MAKING TRACKS - news of the foundation

USA

American Cranes

USSR

Asian Cranes

IN THE SNOW


In June, ICF's Soviet specialists, elizabeth Alexander, travels to Moscow to meet several colleagues and discuss future cooperative projects now possible on all crane species native to Russia and the US. At the same time, Soviet co-worker, Dr. Vladimir Filatov, will be 8000 miles away on the tundra of Yakutia in eastern Siberia determining exactly when each Siberian crane pair lays its eggs. The eggs must be collected at the beginning of the fourth week of their incubation period. One egg will be collected from each of six nests. Placed in an insulated ICP egg-transport box, the precious cargo will be flown to Moscow where Elizabeth accepts the box and continues the remaining 8000 miles, a journey that brings viable eggs three-quarters of the way around the globe. In 1974 ICF and colleagues in Sweden demonstrated the feasibility of the intercontinental transport of viable cran e eggs with a 100% hatching rate. The challenge is to extend this system to Siberia, another example of the feasibility of moving eggs and animals over long distances

Breakthrough In Sexing Cranes

Male and female cranes look alike, externally at least, and, in general, have no problem picking a mate. Like other birds, the sexual organs of cranes are located inside the bird's cavity, making sexing by anatomical examination extremely difficult. But in cranes who are not blind, the sexing can be accomplished by a technique known as sexing. Unfortunately, sexing cranes is a difficult and expensive task.

Dr. Motoshige Sasaki of Hokkaido University, Japan, sexies cranes by looking at chromosome structure. Within each cell of the body--the cells that make up the organism--the chromosomes are visible. In male cranes, the chromosomes are paired, half of which are inherited from each of the bird's parents. In the female, both chromosomes of each pair look alike. Although there is great size differences between chromosome pairs, however, in female cranes, one chromosome pair is different. One of the chromosomes of this odd pair is about one third the size of its mate. This unmatched pair of chromosomes contains the genetic material that determines sex. Presence of the odd chromosome indicates the animal is female; conversely, a pair of large and identically shaped chromosomes indicate male gender. Dr. Sasaki's technique involves two steps. First, the chromosomes are separated and photographed. Second, the photograph is analyzed to determine the sex of the bird.

(Continued on page 4)
Cold Cranes?

WISCONSIN HASN'T HAD SUCH COLD IN A CENTURY. NIGHT-TIME LOWS DIP INTO THE 30 DEGREES PARENTHETE FOR WEEKS AT A TIME AND WIND CHILLS HAVE BEEN DOWN TO -74 DEGREES. NO WONDER THE MOST POPULAR QUESTION ON ICF TOURS CONCERNS OUR MANAGEMENT OF CRANES AND THE CRANES MANAGEMENT OF THEMSELVES IN THE COLD. AFTER ALL, OUR LOCAL SANDHILL CRANES HEAD SOUTH TO WARMER CLIMES IN FLORIDA, A PATTERN REPEATED BY THEIR RELATIVES AROUND THE WORLD. OTHER SPECIES LIVE IN THE TROPICS ALL YEAR. HOW THEN CAN WE RIGHTLY KEEP NOT ONLY THE NORTHERN CRANES BUT THEIR TROPICAL COUSINS AT 45 DEGREES NORTH LATITUDE THROUGH WISCONSIN'S LONG, COLD WINTER?

Surprisingly, most cranes are remarkably cold-hardy, and given the benefit of a windbreak, food, and clean water they take whatever Mother Nature inflicts in Wisconsin each November through March. But the story of the crane's adaptability to winter is a rather recent phenomenon in crane history, a character that evolved with the onset of cold some 10 million years ago contrasted to the appearance of cranes 60 million years back.

Understanding this aspect of crane biology rests upon a knowledge of the differences between the two major groups of cranes: the Crowed cranes (those loose-plumed, bare-faced, and top-knotted beauties from Africa) and the "Typical" cranes (more compact-plumbed cranes including our North American Sandhills and Whoopers in addition to 11 other species). Besides the obvious differences in external anatomy between the Crowed cranes and the Typical cranes, there is a pronounced physiological difference: Crowed cranes can't take cold nearly as well as the Typical cranes. Granted, Crowed cranes are birds of African savannas where tropical conditions are maintained year-round while Typical cranes are scattered from cold mountain plateaus to the arctic wildernesses. However, prior to the onset of cold, Crowed cranes were found across the northern continents and not until recent millennia did the Typical cranes appear in the fossil record.

What happened? Why did Crowed cranes lose ground and only survive in Africa? What led to the evolution of the Typical cranes?

The answer to the riddle is found in the weather. From times untold until about 10 million years back, the earth was warmer and organisms were more restricted to the tropics - Crowed cranes to rhinos - benefited by a much wider distribution. For reasons not well understood the world then became progressively cooler in recent ages. The onset of the cold precipitated the extinction of thirty-one Crowed crane species on the northern continents and the evolution of the cold-hardy Typical cranes, apparently from Crowed crane ancestors. Although glaciers grew and slid down from the north and up from the south, tropical conditions were maintained along the equatorial belt including a large section of central Africa. The Crowed cranes survived the Ice Age on the African savannas where they remain to this day, the living fossils of the crane family.

ICF currently houses about 100 cranes of 14 (Continued on page 3)

SEASONS GREETINGS FROM
1977 WINTER COUNTS

In autumn, cranes abandon their breeding territories, congregate in flocks and travel to their winter haunts sometimes as many as 5000 miles away. Because each crane pair defends a huge area of wetland as a breeding territory, crane populations are scattered over wide regions in spring and summer and are difficult to count. However, in winter, cranes usually congregate in flocks of restricted areas and are easily counted.

This map indicates the location and number of cranes counted this winter in United States, India, The Republic of Korea and Japan. Unfortunately we have no information on populations wintering in Romo, Laos, Vietnam, The People's Republic of China, and the People's Democratic Republic of Korea. 72(15) means there is a total population of 72 birds of which 15 are chicks.

(Continued from page 3)

A 1975 — hatched (white) and a 1976 — hatched (brown) Whooping crane pass each other on their winter sorghum field at the Bosque del Apache National Wildlife Refuge, New Mexico, amidst the ranks of Sandhill cranes, the species that fastened the Whoopers on Grey's Lake National Wildlife Refuge, Idaho.

shelter that warms her joints when the mercury lowers. No wonder Ueno's and Lulu's breeding success is only possible through artificial insemination! Crooked toes are another problem. Cranes have thick paddles of scales on the base of each toe that insulates the fleshly upper and inner regions of the toes against the cold ground. If a toe is bent with the padded surface facing to the side rather than down, the sensitive upper region of the toe touches the ground and, lacking the insulation of the pads, the toe freezes. Cranes with crooked toes must be kept on bedding of deep dry wood shavings that provide insulation from the substratum. Needless to say, our only cranes with toe problems are our newest cranes, Tex and Tony, the Whoopers, who each have at least one crooked toe — abnormalities since chickhood.

Old cranes are stiffer in cold. But how old is old for a crane? A Siberian crane at the National Zoo in Washington survived to be 64 and specimens in Japanese collections are reputed to have lived into their eighties. Case, a snowy and aggressive male White Naped crane was imported from Japan as an adult in 1946 but still looks young. Granny, his mate, is another matter. We don't know Granny's age but she must be well on in years for she walks stiffly, her former reddish face is partially covered with gray feathers, her neck is starting to grow crooked and she insists on remaining in her shelter through the cold. Although Granny certainly qualifies for the geriatrics clinic, she faithfully lays eggs each spring and is artificially inseminated every three days from Casey. Her eggs are much smaller than normal-sized White Naped eggs and to our surprise one hatched last year. Charle, the product of Casey, Granny and A.J. is now a beautiful addition to the northbreeder flock and unlike his aged mother has no problem with the cold.

But be they young or old, tropical or Arctic, crowned or combed, all cranes have a common denominator in their winter food preference; they

(Continued on page 4)
Breakthrough on Sexing... (Continued from page 1)

from female cranes when compared with males from the same species. Although there is some variation among different species, the chromosome set (or sex chromosome) of a crane (millions of a gram of DNA), whereas the male chromosome set has about 5 to 6% more of this genetic material. Because these differences are near the limits of precise measuring with his instruments, Kelin feels that the sexing is a remarkably close estimate of the sex of the crane. However, he notes, ‘when working with an “unknown” juvenile crane, this means that wildlife researchers now can collect a single drop of crane blood, smear it over a glass slide, and send it to Dr. Bascic for a quick, simple, and reasonably reliable sexing. Dr. Bascic’s research is an important and practical contribution to man’s knowledge of who’s in the crane world.

Tracks Made... (Continued from page 2)

reestablish Siberian cranes as winter visitors to formerly Perlia. Our rare Hooded cranes took the stage by producing the first of their species ever raised in captivity. ICF’s first student, Karen Van Campen, finished her Master of Science degree its doctoral thesis on the behavior of Sandhill Cranes. Hundreds of people toured ICF headquarters and the membership list topped 1000 in October with membership branches operating in Japan, Russia, and Sweden and plans are underway to open an ICF-European Center in cooperation with Vogelpark Walобще, West Germany. March 20, 1977, ICF celebrates its fourtieth birthday. We are flled. Smooth Eight is another milestone.

This year we hope to hatch 50 chicks but only have rearing facilities for 12. A new HATCH-INC AND REARING FACILITY is needed. Price $170,000.00 This spring and summer ICF reaches the masses through several media packages now in the works. Publicity means thousands of people are requesting tours. Crowds upset the breeding cranes and so a PUBLIC EDUCATION CENTER must be built. Price $250,000.00 We have many young cranes that must be segregated by pairs from the non-breeder flock and placed in private, breeding pens. But our breeding pens are filled. The answer is another BREEDING UNIT to house 30 pairs. Price $50,000.00. Finally there are the day-to-day operating expenses that come to over $50,000 annually and increasing as ICF and inflation grow. In summary, ICF headquarters needs about one quarter of a million dollars in 1977, a scary yet challenging figure. Reflecting upon the value of ICF goals, evaluating our progress, and recognizing the responsibilities to the current and future responsibilities to cranes and their habitats, fills us with untainted determination to fly onward.

Finally our thoughts turn to the people that make ICF tick. They are you, the faithful members. ICF’s success is due entirely to you and it depends on the labor and resources of us all. The world’s wildfowl and their crane populations are deteriorating at an alarming rate. Considering the earth’s human population is expected to double by the year 2000, the prognosis for wilderness and wildlife is bleak. We all must work now to assure a quality environment for man and birds for generations to come. What better indicator of a pristine world than a white crane inverting blue sky over a clean earth? ICF must grow.

Cold Cranes... (Continued from page 3)

are comminuted and actually prefer corn to their traditional crustacean diet. Cranes also convert the starches and fats, molecules that release large quantities of heat when broken down in digestion, energy that helps the crane combat the elements. Corn also helps wild-caught cranes tame down quickly in captivity. The lack of corn (and not negative fear) element of the captive environment. Tame cranes breed more readily in captivity than wild birds. Corn indirectly improves the reproductive performance of wild-caught birds.

Another positive part of winter is that the cold sanitizes ICF. During the warm months diseases accumulate in the soil of the crane pens but many of these same pathogens are killed by cold weather. Coincidentally we have clamped on to the infection transmitted from contaminated soil after the egg is laid. Winter helps.

But winter, 1977, will be gone in a few weeks and the corn bins closed until November. Spring birds will be heading for the wild Swing mid-March returning to their nesting grounds on wetlands near ICF. We also look forward to the sight and sound of ICF’s Cranes of the World greets the new breeding season with reproductive zest. In addition to living up to the wild crane standards of the past, the ICF team will continue to survive the long cold winter with the help of pig gavage, slaving, vitamins, corn and uneading care.

Photo by M. Yoshi