



# THE ICF BUGLE

Volume II, Number 1 March, 1985

World Center for the Study and Preservation of Cranes

## Florida Corporation Gives The ICF Bugle a Sunny New Look

by Ron Sauey, Co-Founder

This brightly colored issue opens a new chapter in the 11-year history of our newsletter. **Clairson International**, the world's largest manufacturer of vinyl-coated steel rod storage products, marketed under the brand name of "Closet Maid," has generously offered to finance printing and mailing costs for *The ICF Bugle*. Their special grant will cover expansion of our newsletter into a larger and more colorful format. The new *Bugle* will feature larger type, more pages, and even four-color photography on four of our eight pages.

Our newsletter first appeared in fall 1974. We named it *The Brolga Bugle* after the plaintive low-pitched call of Australia's aboriginal crane. It was informative, it was factual, and sometimes, though not often, it even aspired toward the literary. Alas, it was also dull gray and had such small type that some members classified it as "Excedrin Headache #234."

During my editorship, I was told of a college journalism instructor who used the name of our humble newsletter as a classic example of what NOT to name a newsletter. "Unfamiliar name," the august professor said. "No indication of the newsletter's subject ... too vague, too foreign, too forgettable."

A title change in the summer 1982 issue solved the name problem, but we still had a plain, grayish print that required special optics to read easily. We are very happy that Clairson, one of our long-time Florida supporters, has helped us overcome these problems.

For this first gala issue of the enlarged *Bugle*, Clairson has consented to let us

print one of their collection of 28 outstanding original paintings by Diane Pierce. These oils and watercolors of Florida birds in their natural habitats currently hang in Clairson's executive offices in Ocala, Florida. The subject matter of this painting is doubly appropriate.

First, the painting depicts a pair of Sandhill Cranes circling over their wetland home in central Florida's hammock country. Sandhills breed or winter in large areas of North America, including Wisconsin. Wild Sandhill Cranes even breed within a few miles of ICF's headquarters. In addition, Sandhills were the first captive cranes ever

to hatch at ICF, in May 1973.

This painting is also special because of the artist, **Diane Pierce**. Diane has long been a supporter of ICF. Very early in our history, she devoted countless hours to drawing and painting cranes, especially eggs and chicks. Her art appeared in many issues of the *Bugle*, and each piece without exception was a donation to the "crane cause."

In 1981, she personally presented an original oil painting of Siberian Cranes to Prime Minister Indira Gandhi in New Dehli (see *The Brolga Bugle*, Volume 7, Number 2).

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Sandhill Cranes fly over their Florida marsh.  
Painting by Diane Pierce.

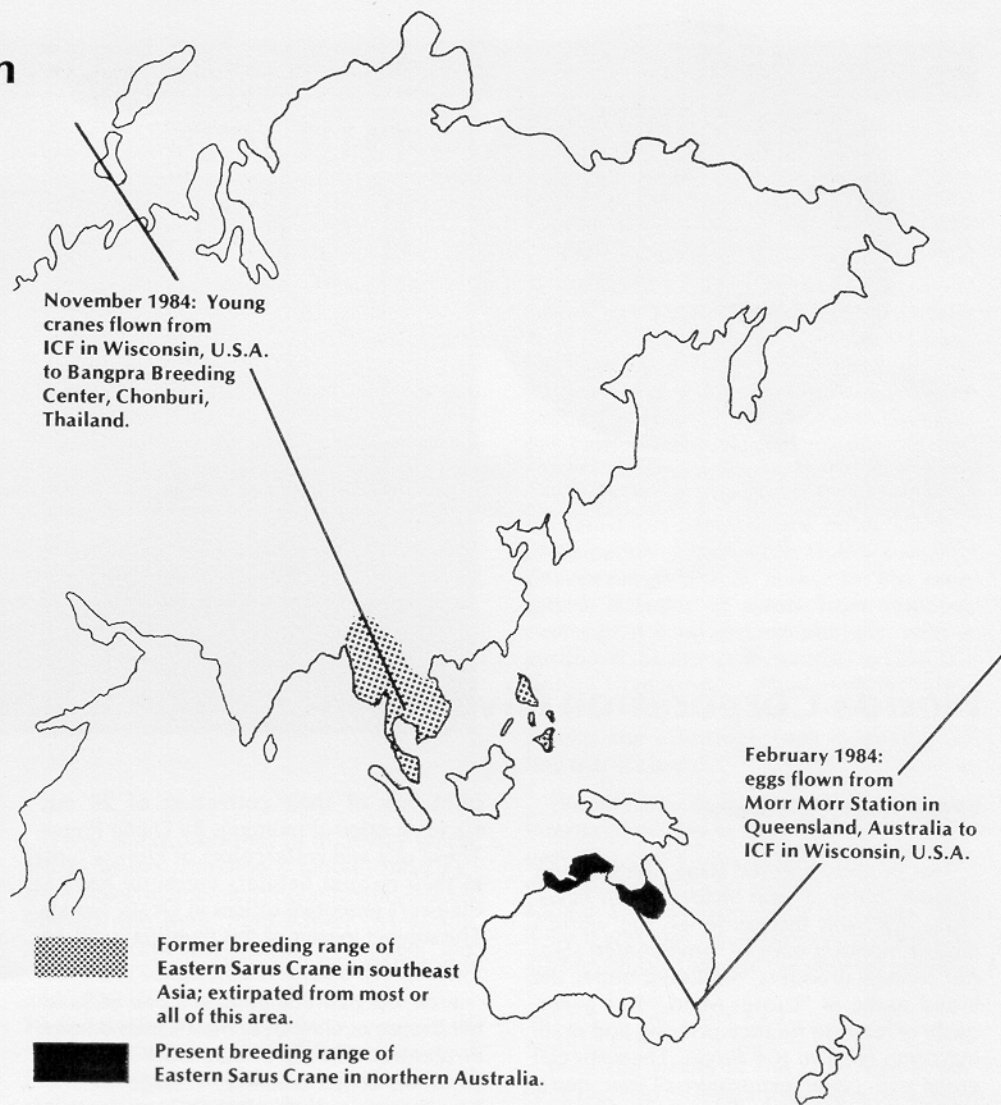
# Cranes Fit For a Queen

by George Archibald, ICF Director

Up in the jungle that surrounds the Bangpra Valley, gibbons chorused as usual. The male Great Hornbill gathered fruit for his imprisoned mate and brood, oblivious to a dramatic and historic event unfolding near the backwaters of the lake below. A torrential rain the night before had fed both the forest and the fields of sugar cane and tapioka. Just in case the rain should return that afternoon, two colorful tents had been raised near the local headquarters of the Royal Forestry Department. Here most of the senior staff of the Wildlife Conservation Division had assembled to prepare for the ceremony.

Bus loads of camouflaged security forces arrived by midmorning, followed by limosines laden with VIPs from Bangkok, 100 miles to the north. Hundreds of flag-carrying school children lined the road through the forest. The stars of the day stood ready, Eastern Sarus Cranes from Baraboo. These enormous, gray birds with pink legs would soon be property of the Queen of Thailand.

For hundreds of years, the Royal Family has been revered in Thailand. Formerly kings were renowned hunters, when elephant, rhino, deer, and wild cows abounded in wide jungles carpeting most of that hot, humid country. But most of the forests have been leveled as the human population has grown. Today Thailand is a democracy. The Royal Family emulates the unity and high values to which the Thai people



Mid February, 1984: George Archibald collects eggs of the Eastern Sarus Crane in northern Australia. Photo by Don Marshall.

aspire. And in recent years the King and Queen have taken an active interest in the conservation of wildlife.

Although most of southeast Asia was once covered by jungle, there were also expansive, open wetlands in low-lying areas. It was on these plains that the Sarus Cranes lived. But the lowlands were the first victim of development, and the cranes made a steady retreat. There have not been any confirmed sightings of cranes in Thailand since 1968.

In contrast, Sarus Cranes have increased in India and Australia, where they are protected, despite the alterations of wetlands. Sarus Cranes are more adaptable than several other species of cranes: if a region is disturbed they can coexist with people. In Thailand, however, the large birds were also shot for food. They vanished.

The recent interest in conservation in Thailand and the Sarus' adaptability combine to create an opportunity for the reintroduction of these cranes. Sarus Cranes reared in captivity are tame, and not suitable for release into the wild. But captive cranes could be placed in large pens adjacent to wetlands where cranes might survive in the wild. Then if the captive birds bred without people nearby, their young

could be allowed to fly from the enclosures and eventually colonize the natural areas. Such a "soft release" might be more effective than a "cold release," where adult cranes are simply released into the wild without preconditioning. Finally, if the birds were the personal property of the Queen of Thailand, the respect lavished on the Royal Family would then be shared with the cranes and a reintroduction made possible.

## End of a Long Journey

The presentation would culminate years of effort on behalf of the Eastern Sarus. The six young cranes, center of so much attention, had crossed half the world en route to Bangpra.

Although the Eastern Sarus Crane is extirpated from most or all of southeast Asia, a small flock was first observed in Queensland, Australia in 1953. Since then their numbers have increased on the continent, and in 1972 I captured six young birds and brought them back to the newly formed ICF for breeding and eventual restocking. Unfortunately only one of the six was a female. Over the years she produced ten young. Some of the captive birds were sent to our sister center, Vogel-

park Walsrode in West Germany.

For the sound genetic management of the captive flock, more unrelated females were needed. Through the kind support of ICF Director, Mr. John Henry Dick, and the Queensland National Parks and Wildlife Service, I was able to return to Queensland in January and February of 1984 to collect 24 Eastern Sarus eggs. I carried them back to ICF in a portable incubator. Even before our new hatchery and chick rearing complex was quite completed on our new site, the facility was filled with hungry Sarus Crane chicks from the Tropics. Outside, the March storms raged. Eighteen birds fledged from the 24 eggs.

Concurrent with the propagation at ICF, Charlie Luthin, the Conservation Director of the W.W. Brehm-Fund at Vogelpark Walsrode, had visited Thailand. He met with conservationists and inspected several wetland sites where a crane reintroduction might be attempted. Charlie worked closely with Miss Bubphar Amget of the Royal Forestry Department and Mr. Pisit na Patalung of the Wildlife Fund-Thailand, a private organization with the Queen as a patron. Bangpra was selected as the best reintroduction site.

ICF consented to provide six of the young birds reared from the eggs brought back from Australia earlier in the year. During the summer of 1984 Bubphar and her colleague, Miss Siriporn Thongaree, studied the captive management of cranes at both ICF and the Vogelpark, and this autumn they supervised the construction of crane aviaries at Bangpra.

ICF's captive Sarus Cranes underwent careful health checks as the time for their long migration drew near. Ken Fletcher,

DVM at San Antonio Zoo in Texas, performed his own migration, up to Wisconsin on October 28. His "crane sexing services" were essential to project Thailand. Ken used a surgical sexing method, making a very small incision in each young crane's abdomen, and inserting an otoscope. He was able directly to view the reproductive organs. It was extremely important to know the gender of the cranes being sent to Thailand because eventually they would be paired for breeding purposes. Thailand needed three males, and three females.

The six "pioneer" cranes left Baraboo on November 12, a gray, wet day — their last experience of cold northern weather. Scandanavian Airlines transported the cranes free of charge, all the way from Chicago to Bangkok. On the 14th, Crown Princess Somsavali would accept the cranes on behalf of her mother-in-law.

### The Presentation

At 3:00 p.m. we had taken our seats under the tent when the Royal party arrived. From her limosine to the throne under the tent, the Princess walked on a red carpet that passed a temporary enclosure where two of the six cranes were placed for the ceremony. After Mr. Narong Wong Wan, Thailand's Minister of Agriculture, and G.A. Jockel, Ambassador from Australia, had given eloquent speeches, I presented the ICF documents and health records for the six cranes and a large color photograph of a family of wild cranes to the Princess. After she had inspected the birds, the Princess planted a tree before proceeding over a bridge to a small island. There, under the shade of a thatched shelter, we enjoyed



November 12, 1984: ICF aviculturists place young Eastern Sarus Cranes into crates for shipment to Thailand from Wisconsin. Photo by Abby Marshall.

tea and sweets and conversation. The ceremony ended when the Princess walked back to her car along a path lined by hundreds of bowing and admiring subjects. Every few steps the Princess chatted with the children. Just before stepping into her car, she told the staff of the Royal Forestry Department that she would be returning with other members of her family to see the cranes. And as the cavalcade sped away, the rain started to fall.

The Eastern Sarus has returned to Thailand. Now through the constant care of Bubphar and her colleagues, and the educational efforts of the Wildlife Fund-Thailand, the future looks much brighter for earth's tallest flying birds. As the Thai people learn to love their cranes, their efforts will benefit a wealth of birds and other animals of the wetlands and rivers. If the Thai project is a success, we can also propose the return of the Sarus to neighboring nations including Burma, Laos, Kampuchea, Vietnam, and the Philippines.

Many people and organizations have helped project Thailand. In addition to those we have acknowledged already, we are grateful for the vital assistance of: the Association for the Conservation of Wildlife of Thailand, Mr. Roy Beasley, the International Council for the Preservation of Birds-Japan, Mr. and Mrs. William Johnson, Mr. and Mrs. Neville Travis Jones, Mr. Boonsong Lekagul, Mr. Hugh Lavery, Morr Morr Station, Schlumberger Limited, United Nations Environmental Program, and Mr. Danny Weaver.



November 14, 1984: Princess Somsavali receives the young cranes at Bangpra, Thailand. Photo courtesy of the Royal Forestry Department of Thailand.

# Red-Crowned Cranes on Exhibit

Hokkaido, the northernmost of Japan's main islands, is the year-round home for about 300 Red-crowned Cranes. Only three decades ago fewer than 40 cranes survived. Since then artificial feeding programs in winter have led to the dramatic increase in their numbers. The local people and the Japanese government deserve congratulations for helping the Red-crowned Cranes recover on Hokkaido.

From October through April, most of the cranes congregate on several fields. At these feeding stations, special crane caretakers scatter grain each day. Just as the cranes flock to the food, the public flocks to the cranes. The Japanese have constructed special observatories beside the feeding stations. From dawn to dusk during winter, photographers laden with enormous lenses take delight in "shooting" the cranes.

ICF has an active branch in Japan, and many of our members live near the cranes in Hokkaido. Some of these members are photographers. Last year they sent a collection of their best material for special exhibits in New York and Chicago.

Through a grant from the Armand G. Erph Fund, the prints were beautifully matted and framed. They were exhibited in the Burke Room of the Asia Society in New York, and then at the Chicago Academy of Sciences. George Archibald opened each exhibition with a lecture on wildlife conservation in east Asia. After the exhibits closed, the collection was given to ICF for storage and future use. Perhaps other cities would like to bring the beauty of Hokkaido and the Red-crowned Cranes to a gallery in their region.

ICF would like to thank the fine photographers who graciously contributed their art to the exhibition: Seisuke Abe, Gosetsu Fukuda, Keisuke Ikeda, Toshihiro Iwata, Kimio Kanomata, Masanori Kato, Azuma Kuroki, Toshikazu Mitomi, Takashi Murakami, Toshinori Nakai, Hiroshi Nashiki, Mamoru Saito, Masakatsu Saito, Kohji Sakurai, Akio Sato, Yoshie Satsuki, Yoshio Shibuya, Tadaharu Takahashi, Kohji Takano, and Yuwata Toshihiro.

In this first color issue of the *ICF Bugle*, we are pleased to feature several photographs from the Hokkaido exhibit.

**Photo credits: upper left, Yoshio Shibuya; upper right, Kohji Takano; lower left, Mamoru Saito; and lower right, Kohji Sakurai.**





Red-crowned Cranes winter amidst snow at Hokkaido, Japan.



# Some Cold Facts about Cryogenics

by Jere A. Gale, Research Associate

What does "cryogenic" mean? The word comes from the Latin roots "cryo" and "genic," literally meaning cold or frost producing. A more precise definition from a scientific dictionary lists cryogenic as the production and maintenance of very low temperatures and the study of the phenomena at these temperatures.

I am studying the cryogenic preservation of crane semen in liquid nitrogen at ICF in conjunction with the University of Wisconsin-Madison. The research aims at setting up a "semen bank" for endangered cranes of the world.

In the mid 1970's, Dr. George Gee, of the Patuxent Wildlife Research Center, and Dr. Thomas Sexton, of the Beltsville Agricultural Research Center, began successfully freezing the semen of Whooping Cranes and Mississippi Sandhill Cranes. My research will determine if the techniques they have developed will be effective for freezing semen of other crane species. At present, I am working with Red-crowned, White-naped, and Siberian Cranes.

There are two main reasons for these "semen banks." First, small crane populations run the risk of progressive inbreeding that decreases genetic diversity. As genetic diversity decreases, that species becomes more susceptible to disease and changes in environmental conditions that could cause extinction. With frozen semen, genetic diversity could be maintained in

the "semen banks," and the semen used for insemination purposes long after the donor's death. The genetic lines of different generations might then be exchanged, thus increasing genetic diversity. Exchange programs could be set up between different captive propagation centers to exchange genetic lines (frozen semen is much easier to ship than adult cranes).

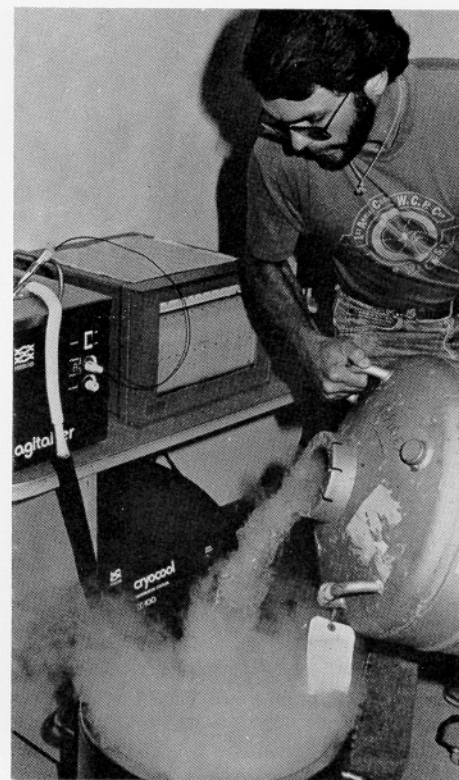
As a second major benefit, semen freezing would allow breeding centers greater flexibility in mating of birds. For example, paired cranes are sometimes asynchronous during the breeding season (meaning that the males and females are not in breeding condition at the same time). If a "semen bank" were available and this situation arose, semen samples could be thawed and used for insemination when necessary. Without semen freezing, fertile eggs could not be produced.

## Procedures Must Be Precise

Once the semen is collected in the field, I immediately dilute it with a crane semen extender developed by Dr. Gee, in a 1:1 ratio by volume. The extender is a buffering solution that protects the sperm from contaminants that may be contained within the sample. The extender also increases the sample volume and therefore makes working conditions easier — average semen samples are only 0.03 ml per ejaculate. Following extension of the samples, they are placed in an ice bath (+0.5°C) for transportation to the laboratory.

In the laboratory I inspect the samples microscopically to determine sperm concentration, percent motility, and degree of contamination. Only non-contaminated samples with high concentration and motility levels will be frozen. Once I have decided to freeze the sample, I add the cryo-protectant dimethylsulfoxide (DMSO) in a volume equal to that of the original semen sample. The DMSO protects the sperm from freezing damage while they are being frozen and once again upon thawing. After the addition of DMSO the samples are placed in a refrigerator (+5°C) for approximately 15 minutes to equilibrate. The samples then go into 0.5 ml plastic straws in which they will be frozen.

The freezing process must be carefully controlled. First, I take the samples from the refrigerator and place them in an ethyl alcohol bath together with an immerser cooling probe that reduces the temperature. The sample cools from +5°C to -20°C at a rate of 1°C/minute. I then remove the samples and hold them in liquid nitrogen vapor where the temperature drops from -20°C to -80°C (at a rate of -50°C/minute). When the samples reach -80°C I plunge them into the liquid nitrogen itself, dropping the temperature to -196°C. The frozen samples are then transferred to a



Jere Gale readies his equipment for semen freezing.

liquid nitrogen storage tank ("semen bank") where they remain at -196°C.

The semen can be kept indefinitely in liquid nitrogen. When samples are needed for inseminations, they are removed from the storage tank and placed in an ice bath (+0.5°C) to thaw for approximately 3½ minutes. The samples are again examined microscopically to determine percent motility of sperm and then inseminated immediately afterward.

## Acknowledgements

Highly sophisticated equipment controls the freezing procedure. I wish to thank the Wildlife Preservation Trust International, the International Foundation for the Conservation of Birds, and American Breeders Service, Incorporated for their technical service and the funding that made it possible to purchase much of the necessary equipment. I am also grateful to Dr. Gee for his suggestions on the project and the supply of semen extender.

Semen freezing has become a commonplace tool for breeding cattle. Cranes are much more difficult to work with because of tiny semen samples and the delicacy of the sperm. But semen freezing promises to be yet another tool of technology that will help secure a long future for the cranes.

**The ICF BUGLE** is the quarterly newsletter for members of the International Crane Foundation (ICF). Production and mailing costs are being met by a special grant from Clairson International of Ocala, Florida. Articles review ICF programs as well as crane research around the world.

Co-Founders - George Archibald  
Ron Sauey

Editor - Jim Harris

ICF offers memberships at the following annual rates:

Individual \$15	Foreign \$20
Family \$25	Sponsor \$500
Associate \$100	Patron \$1000



# A Tribute to Indira Gandhi

The untimely death of Indira Gandhi, India's Prime Minister, came as a shock to the world and particularly to conservationists. We at ICF feel a great loss. Over the past few years, Mrs. Gandhi took a personal interest in helping the tiny flock of Siberian Cranes that winter at the Keoladeo National Park just south of New Delhi in Rajasthan.

In 1982, Keoladeo was disintegrating from overgrazing by domestic herds and by the felling of trees for firewood. Mrs. Gandhi intervened by seeing that a wall was completed around the sanctuary and that the local people were provided alternate sources for grazing and fuel. And when India hosted the meeting of non-aligned nations in 1983, Mrs. Gandhi found time to meet with leaders of Afghanistan and Pakistan to discuss the threat posed by crane hunting to these same Siberian Cranes on their migration north.

We were always amazed that Mrs. Gandhi promptly answered our letters and that twice she found time to meet with ICF representatives. In her honor, the first Siberian Crane chick hatched at ICF in 1982 was named Gandhi. We have moved this magnificent male onto display at the Sam and Gene Johnson Exhibit Pod. He is a reminder to ICF visitors of a very special friend to wildlife.

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## The Bottom Line

by Bob Hallam, Development Coordinator

Today's troubled environmental situation requires increased education efforts. With the construction of new facilities, ICF has gained the capacity for a greatly expanded educational program. We are pleased to announce that the Kohler Foundation of Kohler, Wisconsin has pledged funds for the salary of an Education Assistant for the next three years. With this important support, will be able to maintain the present high quality of education programs at ICF as we serve growing numbers of people. In addition, we will be able to initiate exciting new programs.

The responsibilities of the Education Assistant will include scheduling and presenting programs to school and adult groups, running the visitor and tour programs, maintaining visitor facilities, developing special programs for the new site, maintaining audio-visual materials, coor-

# Spring Field Trips — Wisconsin

ICF announces two special field trips to study Sandhill Cranes and wetlands.

Wed., May 1 — **Necedah National Wildlife Refuge and Sandhill Wildlife Area**

Sat., May 25 — **Horicon National Wildlife Refuge by canoe**

These trips are part of an internship program for wildlife professionals visiting ICF for the spring from Zha Long Reserve in northeastern China. The trips will have a very limited size, and will be led by George Archibald and Jim Harris.

A donation of \$18 per person per day is required — this income will help support ICF's China programs. Participants must provide their own transportation, lunch, and canoe (for the Horicon trip only). The group will leave Baraboo at 8:00 a.m. and return by early evening. Participants may instead join the group at the field trip site.

To reserve a place, send your full payment to ICF. Include name, address, and phone number and specify the trip you wish to make. We'll then mail you details about what to bring and where to meet. Please save May 2 and May 26 as rain dates.

This is an unusual opportunity to watch cranes in the wild, and learn firsthand about ICF's international efforts. We hope you can join us.

dinating the Wisconsin Crane Count, and working with the Education Coordinator on outreach efforts through the state of Wisconsin.

The hiring of an Education Assistant will free the Education Coordinator to develop new audio-visual and printed materials. In addition, ICF is planning a field trip program so that members can observe wild cranes and wetlands in Wisconsin and elsewhere. ICF can also expand the education component to its work in India, China, Thailand, and other countries where education is the key to environmental protection.

We are extremely grateful to the Grants Committee of the Kohler Foundation for funding this position. Their support will strengthen ICF's educational programs both here and abroad.

\* \* \* \* \*

**Memorial Gifts:** ICF has received many gifts in memory of Eleanor Parson Zulauf, a long-time friend of ICF.

# Contributions

Received October — December, 1984

**Grants and Awards:** Walter Alexander Foundation, Abigail Avery, Mrs. Janet Balding, Wolf Brehm, Chicago Metallic Corporation, DEC International-Albrecht Foundation, Dellwood Foundation, Maria Finitzo, James D. Gallagher, Owen and Anne Gromme, Hubbard Foundation, IMC Foundation, Sturre Karlsson, Kohler Company, Kohler Foundation, Kopmeier Fund, Krause Foundation, Rick Lohr, Marshall & Ilsley Bank Foundation, Dr. Josephine Murray, National Audubon Society, Lee Norwood, Fred Ott, Mrs. Charles Pain, Pain Fund, George and Nancy Ranney, Norman Sauey, Ron Sauey, Stackner Family Foundation, Mrs. John Stedman, Wausau Insurance Company, Wildcat Foundation, Wiscold, Wisconsin Garden Club Federation, World Nature Association, and World Wildlife Fund-U.S.

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## Color Bugle

Continued from page 1

This was a gesture of thanks for Mrs. Gandhi's efforts to preserve the bird's last home in India. Today, Diane and her husband Skip are two of Florida's most active and dedicated conservationists.

Clairson International is also involved in the conservation of Florida's natural heritage. This fall the corporation plans to send a number of Diane's paintings to educational and public institutions throughout Florida, through the auspices of the Florida State Museum System. The exhibit will include descriptions of the birdlife portrayed and a plea for the public's active participation in conserving Florida's rapidly disappearing natural areas. In the near future, a series of prints from selected paintings will be offered publicly, with a portion of the proceeds donated to Florida's Nature Conservancy. The Sandhill Cranes pictured on this *Bugle's* cover will be among the paintings soon available as fine quality prints.

We offer our deepest thanks to Clairson International and to Diane Pierce for their past and continuing support of ICF. The new *Bugle* format should enhance its appeal and readability to members. We hope it will also be instrumental in enlarging our support among the general public.

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With the arrival of the color *Bugle*, we have decided to discontinue sending **crane-of-the-year** photographs to all members. We wish to thank Danny Weaver and Agri-Graphics of Cary, Illinois for generously preparing these color prints for ICF free of charge. Danny will continue to assist us with photography projects, a vital support for our education efforts. For example, he has just prepared 25 sets of a new slide show to use for training participants for the Wisconsin Crane Count.

ICF will still be sending an 8" x 10" color crane photo to each **new** member.



Siberian Cranes are photographed for the first time at the nest. Photo by Edward Nazarov.

## At the Nest

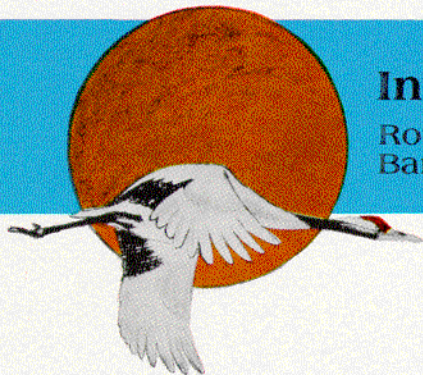
From mid May through June of 1984, our Soviet colleagues Sasha Sorokin, Yuri Markin, and Edward Nazarov camped on the taiga wilderness east of the Ob River. Here they studied the nesting biology of a pair of Siberian Cranes belonging to the west Asian flock. This flock numbers fewer than 50 birds.

The region lacked roads or navigable streams. A helicopter dropped the researchers three kilometers from the crane nest. Base camp was set up amidst a land of brown bears, lynx, and eagles.

Sasha and Yuri took turns watching the cranes from a platform high in a tree 300 meters from the nest. Edward inhabited a portable blind that he edged nearer to the cranes each day. He photographed for the first time events at the nest.

They discovered that in mid May when temperatures remained below freezing, the cranes fed mainly on cranberries frozen through the long, cold winter. As spring advanced and the wetlands thawed, the cranes ate sedge tubers, dragonfly larvae, and small fish. The female incubated about 70 percent of the time. The parents traded places at the nest six to eight times a day. Each time, even in subfreezing conditions, the eggs cooled from half a minute to three minutes. When not incubating, the male ranged up to three kilometers away, while the female seldom ventured farther than two kilometers from the nest.

The team had to leave before the eggs hatched. Nonetheless, science has new information on the natural incubation of Siberian Cranes. This data can help improve artificial incubation procedures. And Edward's photographs are a tribute to his talent and the splendor of Siberian Cranes.



## International Crane Foundation

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