129-268. Although only a limited number of these proceedings were originally printed, the Savannah River Ecology Laboratory will reprint the volume in the fall of 1988.

#### SYMPOSIUM ON CONSERVATION OF THE ORIENTAL WHITE STORK (CICONIA BOYCIANA) QIQIHAR, PEOPLE'S REPUBLIC OF CHINA

A symposium on the biology and conservation of the Oriental White Stork (Ciconia boyciana) was held at the International Crane Workshop in Qiqihar, People's Republic of China, from 3 to 7 May, 1987. Kyoko Archibald, Wang Qishan and Charlie Luthin organized the symposium which

was attended by over 40 participants. The Oriental White Stork, recently distinguished as a separate species from the European White Stork, has declined dramatically in recently years. Formerly breeding in China, Siberia, Korea and Japan, its breeding area is now restricted to areas surrounding the Sungari and Amur Rivers along the Chinese/Soviet border; and the storks winter along the Chang Jiang (Yangtze) River in central China). A conservationoriented poster, designed by Kyoko Archibald and prepared by Scott Hecker, an artist and stork biologist, was distributed among the attendants for public display in areas where the species is found. The proceedings of the symposium will be edited by Charlie Luthin, Wang Qishan, Kyoko Archibald and Malcolm Coulter.

### WORKSHOP ON THE CONSERVATION AND CAPTIVE REARING OF STORKS

During October 27-29, 1986, field researchers from all over the world met with zoo biologists to discuss the status of storks in the wild and in captivity. Priority species were determined and recommendations for captive rearing were also discussed there at the Wildlife Survival Center on St. Catharine's Island. Georgia, U.S.A. The goals of this meeting included the establishment of better communications between field and zoo biologists and the the status of each stork species in zoos and recommendations for captive propagation.

Sponsors for this workshop included: E. J. Noble Foundation, New York Zoological Society, St. Catharine's Island Foundation, W. W. Brehm Fund for International Bird Conservation, ICBP Specialist Group on Storks, Ibises, and Spoonbills, and the University of Georgia's Savannah River Ecology Laboratory.

Following the meeting a questionnaire was distributed by

Catherine King to determine the status of storks in captivity throughout the world. A summary of the questionnaire results are available from Catherine King/Malcolm Coulter, SREL, Drawer E, Aiken, South Carolina 29802. The proceedings of the St. Catherine's workshop will be published by *The Stork Interest Group* in 1989.

The workshop resulted in the formation of The Stork Interest Group, dealing primarily with the contribution of captive propagation to stork conservation and aiming at increasing communication among zoos and other captive institutions that are interested in storks. Membership in the group is open to all interested parties. A Stork Interest Group Newsletter will be coedited by Ronald Johnson and Catherine King and sent to all interested people. If you are interested in being participating in the group and receiving the newsletter write to Ronald Johnson/Catherine King, Miami Metrozoo, 12400 SW 152nd Street, Miami, Florida 33177, U.S.A.

### SCARLET IBIS CONSERVATION WORKSHOP

During 4-8 March, 1988, a group of over fifty biologists and conservationists met in Caracas, Venezuela, to present papers and discuss the status and biology of the Scarlet Ibis. All seven countries where Scarlet Ibis are found were represented at the workshop; in addition, key ibis researchers from the Netherlands and the United States attended. Following a series of formal presentations and national reports, participants formed regional working groups to discuss research and conservation priorities for the species. These recommendations are being consolidated in the form of a Scarlet Ibis Action Plan, which will be published along with the scientific papers and national reports in a proceedings published by the International Waterfowl Research Bureau (IWRB). We expect the Proceedings to be completed by the end of the year. Peter Frederick (University of Florida) and Professor Gonzales Morales (Central University, Venezuela) are editing the proceedings, with assistance from Dr. Arie Spaans of Holland.

## WORKSHOP ON THE 1988 BREEDING SEASON FOR WADING BIRDS IN SOUTHEASTERN UNITED STATES

Early reports have suggested that the 1988 breeding season for wading birds in southeastern United States will prove to be quite different from other. more normal breeding seasons. The weather conditions have been abnormally dry in many areas. In South Carolina, Georgia and northern Florida, birds returned to their colonies late and in low numbers. Breeding success at some colonies was very low. On the other hand, at the Corkscrew colony in southern Florida, storks returned to breed very late and initial indications suggest that the birds at this colony will be very successful. The final tallies may not support these initial suggestions. However, because a severely anomalous year has been indicated, Malcolm Coulter is organizing an informal workshop at the upcoming Colonial Waterbird Society / Pacific Seabird Group meeting in Washington, D. C., U.S.A., in October, 1988, to discuss the 1988 wading bird breeding season in the southeastern United States.

### STORKS, IBISES AND SPOONBILLS OF THE WORLD

Based on the popularity of the Herons of the World (Hancock & Elliott 1978) and The Herons Handbook (Hancock and Kushlan 1984), this forthcoming book by James Hancock and James Kushlan will also be a big success. For several years the idea for this book was brewing; finally in 1987, a contract was secured with Academic Press in the United Kingdom to produce

this book. During a visit by Hancock to Vogelpark Walsrode, West Germany last year (to photograph the extensive collection of storks, ibises and spoonbills), a contract was signed by Wolf Brehm, Director of Vogelpark, Hancock, and Academic Press, whereby the Vogelpark agreed to sponsor the color plates by British artist Robert Gillmor and Alan Harris. Hancock and Kushlan met at the end of 1987 to plan and begin writing their book, and will meet again in this year. We can expect to see the book in late 1989 or 1990.

# BIBLIOGRAPHY OF THE GENUS EUDOCIMUS (THRESKIORNITHIDAE, AVES)

This extensive bibliography of the genus Eduocimus (Scarlet and White Ibises, North American and Neotropics) was prepared by Drs. Koen Brouwer and Marcel van Wieringen (University of Amsterdam, Holland) as a special contribution to the Scarlet Ibis Conservation Workshop. Almost 400 references are provided in this publication of the Dutch Research Institute for Nature Management. The references are further catalogued geographically and by subject. This is certainly an extremely useful resource for anyone interested in ibis research. A copy may be ordered for \$ (U.S.) 5.00 from the Research Institute for Nature Management, P.O. Box 46, 3956 ZR Leersum, the Netherlands (RIN Contributions to Research on Management of Natural Resources 1988-1).

#### BIBLIOGRAPHY ON STORKS, IBISES, AND SPOONBILLS

Charlie Luthin has collected a large number of Stork, Ibis and Spoonbill articles over the years. Malcolm Coulter is moving forward with this initiative to coordinate a full bibliography for the group. This will be very much a combined effort. In addition to Charlie Luthin's references, Phil Kahl is making his large file, collected over many years, available to the project, as are Jim Kushlan (particularly strong on ibises), and Catherine King. The project is sponsored by the Savannah River Ecology Laboratory's Wood Stork Program. The final copy will be available in both hard copy and on floppy disks. The bibliography will be open-ended in that it will be easily updated. We hope to have it available in 1989.

#### RECENT LITERATURE

The following articles concerning storks, ibises, and spoonbills have been published in the last few years. If you have written or read recent pertinent publications which do not appear in this list, please send the title, etc. to us for the next list.

Articles from the Symposium on the Ecology and Conservation of Storks held in Charleston, South Carolina, U.S.A., are marked with an asterisk (\*).

- Babko, V.M. 1987. [On the records and breeding of the Black Stork (*Ciconia nigra*)in the southwestern part of Chernigov Region.] Ornitologiya 22:175. [Russian]
- Beteille, G. 1986. [The Spoonbill (*Platalea leucordia*) in the Seine Estuary (1980-1985).] Cormoran 5:473-479. [French]
- Bildstein, K.L. 1987. Energetic consequences of sexual size dimorphism in White Ibises (*Eudocimus albus*). Auk 104:771-775. [English]
- Bloesch, M., W. Boettcher-Streim and M. Dizerens. 1987. [Wing and tail moult in the Black Stork *Ciconia nigra*.] Ornithol. Beob. 84:301-315. [German]
- Bray, M.P., and D.A. Klebenow. 1988. Feeding ecology of White-faced Ibises in a Great Basin Valley, U.S.A. Colonial Waterbirds 11:24-31. [English]

- \*Bruning, D.F. 1987. The conservation role of captive propagation in zoos. Colonial Waterbirds 10:255-258. [English]
- \*Bryan, A.L., Jr. and M.C. Coulter. 1987. Foraging flight characteristics of Wood Storks in east-central Georgia, U.S.A. Colonial Waterbirds 10:157-161. [English]
- \*Comer, J.A., M.C. Coulter and A.L. Bryan, Jr. 1987. Overwintering locations of Wood Storks captured in east-central Georgia. Colonial Waterbirds 10:162-166. [English]
- \*Coulter, M.C., and J.A. Rodgers, Jr. 1987. The ecology and conservation of storks. Colonial Waterbirds 10:129-130. [English]
- \*Coulter, M.C., W.D. McCort and A.L. Bryan, Jr. 1987. Creation of artificial feeding habitat for Wood Storks. Colonial Waterbirds 10:203-210. [English]
- \*Coulter, M.C., A.L. Bryan, Jr., H.E. Mackey, Jr., J.R. Jensen and M.E. Hodgson. 1987. Mapping of Wood Stork foraging habitat with satellite data. Colonial Waterbirds 10:178-180. [English]
- \*Dallinga, J.H., and S. Schoenmakers. 1987. Regional decrease in the number of White Storks (*Ciconia* c. ciconia) in relation to food resources. Colonial Waterbirds 10:167-177. [English]
- DesFayes, M. 1987. Evidence for the ancient presence of the Bald Ibis Geronticus eremita in Greece. Bull. Br. Ornithol. Club 107:93-94. [English]
- \*Farnell, G., and P.W. Shannon. 1987. The breeding of Abdiim's Storks at the Audubon Park Zoo. Colonial Waterbirds 10:251-254. [English]
- Fourage, J. 1987. [Post-nuptial call of the Black Stork (*Ciconia nigra*)]. Aves 24:152-153. [French]
- Frederick, P.C. 1985. Intraspecific food piracy in White Ibis. J. Field Ornithol. 56:413-414.

- Frederick, P.C. 1986. Conspecific nest takeovers and egg destruction by White Ibises. Wils. Bull. 98:156-157. [English]
- Frederick, P.C. 1986. A self-tripping trap for use with colonial nesting birds. N. Amer. Bird Bander 11:94-96. [English]
- Frederick, P.C. 1987. Extrapair copulations in the mating system of White Ibis (Eudocimus albus). Behaviour 100:170-201. [English]
- Frederick, P.C. 1987. Responses of male White Ibises to their mate's extrapair copulations. Behav. Ecol. Sociobiol. 21:223-228. [English]
- Frederick, P.C., and M.W. Collopy. 1988.
  Reproductive ecology of wading birds in relation to water conditions in the Florida Everglades. Florida Coop. Fish and Wildl. Res. Unit, Sch. For. Res. and Cons., Univ. of Florida. Tech. Rept. No. 30.
- Gallager, M.D. 1986. Abdiim's Stork in Arabia. Sandgrouse 8:107-111. [English]
- Glas, L., and D. Porper. 1986. [Nesting of storks on the Golan Plateau.] Tzufit (Sunbird) 4:6-15. [Hebrew]
- Guillet, A. 1984. Ecological and ethological aspects of the nest of the Shoebill. Proc. Pan-Afr. Ornithol. Congr. 5:231-236. [English]
- Horin, O., and M. Adar. 1986. [Survey of the White Stork migration, Israel, Spring, 1984.] Tzufit (Sunbird) 4:17-38, 138. [Hebrew]
- \*Johnson, R.E., M.C. Coulter, C.S. Luthin, C.E. King and A.J. Valenzuala. 1987. Storks: status, conservation and captive breeding. Colonial Waterbirds 10:236-241. [English]
- \*Kahl, M.P. 1987. An overview of storks of the world. Colonial Waterbirds 10:131-134. [English]
- \*Kahl, M.P. 1987. A portfolio of storks of the world. Colonial Waterbirds 10:135-150. [English]

- Kahl, M.P. 1988. Breeding displays of Australian spoonbills. Natl. Geogr. Res. 4:88-111. [English]\*Kahn, M.A.R. 1987. Conservation of storks and other waterbirds in Bangladesh. Colonial Waterbirds 10:229-235. [English]
- \*Kasoma, P.M.B., and D.E. Pomeroy. 1987. The status and ecology of storks and the Shoebill in East Africa. Colonial Waterbirds 10:221-228. [English]
- Kinzellbach, R.K. 1986. New records of the Goliath Heron, Yellow-billed Stork, Blyth's Reed Warbler and Clamorous Reed Warbler in the Middle East. Bull Ornithol. Soc. Middle East 17:13-17. [English]
- Kirkpatrick, C.E. 1986. Isolation of Salmonella spp. from a colony of wading birds. J. Wildl. Dis. 22:262-264. [English]
- Kyllingstad, H.C. 1986. A record of Bald Ibis from the Sinai Mountains. Bull. Ornithol. Soc. Middle East 17:1-2. [English]
- Klimov, S.M. 1987. [On nesting of the White Stork (*Ciconia ciconia*) in Lipetsk Region.]
  Ornitologiya 22:183. [Russian]
- Kushlan, J.A., and P.C. Frohring. 1986. The history of the southern Florida Wood Stork population. Wilson Bull. 98:368-386.
- \*Luthin, C.S. 1987. Status and conservation priorities for the world's stork species. Colonial Waterbirds 10:181-202. [English]
- Maccarone, A.D., and K.C. Parsons. 1988.
  Differences in flight patterns of nesting ibises and egrets. Colonial Waterbirds 11:67-71. [English]
- McLean, S. 1986. Saddlebilled Stork breeding at St. Lucia. Lammergeyer 37:55. [English]
- Mellen, J.W., and N.O. Dronen, Jr. 1987. Some digenetic trematodes from a Wood Ibis *Mycteria americana*, including a new species of *Ascotyle*. Trans. Am. Microsc. Soc. 106:269-272. [English]

- Nakhasathien, S. 1987. The discovery of Storm's Stork *Ciconia stormii* in Thailand. Forktail 3:43-49. [English]
- Ogden, J.C., D.A. McCrimmon, Jr., G.T. Brancroft and B.W. Patty. 1987.
- Breeding populations of the Wood Stork in the southeastern United States. Condor 89:752-759. [English]
- Osterman, W. 1987. [Breeding record of *Ciconia nigra* in eastern Westphalia.] Charadrius 23:208. [German]
- Petit, D.R., and K.L. Bildstein. 1986. Development of formation flying in juvenile White Ibises (*Eudocimus albus*). Auk 103:244-246. [English]
- Petit, D.R., and K.L. Bildstein. 1987. Effect of group size and location within groupon the foraging behavior of White Ibises. Condor 89:602-609. [English]
- \*Rodgers, J.A., Jr., A.S. Wenner and S.T. Schwikert. 1987. Population dynamics of Wood Storks in north and central Florida, U.S.A. Colonial Waterbirds 10:151-156. [English]
- Schierer, A. 1987. [Electric power lines and White Storks *Ciconia ciconia*.] Alauda 55:306.
- Schlutheis, D. 1988. [Hand-rearing the Scarlett Ibis, *Eudocimus ruber*.] Gefiederte Welt 112:17-18. [German]
- \*Shannon, P.W. 1987. The Jabiru Stork (*Jabiru mycteria*) in zoo collections in the United States. Colonial Waterbirds 10:242-250. [English]
- Skoptsov, V. 1987. The storks (*Ciconia* spp.) of the Tambov Region.] Ornitologiya 22:194-195. [Russian]
- Smirenskii, S.M., V.A. Andronov and A.F. Bylkov. 1987. [First results of colour marking of the Oriental White Stork (*Ciconia boyciana*).] Ornitologiya 22:219-220. [Russian]

- Sutter, E.R. 1984. Ontogeny of the wing moult pattern in the White Stork *Ciconia ciconia*. Proc. Pan-Afr. Ornithol. Congr. 5:543-551. [English]
- Swennen, C., and E.C.L. Marteijn. 1987. Notes on the feeding behaviour of the Milky Stork *Mycteria cinerea*. Forktail 3:63-66. [English]
- Varden, J.G. 1986. Black Storks near Featherstone. Honeyguide 32:88. [English]
- \*Verheught, W.J.M. 1987. Conservation status and action program for the Milky Stork (*Mycteria cinerea*). Colonial Waterbirds 10:211-220. [English]