

and will most certainly continue to manifest themselves. These patterns it is hoped will give clues as to the nature of the behavior, e.g., whether it is innate, learned, or some of both. With this knowledge we should be able to predict success of changes in techniques to fit circumstances, re-establishment of lost populations, along with a myriad of other management problems.

We are interested in exploring the possibility of artificial stimulation--light, temperature, hormones, etc. The latter will involve the solution of some difficult problems in endocrinology. We are working on learning a technique of testing for gametogenesis. Given this tool we hope to eliminate some dark areas such as the relationship of gametogenesis to the molt and to the behavior pattern. Artificial insemination possibilities are being explored and there is reason to believe that this may be a feasible answer to the problem of infertile eggs. There is the problem of adequate but inexpensive quarters; we hope to be able to recommend facilities that are adequate for the program to be followed. This will need to be based on experience and it may take a bit of time.

These are a few of the problems to be solved. There are of course many others and more will surely crop up. We feel that significant progress has been made.

One of the most attractive potentialities of successful breeding technique is the re-establishment of lost populations. That this is capable of being done seems to us most probable, particularly in view of Joe Simonyi's experience (see Raptor Research News 1(1):4, Jan. 1967). That all of our goals are attainable we certainly believe. All we must have is time and resources. The greater the resources the shorter the time needed, and the shorter the time given the greater the need for resources.

Though the percentage of the human population who really care may be relatively small, the dedication of those who do will see this project through to a successful conclusion. If we need further justification, it appears that all life on the planet is in some way interdependent and pieces to our puzzle will fit in others. Our goal should be to add to the fullness of life through knowledge and understanding. (Editorial by Don Hunter).

#### BREEDING PROJECTS: News and Questions

Bald Eagle. Daniel P. Mannix 4th, Sunnyhill Farm, R.D. #2, Malvern, Penna., 19355, writes the following in a recent letter to us.

"I have an American bald eagle, female, 30 years old, who has laid two eggs every year for the last five years. I have just obtained a gray headed sea eagle from Russia, four years old and a male. Neither has ever been exposed to DDT and as they are both *Haliaeetus* I hope to mate them. Do you know of anyone who has successfully bred eagles in captivity?"

Golden Eagle. Dr. Frances Hammerstrom reports that her Golden Eagle with her help constructed a nest last year and laid two eggs. She is considering the possibility of artificial insemination and inquires as to the possibility of obtaining viable Golden Eagle semen. It is too late for this year but she would like to make plans for next year. Address: Plainfield, Wisconsin.

Breeding of Immatures. An interesting note by John Flavin:

"I have some notes on breeding by immature hawks which may interest you. I had a young female kestrel in Denver which I released in March of her first year. She subsequently raised a family of five. She had five impeded primaries on one wing and TEN on the other. She went through a complete molt by September. Incidentally, she had been in a cage for three months before I obtained her and didn't learn to fly until mid-September.

"In California I found a red-tail nest at which the male bird was in immature plumage. They hatched three young.

"There is a well known and beautiful Fuertes painting of peregrines in "BIRDS OF AMERICA" which depicts an immature male and a haggard female raising two young. Fuertes was deeply interested in birds of prey, and I believe a falconer. It is unlikely that he would paint such a scene if he didn't have first hand knowledge that it had actually taken place."

Beebe's Peregrine Falcon. Frank Beebe reports that his pair of Peregrines, which produced three infertile eggs last year, have this year laid an initial clutch of four eggs. These were removed and placed in an incubator. After a period of incubation these too proved to be infertile. At last report a second set of eggs was started. There have been indications of increased sexual activity between the birds and hopes are high that this second set will be fertile. Some observations last year led Beebe to suspect that the male may not have started his breeding cycle as soon as the falcon (female). This is one reason for programming this year's trial to remove the first set with the hope of recycling on the part of the female.

Austing's Red-tailed Hawks. Austing writes:

"My red-tails were a bit late this year, first egg March 21, second March 24. Same procedures as previous years so nothing new to report. I'm hoping both eggs are fertile and produce a pair, in which case I'll keep them and see what a brother-sister team might produce."

Kendall's Prairie Falcons. On March 22 the female Prairie Falcon of the pair in Henry Kendall's breeding project laid the first of five eggs. This is an eyass pair; the male is 3 years old and the female, 5. More will be written on these birds in a later issue when more can be reported. Kendall has kept detailed notes on the care and handling of his birds.