

month. These will be duplicated, assembled, and copies sent out to all cooperators and to those members who write us that they wish to be on this mailing list. Any material received after the deadline will be saved for the next month. Before each Raptor Research News comes out the preceding material will be abstracted and reported in the News. It is felt that such an abstract will probably take care of most people's needs and the R.B.P.I.E. will retain its necessary informality.

We are fortunate to have the cooperation of Tom Dunstan, a graduate student working in raptor research at the University of South Dakota, who will take care of the mechanics of the system.

Workers already involved in the breeding project will receive duplicator masters and requests to submit monthly comments. If you are beginning a breeding project, please request masters from Mr. Tom Dunstan, Zoology Department, University of South Dakota, Vermillion, S. Dak. 57069. For those who feel that the quarterly abstract of information appearing in the News is insufficient, please send a card asking to be put on the mailing list for the B.P.I.E. to Mr. Don Hunter, Centerville, S. Dak. 57014.

#### BREEDING PROJECTS

##### Purpose, Problems, Progress, and Potentialities

For thousands of years man has formed associations with birds of prey. He has identified himself symbolically and emblematically with them and their observed or imagined prowess. He has employed them as hunting allies, and even as military allies but never has he developed a technique of inducing them to reproduce regularly in captivity. Perhaps he recognized no necessity to try very hard. After all many were considered in competition with hunting and farming man and were doing well in spite of persistent persecution. But now some are not doing so well in spite of protection. It is hoped that there are yet time enough and numbers enough to allow the acquisition of an understanding of the biology, ecology, and ethology of these threatened species sufficient, at least temporarily, to stave off extinction. The efforts necessary to achieve this goal are worthwhile to some of us who have the appreciation and motivation and hopefully the understanding of the problems and what it will take to solve them. The response by very knowledgeable persons to our invitation to participate in Raptor Research Foundation is a source of considerable personal satisfaction.

The captivity breeding projects are receiving high priority as it is felt that success in developing these techniques will provide, among other things, a most useful research tool. An important byproduct, we think, will turn out to be the uncovering of problems both biological and psychological that might otherwise go unnoticed until too late. To equate captivity behavior with wild behavior is certainly dangerous since behavior is to some degree at least related to environment. However, patterns have

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?"