

THE ICF BUGLE

Volume 12, Number 4 November, 1986

World Center for the Study and Preservation of Cranes



Reintroduction of Sandhill Cranes to the Wild

Robert Horwich, ICF Ethologist

A tall, baggy crane-like figure, its scraggly feathers drooping, plods through the fields as it calls its chicks with low grunts. The three chicks keep close as the group moves quickly toward the east kettle marsh on the ICF grounds. Such strange sights have been frequent at ICF during the last two spring seasons. This odd "mother" has been part of an unusual but effective method of hand rearing cranes for reintroduction into the wild.

Research on reintroducing captive cranes has the goal of bolstering populations of endangered cranes. Most of the work has focused on the Whooping Crane and the Mississippi Sandhill Crane, an endangered subspecies of the widespread Sandhill Crane.

In the case of the Whooping Crane, researchers from the U.S. Fish & Wildlife Service, the Canadian Wildlife Service, and the University of Idaho have used a cross fostering technique. They have removed one of two eggs from Whooping Crane nests and transferred them into Sandhill Crane nests to be reared by foster Sandhill parents. This effort aims at re-establishing Whooping Cranes in areas where the species has disap-

peared from its former range.

In other reintroductions, with the Mississippi Sandhill Crane, gradual "soft" releases of captive parent-reared birds have been used to increase wild populations (see the article on page 2 of this *Bugle*). Researchers speculated that birds between one and two years of age that were *parent-reared* in a captive situation had the best chances for a successful release.

Early studies had suggested that *hand-reared* birds were not good candidates for release. Such birds showed attachment to humans and an inability to find natural foods for their survival. But workers at ICF have been trying to develop a successful method for hand-rearing crane chicks. If we could learn how to prepare these birds for the wild, they would offer a less costly, more efficient way to increase endangered crane



Leading captive-produced cranes into the wild is not easy. For the last two seasons, ICF researchers have met the challenge dressed in a crane costume. This issue of *The ICF Bugle* features two articles concerning the release of cranes into their natural

habitats. Now that captive breeding has achieved consistent success, conservationists are exploring methods for sending some of these valuable chicks back into the wild. Photo by Rob Horwich.

continued on page 4

Safeguarding Mississippi's Last Cranes

by Jacob M. Valentine, Jr.

[Jake Valentine worked with the U.S. Fish & Wildlife Service from 1950-1983. For the last fourteen of those years, he served as Gulf Coast Management Biologist. He is now writing a book on the Mississippi Sandhill Crane.]

Aldo Leopold wrote several paragraphs about Mississippi Sandhill Cranes in his 1928 game survey of Mississippi, but the report received little attention. Leopold thought that there were at least 50 and possibly more than 100 nonmigrant cranes in Jackson County, Mississippi. At this same time in Leopold's native Wisconsin, he reported only five breeding pairs of Greater Sandhill Cranes. The Sandhills of Wisconsin now number near 6,000 because of protection and improved habitats, while the Mississippi crane population has fallen to fewer than 50.

In 1963 I began my work with Mississippi Sandhills when I evaluated the effect of Interstate Highway 10 that was planned to go through the cranes' breeding range. Though the highway would destroy crane habitats

and stimulate further growth of real estate and commercial development, I concluded that the mass planting of slash pine on the breeding savannas and the expansion of housing into the range portended greater dangers. I recommended that the highway be routed north of the breeding range, and that a refuge be established.

Then in 1965 I began collecting crane eggs in Mississippi in a bold plan to establish a captive breeding flock whose progeny would be released into suitable marshes of Louisiana. The captive propagation of the cranes had modest beginnings at John Lynch's home at Lafayette, Louisiana but was later moved to the U.S. Fish and Wildlife Service's Patuxent Wildlife Research Center in Maryland.

Since 1966 Mississippi Sandhill Crane eggs (one egg from each two-egg clutch) have been collected nearly each year to build a captive breeding flock with the greatest possible genetic diversity. The reintroduction of cranes into Louisiana has been deferred, and the young from the captive breeding flock are now released on the Mississippi Sandhill Crane National Wildlife Refuge. "The release program is really the major factor that has helped the crane population hold its own," refuge manager George Chandler has said.

In 1972 taxonomist John Aldrich separated the Mississippi from the Florida crane and called the new subspecies *Grus canadensis*

pulla. Aldrich's work had an important result: in 1973 the crane was added to the U.S. list of endangered species. This listing has focused public attention on the small flock. A recovery team was formed, and a recovery plan was written and updated several times. In 1974 the Nature Conservancy purchased the first land to begin the refuge.

Protecting the Habitat

Meanwhile, construction continued on Interstate Highway 10 through the crane range. In 1975 the National Wildlife Federation and the Mississippi Wildlife Federation sought a temporary injunction in federal court against the Secretary of Transportation, et al, from continuing work on Interstate Highway 10 under section 7 of the Endangered Species Act. The Federation opposed the building of an interchange and the digging of excavation pits along the highway right of way.

I spent about six hours on the stand in federal court as an expert witness. The judge, however, decided the Federation had not proven that the highway would endanger the crane. The case was appealed and the Appellate Court ruled that the lower court had failed to take into account the indirect effects, primarily the increase in housing and commercial developments. The court directed the district court to stop the highway department from continuing work on the interchange until the Department of Interior determined what modifications were necessary to comply with the Endangered Species Act.

After months of wrangling between the Departments of Interior and Transportation, we resolved the issue. In order to build the interchange, the Federal Highway Administration was required to purchase about 1,900 acres of land around the interchange and along the access road to protect those lands from development. This land became part of the refuge.

The Sandhill Cranes were blamed for the litigation and the delay of highway construction. People, who didn't know what a crane was, became the crane's bitter enemies. The local politicians and the newspapers exacerbated the situation with wild statements and editorials. "Kill the cranes" was one solution. Arsonists burned thousands of acres of refuge and surrounding lands.

Unlike the situation in Wisconsin where hundreds of thousands of acres of potential crane environment remain, Mississippi crane habitats are limited to a small strip near the coast. The three refuge units are like islands surrounded by highways, housing developments, and pine forests. In addition to the endangered crane, the refuge protects and manages the savannas—a unique and



Jim Kurth, Assistant Manager at the Mississippi Sandhill Crane National Wildlife Refuge, inspects a crane nest. The land here was hand-cleared to provide habitat for the cranes. Photo by Jacob Valentine, Jr.



John Lynch watches a Mississippi Sandhill Crane, the first ever hatched in captivity. John volunteered the use of his private aviary in Lafayette, Louisiana while he worked for the U.S. Fish & Wildlife Service during the early years of the crane project. Photo taken in 1966 by Jacob Valentine, Jr.

have been located. Five are presently active, four are doubtful, and 15 are not now used.

In the past few years coyotes and bobcats have increased and have taken a number of cranes, particularly the recently released birds. Nest predation is low, but for unknown reasons chick mortality is high. Less than one young per year grows to flight stage.

We have tried several methods to add captive produced stock to the wild flock. A technique used lately is to substitute viable eggs from Patuxent into nests whose eggs have been determined to be dead by the egg flotation method. The egg switch has worked quite well, and allows unsuccessful pairs at least to hatch a chick. But because of high chick mortality, it may be more advantageous to raise the chick at Patuxent and release it as a subadult.

We have now initiated a new approach. Four pairs of Florida Sandhills are confined to individual breeding pens on the refuge, so that they will nest and lay eggs. One viable egg from Mississippi Sandhill two-egg clutches will be substituted for the eggs in the Florida Sandhill nest. The Florida pair will then raise the chick until it is mature enough to fly free and join the wild cranes on the refuge.

We've done a great deal to save the Mississippi Sandhill Crane from extinction. Habitat management on the refuge is providing an environment capable of supporting many times the present population of cranes. Unfortunately, recruitment among the present wild population is about equal to the mortality.

Our chief hope is an accelerated production of captive-raised juveniles for release into the wild. At this point just one released crane has successfully paired with a wild bird and produced eggs. But in the released crane population there are presently two six-year and five four-year old birds that ought to be in breeding condition. The fate of our Mississippi Sandhill Cranes lies in the productivity of these birds and the successes of the reintroduction program.

The public has come to accept the refuge and the cranes, and with continuing education no doubt will find them an economic and aesthetic asset. The Mississippi Sandhill Crane National Wildlife Refuge, holding 17,000 acres of the best crane nesting habitats available, is nearly complete. Assistant Refuge Manager Todd Logan, who has worked on the refuge for three years and anticipates retiring in 2011, has said, "The groundwork has been laid. I'm sure the goals — 30 breeding pairs and a population of 100 — can be reached. If we do by the time of my retirement party, I'll be pleased and impressed."

vanishing floral community.

When the refuge was acquired much of it was in planted pine forest. Refuge habitat management aims at restoring the open savannas which are used by the cranes for nesting and feeding. Several thousand acres of pine plantation have been bulldozed to remove the trees, and wet sites have been hand-cleared. As lands are cleared, managers use prescribed burning to control the growth of brush and pine. They have prepared and planted fields to corn, chufa, and winter rye grass to induce the cranes to remain on the refuge during the fall and winter. Five water control structures and road dams were built to conserve water.

Release Program Bolsters Wild Flock

Working with cranes requires years of time and great patience. Fifteen years were needed at Patuxent Wildlife Research Center to build a captive breeding flock of Mississippi Sandhill Cranes before the first juveniles were

available for release. In 1981 we released nine parent-raised subadults after a month of acclimation in a large pen. Two of these birds (now aged six years) still survive, and another mated with a wild female last year to produce eggs. But it has since died.

I consider the raise-and-release program essential for bolstering the population and insuring maximum genetic diversity. From 1981-1985 a total of 42 juveniles have been released, with 22 surviving. At Patuxent there are 33 captive Mississippi Sandhills. In 1985, six of the females laid 28 eggs; 20 hatched producing 16 young.

Among the wild population there may be seven or eight breeding pairs and a total of 25 birds. These are in addition to the 22 released birds. Between 1965 and 1986, we have found 103 nests, exclusive of renests, an average of slightly less than five per year (the number has ranged from eight in 1969, to two in 1980). Over the years 24 territories

Reintroduction

Continued from page 1

populations.

One of the main problems with hand-reared chicks is that they become imprinted on human caretakers: they orient to humans instead of cranes as their species and, consequently, show no fear of people. This confusion could lead to the death of an introduced crane because cranes are hunted in many areas of the world. A second problem has resulted in the death of released birds in the past—young birds didn't know enough about feeding and surviving in a wild situation when reared in captivity.

When George Archibald asked me to attempt to solve these problems and prepare hand-reared cranes for life in the wild, I had only rudimentary knowledge of cranes. But I had been studying young birds and mammals for the last 20 years, with a particular interest in young primates. I had found from my studies that young mammals pass through behavioral growth periods in which they emphasize certain behaviors at specific ages. Sometimes these behaviors recur in cycles as the infant develops.

Earlier studies showed that cranes also had these cyclic periods in development. I felt that if I could introduce crane chicks to the experiences they needed at the correct times during their development, they would be more apt to develop and learn the normal

skills needed for survival in the wild. This is what parent cranes normally do while they protect their chicks from predators. I would have to find a parental substitute that looked like a crane and could teach and protect the young crane chicks.

Problems of Imprinting

Young precocial birds — such as crane chicks, that hatch feathered and active — go through a rapid identification with their parents. Within the first day or two after hatching, they recognize their mother and will follow her in preference to all other things in their new environment. It is necessary that imprinting occurs early, or else the young chick will be confused and follow the wrong "mother." Some precocially born mammals similarly show the imprinting process. Occasionally, a newborn zebra has been known accidentally to follow a jeep instead of its mother; the nursery rhyme "Mary Had a Little Lamb" tells of a misdirected lamb that had imprinted on its mistress.

The imprinting process is certainly an important one for the young chicks' survival but it may also be important for some species later in life when they become sexually mature. At that time, if they have maintained an incorrect species attachment, they may attempt to court and breed with a member of the wrong species. This was the basis for George Archibald's famous dancing with Tex, the Whooping Crane so imprinted on humans that she showed no interest in her

own species. Such misidentification may also prove to be a problem in the cross-fostering of Whooping Cranes. The birds, after years of living with Sandhill Cranes, possibly may not recognize other Whooping Cranes as potential mates.

To combat this problem of mistaken identity, I devised models of Sandhill Cranes from cloth and feathers or used real mounted crane bodies where possible. The crane chicks were exposed to these mounted cranes, with realistic eyes and painted red head patches, for the first one to four weeks of their development. At the same time we fed the chicks through a hole in the door using puppets that resembled an adult crane head; we played brooding crane calls from speakers built into the model bodies. Thus the chicks imprinted on the crane-like models during the early, critical period in development.

At the same time or shortly following the removal of these models, we introduced the chicks to humans in a crane costume. The costume used the same puppet head and brooding call so that the chicks easily transferred their maternal attachment to this ugly costumed "mother." She was doubly interesting to the chicks because she moved and reacted to them. They quickly began to follow her when she called them.

This costume, that provided ICF staff with a continued source of hilarity, has solved the main problems for reintroducing crane chicks into the wild. The chicks identified with a facsimile of their species and could be introduced to what they needed to learn when they needed it, while still being protected from dangers during their early vulnerable period. One main question was still unanswered: would these chicks, after following such an ungainly parent, make the final reattachment to their own species when the time came for their release into the wild?

My assistants and I began taking the chicks out of their pens and into the east kettle marsh on the ICF grounds. At six to eight weeks of age, the chicks thought of little but foraging, so we wanted to introduce them to areas where they could find an ample variety of plant and animal foods. They especially liked foraging for insects and trying various plant materials. They became very excited when fed insects by the mother. They would watch intently as she pecked at a potential food source and then join her in pecking at it.

By ten weeks of age, we moved the chicks to a release site at Necedah National Wildlife Refuge located 55 miles northwest of ICF. We selected this area because it is a staging area for migrating cranes in the fall. As many as a thousand cranes may congregate here on the way to their Florida wintering grounds.



A puppet feeds the young chick in the presence of its mounted "mother." In this two parent family, the puppet provided food, while the model gave the physical contact essential for the young chick. Photo by Tom Ulrich.

The Chicks Fly Free

By the time of their arrival at Necedah, our chicks were beginning to fledge. First they were flying over the five foot corral fence. The costumed mother encouraged flight by running and flapping her one wing. They would follow closely, sometimes rising off the ground in short flights.

They also began to show a strengthening attachment to their costumed human mother. They followed her more closely and even pecked at her body and feathers. In a sense they were regressing, acting again like small chicks even though they were now almost adult size and could fly. As they perfected their flight they made longer and longer flights in a group around the marsh, but these flights were circular with the chicks always returning back to the cage site to be with their "mother." My original fear that we might lose the chicks once they could fly, now seemed almost absurd. The chicks became so attached that it was impossible to lose them, and they were spending less time foraging on their own. We felt like harassed mothers whose pesty children would not leave us alone.

Faced with the crucial time all parents must face, we knew we must release the chicks to go on their own. We were haunted with worries about their survival, but when the chicks were three and a half months of age, we entirely removed all vestiges of captivity including the all important costumed "mother." The moment of truth for the experiment was at hand. Would the chicks now see other cranes as their own species and join wild flocks?

Almost immediately we saw short and temporary liaisons with wild birds. Sometimes wild cranes would join our chicks and interact with them. Sometimes the flights and flight calls of the wild cranes would stimulate our chicks to fly after the wild flocks. Gradually these interactions increased. A month after the "release," three of our chicks began consistently to associate with a somewhat stable flock of wild cranes.

This was an exciting time. I worked with John Wood, a graduate student at the University of Wisconsin-Stevens Point, who was following the chicks that had earlier been fitted with radio transmitters. Not only were our chicks associating and feeding with wild birds, but they were learning to fear humans as well. Once they had joined this wild flock, the chicks would fly away when we humans came closer than 100 yards. Another problem had been solved. The chicks had accepted their own species and had learned fear of humans from them.

As the weather grew colder and the fall colors brighter, two of the chicks were seen by



A chick broods in the folds of its "mother's" costume. For this older chick, the active role of the costumed human made the costume more attractive than the mounted crane model. Photo by Rob Horwich.

themselves and then disappeared from the area. Two other chicks had flown south and west. We feared they were lost and flying into an area where there were no other cranes. Our study seemed to be fast disappearing into thin air. But a week later a crane researcher called ICF to report seeing two of our chicks at Jasper Pulaski Wildlife Area in Indiana, the largest staging area in the midwest for Sandhill Cranes. Our chicks had begun the migration.

John Wood and his advisor, Dr. Ray Anderson, journeyed to Florida and searched by air for the chicks in all areas where cranes were known to winter. They could not find our birds. It wasn't until the following spring that the full success of the study became evident. In May of 1986, four of our five released crane chicks were rediscovered back in Wisconsin. They had successfully survived the winter and returned to the release area with the wild cranes. We don't know where

they had been, with whom, or what they had been doing. We do know that they have been part of a highly successful method for releasing hand-reared cranes into the wild.

Post Script: 1986 reintroduction

In 1986 we attempted a second release with eight chicks hatched from eggs collected in Marquette County, Wisconsin. The chicks developed similarly to the chicks of the preceding year and were just beginning to fly large circles around the release site. But the final health check, that we expected to be just routine, indicated that all eight chicks were carriers of a form of Salmonella. We postponed the fall release and the chicks were returned to ICF for treatment. If we are successful in treating this problem, the birds will go into the wild next spring. Although disappointing, this delayed release will give us an opportunity to compare a spring release with the successful release of last fall.

ICBP Leads Bird Conservation Worldwide

By Pierre Manigault, Education Intern

The International Council of Bird Preservation (ICBP), the oldest international conservation organization, pioneered the worldwide environmental movement by working to save birds and their vanishing habitats. European and American scientists founded the council in 1922. They recognized that only cooperation on an international level could protect birds along their precarious migration routes. ICBP has long been one of ICF's most enthusiastic supporters. In 1973 ICBP and ICF co-hosted the International Crane Workshop in Bharatpur, India that brought together over 200 researchers from 24 countries and marked the historic meeting of Sino-Soviet crane preservationists.

Today ICBP encompasses over 300 member organizations, such as ICF and the National Audubon Society, in 100 countries representing over ten million people. ICBP was closely associated with the establishment of such organizations as the International Union for the Conservation of Nature and Natural Resources (IUCN) in 1948, the International Waterfowl Research Bureau (IWRB) in 1954, and the World Wildlife Fund (WWF) in 1961. Today ICBP often advises both the

The ICF BUGLE is the quarterly newsletter for members of the International Crane Foundation (ICF). Address: E - 11376 Shady Lane Road, Baraboo, Wisconsin 53913, U.S.A. Telephone: (608) 356-9462. Articles review ICF programs as well as crane research around the world.

**Co-Founders: George Archibald
Ron Sauvey**

Editor: Jim Harris

Asst. Editor: Pierre Manigault

ICF offers memberships at the following annual rates:

Individual	\$15	Foreign	\$20
Family	\$25	Sponsor	\$500
Associate	\$100	Patron	\$1,000



The osprey, highly sensitive to chemical contamination, occurs on six continents. It provides an appropriate logo for ICBP, an organization dedicated to the international conservation of birds. Logo reproduced courtesy of ICBP.

IUCN and the WWF on their bird related projects.

Among ICBP's contributions is their preparation of the volume in IUCN's Red Data Book that lists the status of all the world's endangered birds. The council develops an annual action plan based upon this list that outlines a four-year strategy of top-priority world bird conservation. There are presently over 150 projects in the works. With habitat and resources disappearing at such an alarming rate, ICBP must now focus its efforts on areas that are home to several or many endangered species.

Many ICBP programs benefit wetlands. The ICBP has been working closely with IWRB, IUCN, and WWF in a mutual effort to publish an Inventory of Important Wetlands in Asia. And in Morocco ICBP is overseeing a government initiated program to promote conservation of the country's prime wetlands.

The Moroccan project focuses on the coastal lagoon of Sidi Bou Rhaba, an important staging area for many European water birds and passerines. The Moroccan govern-

ment and ICBP have signed a Memorandum of Agreement. The agreement outlines the project's two-fold purpose: to train Moroccan officers in education techniques and wildlife management, and to establish a visitor's center at Lake Sidi Bou Rhaba that will serve as an education hall. The project will eventually expand to other areas on the Atlantic coast of Morocco.

In the nearly 65 years since its founding, ICBP has sponsored worldwide research on endangered birds, preserved vital habitat, and established international treaties supporting safe migratory routes. Most importantly, however, the ICBP deserves praise for its earliest efforts that elevated the conservation issue to a global concern and led the way to international conservation discussion and cooperation. Through its dedicated work with birds, ICBP has promoted the ethic of wildlife and habitat conservation.

We urge ICF members to join ICBP by sending \$35 to ICBP, 645 Pennsylvania Ave., S.E., Washington, D.C. 20003. Let's support this most productive organization and help save all the world's birds!

The Bottom Line

by Bob Hallam,
Development Coordinator

Success brings new opportunities. Each year, it seems, more avenues open for promotion of crane conservation. Our growth is made possible by the generosity of our members and ICF's hard-working volunteers, interns, and staff. In the past, our fall *Bugle* contained an envelope for a special year-end contribution. This year, we have decided to give each member a chance to express his or her personal interest in a particular program by designating where the special gift will go. Your support will help our staff meet unforeseen opportunities that arise each year.

This year, for example, partial funding became available for an educator to go to Zhalong Nature Reserve in China, where human disturbance threatens nesting cranes. We needed additional funding for a battery operated slide projector and educational materials for villagers. As another example, we had the chance to bring eggs of the Gray Crowned Crane from the San Antonio Zoo in Texas to ICF for hatching. We simply needed to find the air fare for our Curator of Birds to go get the eggs (see the article on page 8 of this *Bugle*).

In both cases, we found the necessary funds, but the last minute financial uncertainties greatly complicated the projects. It is our hope that the new envelope in this issue — and your support — will provide our staff with more flexibility to meet the opportunities of growth. Next fall, we will have an article explaining where your support was used.

A Gift to the World

ICF's capital campaign has received gifts and pledges totaling \$638,310. Recently, ICF contracted with an engineering firm to design and oversee construction of Crane City. In our next *Bugle* we will have an expanded article on the progress toward Crane City and the next stage of our capital campaign.

Gifts and Pledges

We wish to thank all of our members and friends who supported the campaign from April through September of 1986:

Mitchell C. Adamus; A.D.C. Inc.; Mr. & Mrs. C.R. Agnew; Marguerite Ahlstrom; Albrecht Foundation; Ben Allison; Thelma Babbitt; Mr.

& Mrs. Peter Baldo; Mr. & Mrs. Henry Baldwin; Robert A. Behrstock; Mr. & Mrs. Judson Bemis; Janet Berger; Herbert R. Bird; Jane E. Bjorklund; Susan Bleeke; Mr. & Mrs. Robert M. Bolz; Mr. & Mrs. Charles C. Bradley; Katharine T. Bradley; The Lynde and Harry Bradley Foundation; Marcia L. Brehmer; Mr. & Mrs. W.A. Brock; Mr. & Mrs. James W. Carpenter; Gertrude Carter; Mr. & Mrs. R.J. Christman; Alice M. Clark; Mr & Mrs. Charles A. Clark; Nancy L. Clayton; Catherine B. Cleary; Consolidated Papers Foundation, Inc.; Barbara Ann Crass; Mary Jean Cronon;

Mr. & Mrs. Ross H. Dean; Dells Animal Hospital; Mr. & Mrs. P.J. Dickert; Helen A. Dickie; Emily P. Dodge; Mary H. Doering; Edith M. Dudgeon; Lucile Dudgeon; Mr. & Mrs. Douglas W. Dunlop; Jane P. Eastham; Kay Easton; Ms. Joanne Elliott; Thomas W. Engelhardt; Armand G. Erpf Fund; Mr. & Mrs. Kenneth Findley; Mr. & Mrs. Ken B. Fitzsimmons; Mr. & Mrs. Lowell Frautschi; Florence Gardner; Sallyann Garner; Mr. & Mrs. David Garrison; Riva R. Gordon; H. J. Hagge Foundation, Inc.; Gail D. Hansis; Virginia E. Hansis; Mr. & Mrs. John M. Hartwell; Evan & Marion Halfaer Foundation; Mr. & Mrs. Edward Henze; King Herr; Dr. & Mrs. Joseph Hickey; Dr. Luc Hoffmann; A. Jeanette Howe; Margaret A. Huff; Dr. & Mrs. V.H. Hunkel; J.M. Hutchinson; Mr. & Mrs. George Icke; Mr. & Mrs. Reinhardt H. Jahn; Richard K. Johnson; Mr. & Mrs. J.W. Jung; Matilda Jung; June F. Kabelitz; Joyce & Lynn Knutson; Edna E. Koenig; Mr. & Mrs. Robert C. Kohls; Norma J. Kolthoff; Rosemary W. Kwilosz; Mr. & Mrs. Warren Kubitschek; Mr. & Mrs. R.S. Kurtenacker; Mr. & Mrs. Harold E. Kubly; Mr. & Mrs. Joseph J. Lalich; Mr. & Mrs. Carl T. Lange; Rose-Marie Lewent; George Lill III; Jenny J. Lind; Mary Beth Liss; Mrs. Glen A. Lloyd; Dr. & Mrs. Gregory R. Lochen; Mr. & Mrs. Robert Lovejoy; Mr. & Mrs. James T. Lundberg;

Mr. & Mrs. Robert A. McCabe; Dorothy W. McIlroy; Peter Manigault; Marshall & Ilsley Bank Foundation Inc.; Charles E. Merrill, Jr.; Mr. & Mrs. Ed Mixa; Virginia Moede; Dorothy A. Moen; Mr. & Mrs. John F. Morthland; Dr. Josephine Murray; Elizabeth B. O'Connor; Dr. Joyce O'Halloran; Robert Ohlerking; Mr. & Mrs. Robert Olsen; Oshkosh B'Gosh Foundation Inc.; Dr. Sara Petry; John Pierrepont; Ray E. Pippert; Jeffrey A. Polk; Mr. & Mrs. John W. Pollock; Ellen H. Powers;

Mr. & Mrs. Frank J. Remington; Hans Ris; Florence D. Roberts; Mr. & Mrs. A.D. Robertson; Mr. & Mrs. Laurance S. Rockefeller; Mr. & Mrs. James Rogers; Joan Rohan; Ione M. Rowley; Mr. & Mrs. Jerome

Contributions

Received July-September, 1986

Grants and Awards: Janet Balding; Mary Griggs Burke; Gerda Debelak; General Services Foundation; Johnson Controls; Mrs. Kenneth Jones; Mary Kohler; Jeanette Kratochvil; MacArthur Foundation; Andrew Major; Mr. & Mrs. Oscar G. Mayer; Estate of Ralph F. Moser; C.B. Read; Riparian Systems; Seebe Charitable Trust; Joanna Sturm.

Patrons: Don, Sue, & Kate Emerich; Bud Gussel; Gary Kuehn; Cecilia LaFrenz; Ed Moen & Vicki Pierce.

Sponsors: Cary Ann Linblad Foundation.

Associates: Mrs. Don Anderson; Ernest & Bettylou Anderson; Arthur Blumenfield; Beth Boyle; Richard Allen Brown; Joel Comet; Garth & Sally Dimon; Marion Doherty; Dupage Audubon Society; Kay Easton; Dean Fitzgerald; Bernice Roth Flaningam; Mr. & Mrs. G. W. Foster; Thomas France; Frank Freese; Mr & Mrs. John Geilfuss; Stephen Getsinger; Hubert & Phyllis Griffen; Lois Harris; Mr. & Mrs. John Hartman; Mrs. Edward Henze; Robert & Elizabeth Hickler; Mrs. Harold Hines; Dr. Luc Hoffman; Industrial Coils (James Kieffer); Joan Kruse; James Mooney; David Pearson; Campbell Read; Nathaniel Reed; H. Jean Rowley; Beth Schuett; William Schwab; Richard & Joan Shropshire; Elizabeth Williams; John Wright.

F. Saeman; Christina Savit; James R. Schaefer; Mr. & Mrs. Sterling W. Schallert; Mr. & Mrs. Ted Scharfenberg; Rena W. Schilsky; Walter Schroeder Foundation Inc.; Susan A. Schuleit; Mr. & Mrs. Robert Schumann; Dr. & Mrs. Richard Shannon; Chia Theng Shen; David Shen; Mr. & Mrs. Stanley Shepard; Mr. & Mrs. James F. Spohn; Elizabeth M. Starkweather; Mrs. Harry Steenbock; Marion K. Stocking; Mrs. W.C. Stone; Janet A. Streiff;

Dr. & Mrs. Stanley A. Temple; Dr. Lewis E. Thomas; Mr. & Mrs. Bruce Thorne; Mr. & Mrs. William P. Van Evera; Versa Technologies, Inc.; Sarita Van Vleck; Mr. & Mrs. Robert Weinstock; Mr. & Mrs. Jack Westman; Florence W. Whitefield; WICOR Foundation, Inc.; Dr. Margaret C. Winston; Wisconsin Public Service Foundation; Jean B. Yntema; Dr. & Mrs. William Young; Dr. Gabriele M. Zu-Rhein.

ICF Hatches Four Gray Crowned Cranes

by Pierre Manigault,
Education Intern

According to African legend, a powerful king once found himself lost in the desert. He asked the many animals that passed if they would help him and take him to water. None would, until finally, a beautiful crane offered the king a flight on his back to the king's palace. In gratitude, the king gave the cranes crowns of real gold. But soon the bird returned with news that the cranes were being killed and their crowns stolen. The king then replaced the gold crown on each crane's head with a crown of golden feathers.

With the hatching of four Gray Crowned Cranes this summer, we will soon have crowns of golden feathers at ICF. And these chicks bring us a step closer to completing our crane collection. ICF is now home to fourteen of the fifteen species. Only the Black Crowned Crane of West Africa is missing; we hope to have it soon.

The Gray Crowned eggs came from nests of two crane pairs at the San Antonio Zoo. ICF Curator of Birds Claire Mirande hand-carried them via airplane from Texas to Baraboo. Upon hatching, the chicks went straight into quarters at the Crowned Crane Exhibit.

Rearing the chicks required a little extra imagination on the part of ICF aviculturists. We teach most crane chicks to eat with the use of a red spoon. Since the head of the parent is red, young chicks seem to have a natural attraction to the color. The crownie

chicks, however, showed no particular interest in the color or, consequently, in the spoon or their food.

To get the chicks to eat, aviculturists finally painted their fingers black to mimic the adult crowned crane's beak. They fed the chicks by hand, enticing them with crickets and moist balls of chick chow.

Crowned cranes are the only cranes that regularly lay more than two eggs in a clutch. In the wild, most species of crane lay two eggs with only one chick surviving; there seems to be a natural aggression between

young chicks. We found, however, that the crownie chicks were much less aggressive. Perhaps their more sociable behavior stems from the fact that crowned cranes will often have a clutch of three to five young.

The four chicks are growing so fast now that their own keepers hardly recognize them from one week to the next. The chicks run about their private exercise yard, flapping their big wings and hopping off the ground. Their crowns are coming in like Mohawk haircuts of amber along the ridge of their scalps. We hope you'll come to see them next spring in our Crowned Crane Exhibit.



ICF's Gray Crowned Cranes hatched much later in summer than our other chicks. This species, like other tropical cranes, typically nests during our hottest weather. Photo by George Archibald.



Address Correction Requested

Nonprofit
Organization
U.S. Postage
PAID
Permit No. 179
Baraboo, WI 53913

