

St. Louis Zoo for the Records

RECORD KEEPING AND ANALYSIS; ITS IMPORTANCE AND APPLICATION TO AVICULTURE

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St. Louis Zoo, Main Entrance to Bird House

Traditionally, man has approached aviculture as an avocation and a science. He repeatedly matches his abilities and techniques with those of nature in an effort to obtain the most desired and successful results — baby birds. However, the total number of progeny reared can often give a false representation of success and, in turn, could provide an inaccurate assessment of technique. To obtain a true evaluation of a propagation program, the processes of monitoring and record keeping must be employed. The procedures described here have been in use at the St. Louis Zoological Park for the past three years and serve as an invaluable tool in the reproductive management of its bird collection.

Forced-air incubators are utilized by the bird department, and periodic checks are made to verify that these units are functioning properly. Clipboards attached to each unit carry a record sheet by which that unit's performance is monitored. This form consists of columns for recording the date, temperature, humidity and any pertinent remarks. Space is also allocated for initialing the designated times of day the unit is checked. Any malfunction, whether frequent or infrequent, will become apparent through the periodic review of this form. Operation problems often have a direct relationship to poor embryonic growth.

Each incubation unit also has a number of accompanying egg data sheets on which information pertaining to each is recorded. The heading of this form designates both the unit and shelf number where the eggs are located. The sheet itself contains space for recording the following: egg number, date incubated, date due (if known), date hatched, size, weight and species (if known). If an egg hatches properly, the hatching date is noted in the "date hatched" column. However, if it fails to hatch, a designated code is used: "INF", infertile; "ED", embryo died within the period up to three days of due date; "DBH", died before hatching, within three days prior to hatching date; and "A" to indicate added. Eggs missing from nests are recorded as "infertile".

This final analysis, of course entails opening each egg to determine its status. The accumulation of size and weight measurements can have academic value in addition to pointing out physiological abnormalities in a female's ability to produce eggs. Data on incubation periods also adds to our knowledge of a particular species or circumstance.

After all this information has been recorded on the egg sheet, it is separated and transferred, by species, to a species

Photos by Steve Wylie

record sheet. This record represents a summation of what has transpired in the reproduction of a particular species (not necessarily a pair) in a given year. The data listed on this sheet is presented in basically the same manner as that on the egg data sheet; however, the "date due" column is omitted and the "species" column is replaced by one for "remarks". This sheet is also used for those species that are not artificially incubated. In order to accomplish this, however, it is necessary to monitor the natural incubation process. Eggs are not generally numbered in this instance, nor are they usually weighed or measured. Each situation dictates what information can be accumulated. It is from this sheet that the final tabulations are made for the annual report.

The results appearing in the annual report consist of a total number of eggs laid, fertile eggs, eggs hatched and the number of birds reared. Percentage figures on fertility, fertile eggs hatched and birds hatched and reared are calculated from those tabulations. Egg annual report page is headed by the properly designated avian order, and each sheet allows space for figuring the statistics of five species. Percentages, other than those previously



The Open Flight Exhibit

#3
INCUBATOR RECORD SHEET

Date	Temperature	Humidity	8:00	12:00	4:00	Remarks
6/17/76	99.2-99.3/4	86°	SW	BR	WC	
6/18/76	" "	"	SW	WC	BR	
6/19/76	" "	"	BR	SD	SW	
6/20/76	99.3/4-100°	"	WC	BR	SD	
6/21/76	99.2-99.3/4	65°	SW	SW	BR	Added Water
6/22/76	" "	86°	WC	BR	WC	
6/23/76	" "	"	BR	SD		
6/24/76	98-98.1/4	"	SD	SW		

INCUBATOR #3 (Shelf B)

Egg Number	Date Laid	Date Incubated	Date Due	Date Hatched	Size	Weight	Species
1	6/2/76	6/18/76	7/6/76	H	36x 26.5mm	14 gm	Bamboo Partridge
2	6/18/76	6/18/76	7/18/76	7/19/76	57.1x 41.2mm	56.1 gm	Satyr Tragopan
3	6/29/76	6/21/76	7/19/76	7/18/76	26.3x 26.4mm	14.2 gm	Spurwing Plover
4	6/21/76	6/21/76	7/9/76	INF	33.8x 26.6mm	13 gm	Bamboo Partridge
		6/22/76	7/16/76	7/17/76	65x 58.5mm	81.3 gm	Malay Argus
		6/27/76	7/27/76	ED	57.9x 42.9	60.1 gm	Satyr Tragopan

SPECIES Satyr Tragopan

Egg Number	Date Laid	Date Incubated	Date Hatched	Size	Weight	Remarks
2 (3B)	6/18/76	6/18/76	7/19/76	57.1x 41.5	56.1 gm	
6 (3B)	6/25/76	6/27/76	ED	57.9x 42.9	60.1 gm	
4 (3C)	6/27/76	6/27/76	7/26/76	60.1x 44.2	69.2 gm	crooked right foot
1 (3A)	7/4/76	7/5/76	8/5/76	58.3x 42.6	52.9 gm	
8 (3B)	7/6/76	7/6/76	DBH	55.5x 42.4	55.2 gm	

Galliformes

Bamboo Partridge

Total number of eggs laid	8
Number of fertile eggs	4
Number of eggs hatched	0
% of fertile eggs hatched	0
Number of birds reared	0
% of birds hatched and reared	0

Malay Argus

Total number of eggs laid	3
Number of fertile eggs	3
Number of eggs hatched	3
% of fertile eggs hatched	100%
Number of birds reared	2
% of birds hatched and reared	66.6%

Gray Peacock Pheasant

Total number of eggs laid	7
Number of fertile eggs	3
Number of eggs hatched	1
% of fertile eggs hatched	33.3%
Number of birds reared	1
% of birds hatched and reared	100%

Satur Tragopan

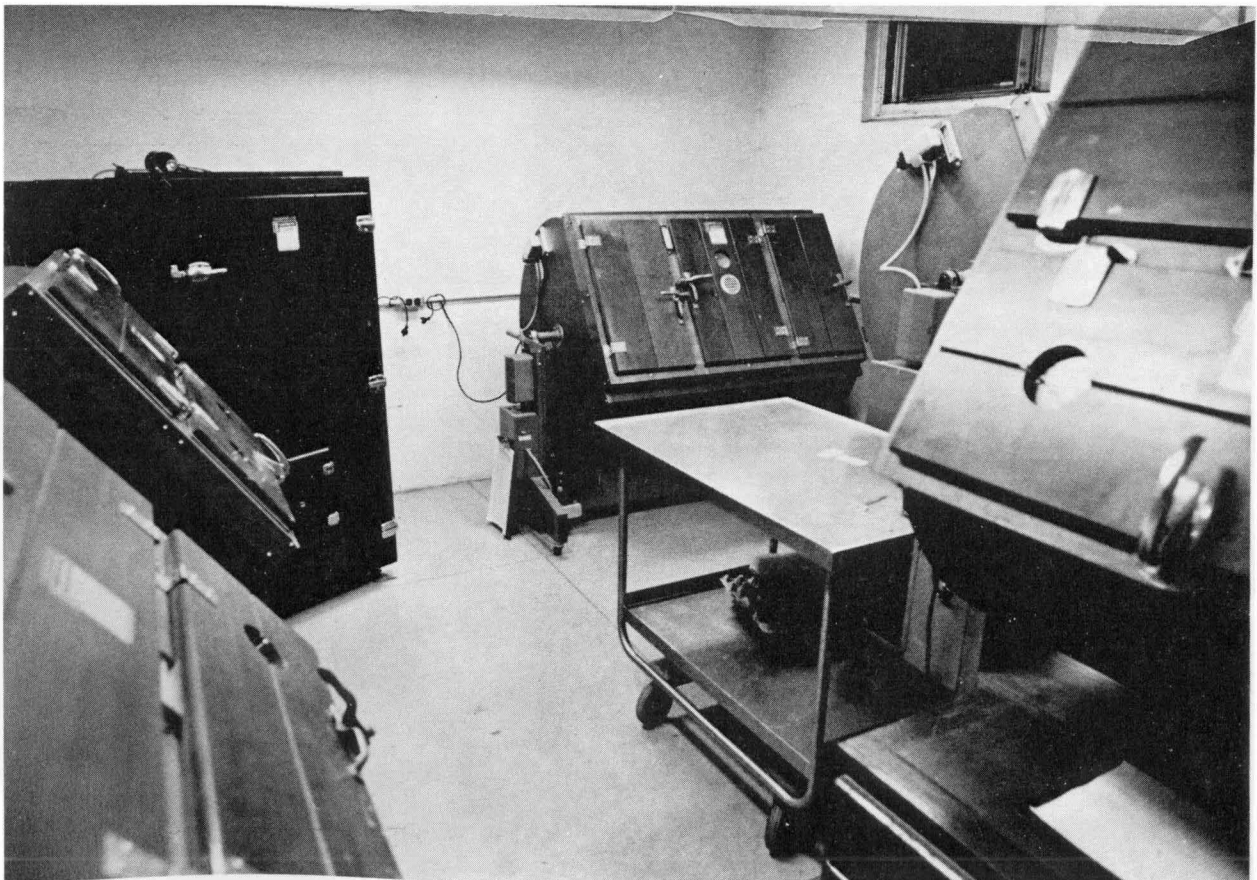
Total number of eggs laid	5
Number of fertile eggs	5
Number of eggs hatched	3
% of fertile eggs hatched	60%
Number of birds reared	1
% of birds hatched and reared	33.3%

mentioned, can be tabulated to illustrate the total reproductive performance of the bird collection.

Even though this system may seem quite confusing, its application to a working program is simple and easily interpreted. For instance, if records show that a particular pair or group of birds has consistently exhibited a low fertility rate over a two or three-year period, it can generally be assumed that a problem exists. If a change in diet, nesting facilities, incubation procedures, etc., is made, or if there is a change of mates, then the reports will reflect the success or failure of those adjustments. By checking the status of each egg that fails to hatch, whether naturally or artificially incubated, it is possible to more closely determine if problems with technique exist. This is most certainly true for those eggs that are artificially incubated.

Results are too often left to memory; and when we discuss our successes with colleagues, we tend to forget the facts and thus project an inaccurate picture. If we hatched far more than we reared, then we shouldn't boast about just what was reared. We owe it to ourselves, to aviculture, and, even more so, to conservation to establish and maintain an accurate picture of just how well we are doing.

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