

Estimably number of rodents

Pre Lincoln Peterson index. → estimate of numbers from trapping sites.

Night 1 - 50 traps = 3 animals (mark)
" 2 - " = 5 animals (3 mark + 2)

$$n : t :: m : t$$

e.g. 3 : x :: 3 : 5.

x = total population.

100 traps / 1 ha. each grid square = 10m x 10m

or 100 traps at 10m interval = 10000 m²

Onions are ^{good} best bait

If homogenous = 5 grids / transect selected randomly in study sites

(X) Davis — Animal census techniques.



Biologically significant - Once a month.
5 transects of 100 traps each.

Mark individuals with ear clips.

Forestry supply company. — missisipi

Can check preference of rodents from raptom by
picking up pellets ~~one~~ of raptom. Look for good
perching sites.

Frankel O.H. & Soule M.E. 1981. Conservation and evolution. Cambridge Univ. Press. Cambridge.

① Many examples of humans hunting a species to extinction e.g. passenger pigeon (*Ectopistes migratorius*) the great auk (*Alca impennis*), the carolina parakeet (*Conuropsis carolinensis*), the dodo (*Raphus cucullatus*). Five arms have been the choice in those very recent extinctions.

② of the 58 island extinctions of full species man's hunting is responsible to 11.

Captive breeding

① Captive propagation is the last gasp attempt to save a vanishing and unique expression of biological evolution, and it apparently fulfills an ethical or psychological need shared by many people.

12. all land is potentially a nature

① The continued existence of ecosystems or communities should be the aim of nature conservation. &

② ~~two~~ obvious strategies that ~~should~~ ^{one} work towards this end, ~~is~~ a reduction or limitation of human related exploitations, or ~~a~~ stringently controlled human exploitation of natural resources, over larger areas. ~~our~~ ~~smaller~~ Besides large scale wider geographical action that will strive towards a more balanced

Nature conservation and thereby species conservation cannot be restricted to nature reserves alone - all ^{of} India is habitat for wildlife and ~~there~~ any planning should keep this in mind. ~~A creation of one~~ ~~the~~ Creation of a nature reserve - ^{which} In an Indian context - ^{is only} a tiny island, does not mean that all other available land is to be used ^{over exploited.} ~~without~~ ~~consideration~~ of conservation requirements.

~~There are~~ ^{two} ~~primary~~ ~~strategies~~ ~~are~~ ~~that~~ ~~focus~~ ~~at~~ ~~that~~ ~~on~~ ~~smaller~~ ~~geo.~~ ~~can~~ ~~work~~ ~~towards~~ ~~the~~ ~~goal~~ ~~of~~ ~~a~~ ~~a~~ ~~broad~~ ~~spectrum~~ ~~of~~ ~~geographically~~ ~~more~~ ~~balanced~~

Territories.

Discussion.

Aggressive behaviour appears to be an important element of initial territory establishment in many birds.

¹⁹ Territory is basically concerned with sex and the reproductive functions, and territorialism is a device to restrict dysgenic fighting while permitting healthy competition (Armstrong 1956).

In most species of birds, the possession of a territory is ~~an~~ ^a ~~important~~ prerequisite ^{before an} ~~can~~ mate (individual, usually male, can mate successfully).

Amongst promiscuous species, the territorial aspect of the breeding behaviour is of particular interest as these areas are primarily of value as display sites. Based on the distribution and clustering of territories, the type of promiscuous breeding system that the species follows can be defined (Bradbury 1981).

while the ~~not~~ function of a territory, ^{their} ~~its~~ size and distribution is more a function of the density of ~~the~~ species.

Foraging ;

Maintenance

Resting

disturbed

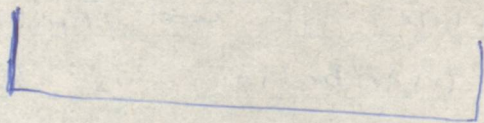
Agonistic

courtship

STCA

NI

FL. Dis.



| 1985 | GHT |
|------|----------|
| 1 | 0.760561 |
| 2 | 1.054687 |
| 3 | 1.462558 |
| 4 | 2.028163 |
| 5 | 2.8125 |
| 6 | 3.900157 |
| 7 | 5.408435 |
| 8 | 7.5 |
| 9 | 10.40041 |
| 10 | 14.42249 |
| 11 | 20 |
| 12 | 23.02172 |
| 13 | 26.5 |
| 14 | 41 |
| 15 | 56 |

| 1986 | GHT |
|------|----------|
| 1 | 1.058764 |
| 2 | 1.455173 |
| 3 | 2 |
| 4 | 4 |
| 5 | 4.6 |
| 6 | 8 |
| 7 | 10.6 |
| 8 | 12 |
| 9 | 15.6 |
| 10 | 18.5 |
| 11 | 26 |
| 12 | 35 |
| 13 | 43.06971 |
| 14 | 53 |
| 15 | 65 |
| 16 | 73 |

| 1987 | GHT |
|------|----------|
| 1 | 0.493302 |
| 2 | 0.668954 |
| 3 | 0.907150 |
| 4 | 1.230162 |
| 5 | 1.668190 |
| 6 | 2.262188 |
| 7 | 3.067692 |
| 8 | 4.160015 |
| 9 | 5.253176 |
| 10 | 7.123691 |
| 11 | 9.660246 |
| 12 | 13.1 |
| 13 | 22 |
| 14 | 27.32071 |
| 15 | 34.5 |
| 16 | 44.3 |

| 1988 | GHT |
|------|----------|
| 1 | 1.041321 |
| 2 | 1.683478 |
| 3 | 2.721636 |
| 4 | 4.4 |
| 5 | 8 |
| 6 | 11.5 |
| 7 | 15.76071 |
| 8 | 21.6 |
| 9 | 30 |
| 10 | 43.12771 |
| 11 | 62 |
| 12 | 75 |
| 13 | 85.51315 |
| 14 | 97.5 |
| 15 | 101.1805 |
| 16 | 105 |

4
 18001.5
 18003.2 11
 18009.0 30
 180014.0

$\frac{41}{12.5}$ 3

2
 18005.0 71
 18002.0

$\frac{71}{7}$ 4

B
 18003.3
 18007.5 17

$\frac{17}{4.2}$ 0

~~1788.6~~
 17792.3
 17688.6

 13.7

Fox 2.12
 Chick 4.53
 T.E 2.48.

52

17855.5
 17848.3

 7.2

640
 450
 375
 400
 1400
 1100
 600
 250
 235
 422
 700
 260
 40
 70
 250
 450
 300
 400
 530
 400
 500

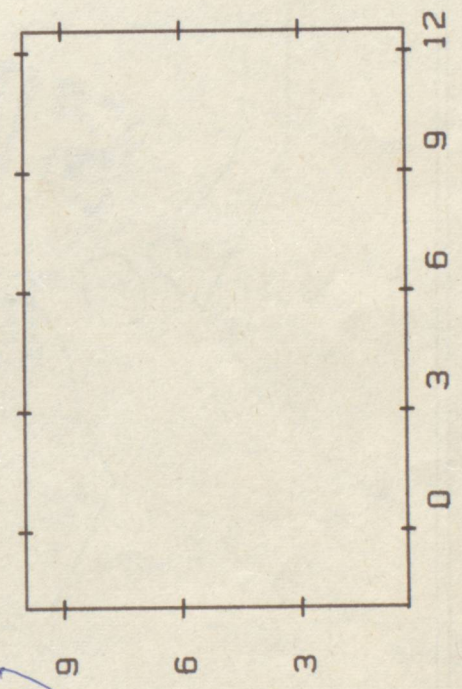
24°C



5

1.323
12.22

1.323.
12.323
121.323



V_2

$V \wedge PV \quad 2 \wedge PV$

4^2

$\frac{4 \wedge PT \quad 2 \wedge PT}{4^2}$

1 2 3 4 5 6 7 8 9

R S

1 2 3 4 5 6 7 8 9

Alt 248 °C

Hand 5 vbl

Hand 5 vbl

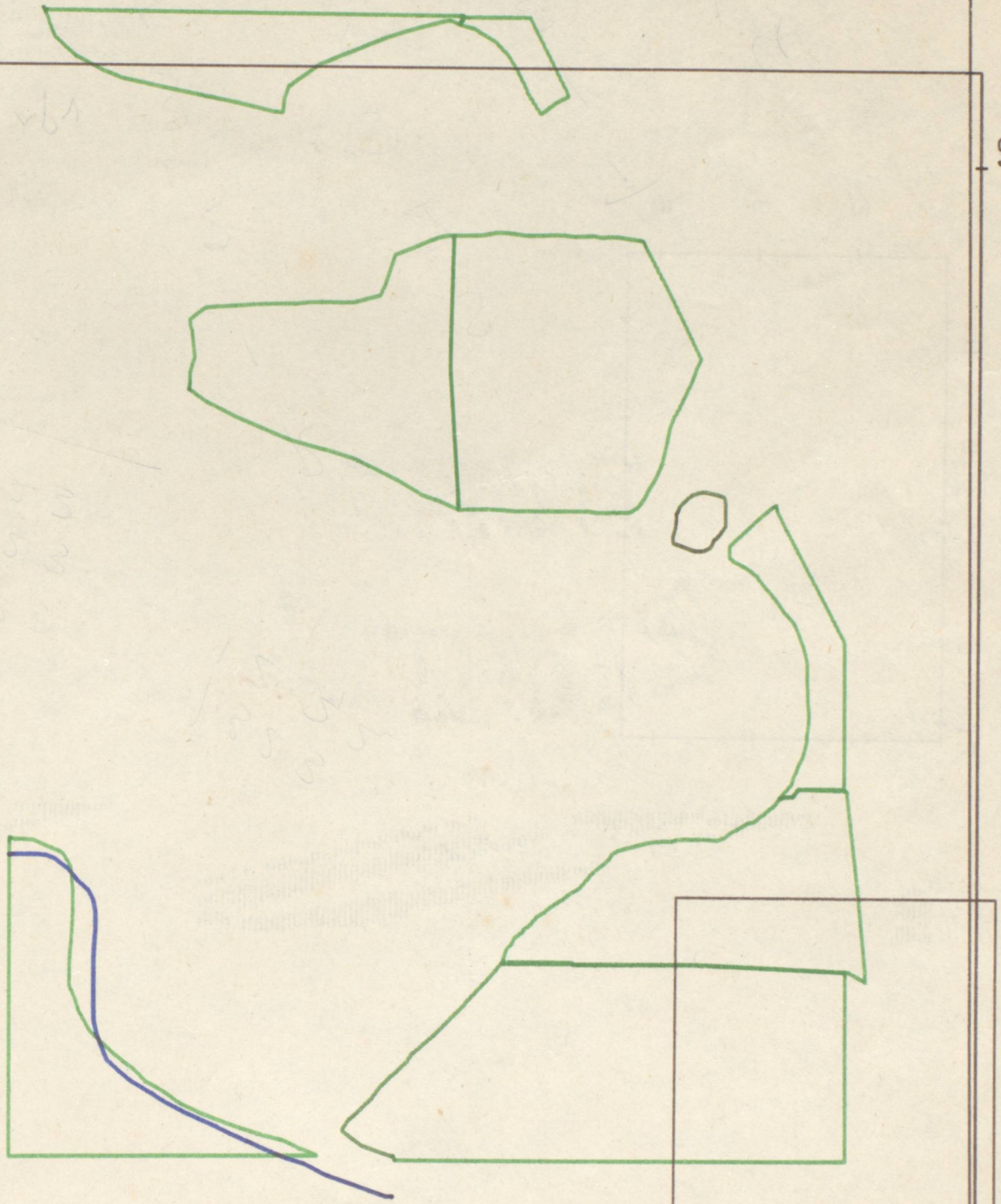
Hand 5 vbl

Hand 5 vbl

Hand 5 vbl

Hand 5 vbl

Hand 5 vbl



10

Summary table of Dharmakumarsinghi's ringing data.

| Year | Nos. Ringed | Nos. recov. (Year) | Same Gen. area | Same vidi | Other. |
|--------|-------------|----------------------------------|----------------|-----------|------------------|
| 1943 | 100 | - | - | - | - |
| 1944 | 99 | 2 (1943) | 4 0 | 0 | 2 |
| 1945 | 111 | 0 | 0 | 0 | 0 |
| 1946 | 100 | 2 (1944) 1 (1945) | 2 0 | 1 | 2 0 2 |
| 1947 | 67 | 1 (1944) 1 (1945) 7 (1946) | | 5 | 4 |
| 1949 | 11 | 1 (1945) 7 (1947) | 0 | 0 | 2 |
| 1950 | 0 | 1 (1949) | 0 | 0 | 1 |
| Totals | 488 | 17 | | 6 | 17 11 |

Total birds 489
488 ♂
1 ♀

1.2% caught at same vidi
2.25% caught away from old site.
Recovery 3.48%

THE ECOLOGY OF THE LESSER FLORICAN SYPHEOTIDES INDICA
IN THE SAILANA KHARMOR (FLORICAN) SANCTUARY

By

Ravi Sankaran
Bombay Natural History Society

A B S T R A C T

The lesser florican, one of the endangered bustards of India, is known to visit certain types of grasslands in Western Madhya Pradesh, Eastern Rajasthan and Gujarat and their movements are determined by the precipitation and pattern of rainfall (Baker 1921, Dharmakumarsinhji 1950). Ali & Ripley (1969) stated that they disperse over vast tracts of country in years of good rainfall.

While studies were started in 1984 this paper covers the monsoons of 1985 and 1986. Sailana, 18 km north of Ratlam, was selected as our first field station. We examined the factors related to the floricans immigration into their breeding grounds, the establishment of territories, territorial behaviour, displays and nesting.

In 1985 due to a poor monsoon only five male floricans were seen in the study area while in 1986, a year of good rainfall, 13 males were seen in the same area. We counted about 50 males in grasslands in and near the Sailana Kharmor Sanctuary.

We found that the floricans arrive at our study area with the first heavy showers. Thereafter, with every spell of heavy rains, there were additions to the florican population. Relationships between males before, during and after the formation of territories were studied. Special emphasis was given to the courtship display of the male florican. Time budget studies were also undertaken. The incubation period was determined. Distances between nesting females and territories of males were recorded. Studies to evolve management plans are still underway.

12 days.

First second

| | | |
|------|----|----|
| 1984 | 30 | 24 |
| 1985 | 31 | 17 |
| 1986 | 30 | 6 |
| 1987 | 10 | 12 |
| 1988 | 28 | 14 |
| 1989 | 23 | 21 |

$$E = \frac{\text{Tot PC} \times \text{Tot Dis}}{\text{Time}} = 76.9.$$

$$\frac{(0 - E)^2}{E}$$

51636

$$\frac{(223 - 335)^2}{335}$$

Tot PC = 1550

Tot dis = 427

Tot Dis wpc = 223

$$\frac{1550 \times 427}{1550 + 427} = \frac{661850}{1977} = 335 - 112$$

37.5

334.77491

335

1977

12569



Bombay Natural History Society

HORNBILL HOUSE, (MUSEUM COMPOUND),
SHAHEED BHAGAT SINGH ROAD,
BOMBAY 400 023

Ref: 1552/85/

6th April 1985

Dear

As you are aware, the Bombay Natural History Society has an ongoing project on Endangered Species of Indian fauna financed by the Fish & Wildlife Service of the USA and sponsored by the Wildlife Directorate of the Dept. of Environment, Government of India.

We have been working on the Great Indian Bustard since 1981. We have now started our studies on the Lesser and Bengal Floricans and have been working in the habitats of Lesser Florican in Madhya Pradesh along with surveys in Gujarat, Rajasthan, Andhra Pradesh and Karnataka.

The Bengal Florican has been reported in the terai belt in U P, Bihar, Bengal and Assam. Our field researchers, Dr. A R Rahmani, Galden & Usha Bhutia and Ravi Shankar, will be surveying the known Bengal Florican habitats in your state commencing from April-May. Any information or assistance you can provide to them in this regard will be highly appreciated. They will try contacting you in the course of their field survey and I look forward to receiving your help in this matter.

I am addressing this letter to you at the instance of Dr. Salim Ali who is the Principal Investigator for this project.

Yours faithfully,

J C Daniel
Curator

UB/sa.

44s.

4
9.5

$$100,000 \frac{P \text{ M R}}{100}$$

$$\begin{array}{r} \times 9.2 \\ \hline 190 \\ 8550 \\ \hline 8740 \end{array}$$

$$\frac{100,000 \times 12}{199} = 12000$$

$$\begin{array}{r} \times 4 \\ \hline 36,000 \end{array}$$

$$\begin{array}{r} 112000 \\ \times 12 \\ \hline 2240 \\ 11200 \\ \hline 13440 \end{array}$$

1,50000

$$\begin{array}{r} 112000 \\ 1344 \\ \hline 113344 \end{array}$$

ES
A

GTC 7276

$$\begin{array}{r} 18529 \\ 278 \\ \hline 18807 \end{array}$$

1 mile = ~~1.6 km~~ 1.609 km.

1 inch = 2.55 cm.

~~2.55 = 6.436~~

10.2 cm = 1.609 km.

1 cm = 0.16 km.

Chetwa → Kurmania = 1.85 km.

Chetwa → Bela = 1.85 km.

Kurmania → Bela = 2

Bela — Parbatia = 2.8

Kurmania — Parbatia = 1.6 km.



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Curator

UB/sa.

| | | | | | | |
|----|-----------|--------|-----|---|---|---|
| 68 | 14-May-89 | 183752 | CC | Y | Y | Y |
| 69 | 14-May-89 | 184228 | CC | Y | N | Y |
| 72 | 14-May-89 | 185930 | PCM | Y | N | Y |
| 74 | 23-May-89 | 53618 | N | Y | N | Y |
| 75 | 23-May-89 | 182800 | N | N | N | Y |
| 76 | 23-May-89 | 183954 | N | N | Y | Y |
| 77 | 23-May-89 | 190200 | N | N | N | Y |
| 78 | 18-Jun-89 | 52500 | PCF | Y | N | Y |
| 79 | 18-Jun-89 | 180300 | PCF | Y | N | Y |
| 80 | 18-Jun-89 | 182810 | N | Y | N | Y |
| 81 | 18-Jun-89 | 182900 | N | N | Y | Y |
| 82 | 18-Jun-89 | 183320 | N | Y | N | Y |
| 84 | 18-Jun-89 | 184823 | N | Y | N | Y |
| 85 | 18-Jun-89 | 185340 | N | Y | N | Y |
| 86 | 18-Jun-89 | 190215 | | Y | N | Y |
| 87 | 18-Jun-89 | 190955 | | Y | N | Y |
| 88 | 18-Jun-89 | 191455 | PCF | Y | N | Y |
| | | | | | | |
| 1 | 13-Mar-89 | 180800 | N | | | |
| 3 | 13-Mar-89 | 181500 | N | | | |
| 4 | 13-Mar-89 | 181755 | PCL | | | |
| 10 | 21-Mar-89 | 182930 | CC | | | |
| 17 | 04-Apr-89 | 64300 | PCM | | | |
| 27 | 20-Apr-89 | 62350 | CC | | | |
| 28 | 20-Apr-89 | 63130 | N | | | |
| 30 | 20-Apr-89 | 64200 | CC | | | |
| 31 | 20-Apr-89 | 64445 | CC | | | |
| 32 | 20-Apr-89 | 64700 | N | | | |
| 38 | 28-Apr-89 | 60825 | PCL | | | |
| 48 | 28-Apr-89 | 182000 | CC | | | |
| 50 | 28-Apr-89 | 182415 | PCF | | | |
| 51 | 28-Apr-89 | 182700 | N | | | |
| 66 | 14-May-89 | 180600 | N | | | |
| 70 | 14-May-89 | 184510 | PCM | | | |
| 71 | 14-May-89 | 184615 | PCF | | | |
| 73 | 23-May-89 | 52935 | PCF | | | |
| 83 | 18-Jun-89 | 184400 | N | | | |

NAVALKHAD

| NOS | DATE | TIME | SSTM | WS | EXTFL | DD |
|-----|-----------|--------|------|----|-------|----|
| 2 | 13-Mar-89 | 181155 | N | Y | N | Y |
| 5 | 13-Mar-89 | 182600 | PCL | Y | N | Y |
| 6 | 17-Mar-89 | 80130 | CC | Y | N | Y |
| 7 | 17-Mar-89 | 174500 | N | Y | N | Y |
| 8 | 21-Mar-89 | 62420 | PCM | Y | N | Y |
| 9 | 21-Mar-89 | 64905 | PCL | Y | N | Y |
| 11 | 28-Mar-89 | 61600 | PCF | Y | N | Y |
| 12 | 28-Mar-89 | 70508 | N | Y | N | Y |
| 13 | 31-Mar-89 | 64140 | PCM | Y | N | Y |
| 14 | 31-Mar-89 | 74000 | PCM | Y | N | Y |
| 15 | 31-Mar-89 | 80310 | PCM | Y | N | Y |
| 16 | 04-Apr-89 | 62320 | PCF | Y | N | Y |
| 18 | 04-Apr-89 | 64820 | PCF | Y | N | Y |
| 19 | 04-Apr-89 | 172130 | CC | Y | N | Y |
| 20 | 13-Apr-89 | 184505 | PCM | Y | N | Y |
| 21 | 20-Apr-89 | 53052 | N | Y | N | Y |
| 22 | 20-Apr-89 | 53314 | N | N | Y | Y |
| 23 | 20-Apr-89 | 55135 | N | Y | N | Y |
| 24 | 20-Apr-89 | 60005 | N | Y | Y | Y |
| 25 | 20-Apr-89 | 60630 | CC | Y | N | Y |
| 26 | 20-Apr-89 | 62110 | N | N | Y | Y |
| 29 | 20-Apr-89 | 63210 | CC | Y | N | Y |
| 33 | 20-Apr-89 | 64925 | CC | Y | N | Y |
| 34 | 28-Apr-89 | 54935 | N | Y | Y | Y |
| 35 | 28-Apr-89 | 54935 | N | Y | Y | Y |
| 36 | 28-Apr-89 | 55338 | CC | Y | N | Y |
| 37 | 28-Apr-89 | 55452 | PCF | Y | N | Y |
| 39 | 28-Apr-89 | 62100 | PCL | N | N | Y |
| 40 | 28-Apr-89 | 62405 | N | N | N | Y |
| 41 | 28-Apr-89 | 63249 | PCM | Y | N | Y |
| 42 | 28-Apr-89 | 64240 | CC | Y | N | Y |
| 43 | 28-Apr-89 | 70950 | PCL | N | Y | Y |
| 44 | 28-Apr-89 | 75030 | CC | Y | N | Y |
| 45 | 28-Apr-89 | 170626 | CC | Y | N | Y |
| 46 | 28-Apr-89 | 173705 | N | Y | N | Y |
| 47 | 28-Apr-89 | 174050 | CC | Y | N | Y |
| 49 | 28-Apr-89 | 182235 | N | N | N | Y |
| 52 | 28-Apr-89 | 184735 | PCF | Y | N | Y |
| 53 | 14-May-89 | 60935 | PCM | Y | N | Y |
| 54 | 14-May-89 | 61445 | N | Y | N | Y |
| 55 | 14-May-89 | 62032 | CC | Y | N | Y |
| 56 | 14-May-89 | 63505 | N | Y | Y | Y |
| 57 | 14-May-89 | 63515 | N | N | Y | Y |
| 58 | 14-May-89 | 65530 | N | Y | N | Y |
| 59 | 14-May-89 | 71700 | CC | N | N | Y |
| 60 | 14-May-89 | 172625 | N | Y | N | Y |
| 61 | 14-May-89 | 173300 | N | Y | N | Y |
| 62 | 14-May-89 | 174245 | PCL | Y | N | Y |
| 63 | 14-May-89 | 175715 | N | Y | N | Y |
| 64 | 14-May-89 | 180605 | PCL | Y | N | Y |
| 65 | 14-May-89 | 180732 | CC | Y | N | Y |
| 67 | 14-May-89 | 183525 | PCF | Y | N | Y |

Metachite

berdite :- ₹ 200/= per gram.

↳ Must be clear green.

Tanzanite = ₹ 100 per gram.

along sheet plane blue

against plane violet

Emerald :- can have feathers.

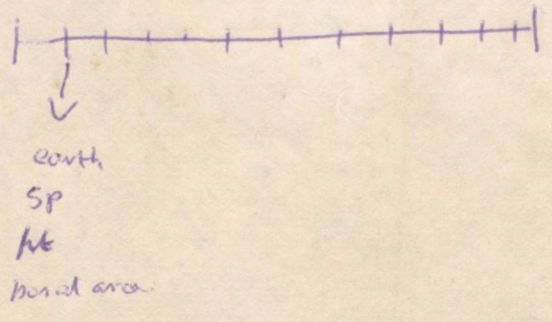
or flaws.

₹ 200/= per gram.

I. No. Location. date. DB# BD. Spinal

Point No. L/R. species.

| | | | | | | | | | |
|---|---|---|----|----|----|----|----|---|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | | |



| |
|------------|
| 15 |
| x30 |
| 00 |
| 390 |
| 390 |

| Date | time | SSMT | DATE | TIME | SSTM | STDT | Time |
|---------|-------------------|------|-----------------|--------|------|------|------|
| 7/4/89 | | | | 1721 | CC | | |
| | | | | 1727 | CC | | |
| | | | | 1740 | PC | | |
| | | | | 1758 | PC | | |
| | | | | 1808 | N | | |
| | | | | 1816 | N | | |
| 8/4/89 | | | 165045 | 165045 | PC | | |
| | 171500 | N | | 171210 | N | | |
| | 173815 | N | | 173052 | N | | |
| | 174222 | | | 174047 | N | | |
| | 175521 | PC | | 174222 | PC | | |
| | 180110 | PC | | 175500 | CC | | |
| | 180527 | PC | | 180110 | PC | | |
| | 181258 | CC | | 180527 | PC | | |
| | 182000 | CC | | 182419 | PC | | |
| 9/4/89 | | | | 164641 | PC | | |
| | 174150 | N | | 165237 | PC | | |
| | 174220 | N | | 165703 | PC | | |
| | 174753 | CC | | 173230 | PC | | |
| | 180023 | CC | | | | | |
| 24/4/89 | 164850 | N | | 171942 | N | | |
| | 172116 | CC | | 173346 | CC | | |
| | 174417 | PC | | 174030 | N | | |
| | 175205 | N | | 174610 | CC | | |
| | 180700 | N | | 175055 | PC | | |
| | | | | 175319 | PC | | |
| | 182705 | PC | | 175618 | PC | | |
| | | | | 180954 | PC | | |
| | | | | 181520 | PC | | |
| | | | | 182346 | PC | | |
| | | | | 183554 | PC | | |
| 25/4 | | | | 052914 | N | | |
| | 063145 | CC | | 053452 | PC | | |
| | 063205 | | | 060205 | PC | | |
| | 063735 | PC | | 061302 | CC | | |
| | | | | 063205 | N | | |
| | | | | 063506 | PC | | |
| | | | | 063735 | PC | | |
| | | | | 064415 | PC | | |

| Date | Time | SSTM | Time | SSTM | III rd Time |
|---------|-------------------|------|--------|------|------------------------|
| 25/4/89 | 071210 | | 071210 | PC | |
| | 163655 | CC | | | |
| | 164847 | CC | 170425 | CC | |
| | 172500 | PC | 171950 | CC | 173049 |
| | 173347 | CC | 174048 | CC | 174807 |
| | 174135 | CC | 174300 | N | 175300 |
| | 174350 | CC | | | 180138 |
| | 175226 | CC | 175704 | CC | 180520 |
| | 175712 | CC | 180028 | CC | 182035 |
| | 181408 | CC | 180833 | PC | 182806 |
| | | | 181741 | CC | |
| | | | 182806 | PC | |
| | | | 183300 | PC | |
| | | | 183910 | PC | |
| | | | 184304 | PC | |
| 26/4/89 | 052845 | CC | 053815 | PC | 053933 |
| | 054048 | CC | 060130 | PC | 054640 |
| | 060800 | CC | 061216 | PC | 061304 |
| | 061809 | N | 061550 | PC | 061927 |
| | 062219 | CC | 062156 | PCL | |
| | 065132 | CC | 062746 | PCL | |
| | | | 064324 | PC | |
| | | | 064920 | PC | |
| | 162845 | PC | 164114 | N | NO |
| | 165043 | CC | 165858 | PC | ↓ |
| | 170552 | CC | 171218 | CC | ↓ |
| | 171219 | N | 171355 | PC | |
| | 174854 | PC | 174354 | PC | |
| | 174800 | N | 174945 | CC | |
| | 180307 | PC | 175525 | PC | |
| | 182410 | PC | 180205 | N | |
| | 182252 | PC | 181120 | PC | |
| | | | 182252 | PC | |
| | | | 183234 | PC | |
| | | | 183333 | PC | |
| | | | 183921 | PC | |
| | | | 184834 | PC | |

| Date | time | SSTM | time | SSTM | □□□ |
|---------|--------|------|--------|------|--------|
| 12/6/89 | 074050 | PC | 074050 | PC | |
| | | | 170328 | CC | |
| | | | 172621 | CC | |
| | 174231 | CC | 173647 | CC | |
| | 175752 | CC | 174231 | CC | |
| | | | 180020 | N | 4' |
| | 182017 | N | 181626 | N | 182415 |
| | 185543 | A | 184002 | N | |
| | | | 185543 | N | |
| | 191607 | N | | | |
| 13/6/89 | | | 175721 | N | |

| Date | Time | SSTM | Time | SSTM | III rd + IV th |
|---------|--------|------|----------|------|--------------------------------------|
| 18/5/89 | | | 165854 | CC | |
| | 173954 | N | 172419 | CC | |
| | 175205 | N | 172718 | CC | |
| | 182458 | N | 174200 | N | |
| | 183838 | PC | 174550 | N | |
| | | | 175520 | PC | |
| | | | 181314 | PC | |
| | | | 181641 | N | |
| | | | 182924 | N | |
| | | | 183725 | N | |
| | | | 184352 | PC | |
| 20/5/89 | | | 051310 | N | ↑ No duply |
| | | | 052005 | PC | |
| | | | 052215 | N | ↓ |
| | 052950 | N | 052948 | N | |
| | 053850 | N | 0584005 | PC | |
| | 054625 | N | 054745 | PC | |
| | | | 055454 | PC | |
| | | | 061613 | CC | |
| | | | 065515 | N | |
| | | | 071653 | CC | |
| | 170511 | N | 165741 | N | |
| | 181057 | N | 181150 | PC | 173845 |
| | 182045 | PC | 181932 | N | 180720 |
| | 182430 | CC | 182408 | CC | 182430 |
| | 182735 | CC | 183325 | CC | |
| | 183137 | CC | 183922 | CC | |
| | 183850 | CC | 18190227 | PC | |
| | 184435 | PC | | | |
| 11/6/89 | 174350 | N | 1821 | N | No duply |
| | 185235 | N | 190152 | N | |
| | 190152 | N | | | |
| | 190655 | PC | | | ↓ |
| 12/6/89 | | | 053550 | PC | |
| | | | 061217 | PC | |
| | | | 070817 | N | |
| | | | 072820 | N | ↓ |

(16) R.52 to bakul 21 = 325

(17) R.52 → R.4 lower (II) 350m.

Distances sculana
between ♂'s and nest
1986 + 85.

- ① R.2 → R.3 back = 310mts ✓
- ② R.3 → R.3 nest = 100mts.
- ③ R.3 → R.4 lower (II) = 450mts.
- ④ R.4 lower (II) → R.4 lower (I) = 110mts.
- ⑤ lower R.4 → on Hide R.4 = 300mts. ✓
- ⑥ Hide R.4 → Bubo R.4 = 300mts.
- ⑦ Bubo R.4 → electric ♂ = 325mts ✓
- ⑧ electric ♂ → R.3 (I) = 450mts
- ⑨ R.3 (I) → R.4 Bubo = 600mts ✓
- ⑩ R.4 Bubo → Sambul → 275mts
- ⑪ Sambul → Sailana home = 525mts
- ⑫ Sailana home → electric = 450mts
- ⑬ R.4 Bubo → Nest ⁽⁸⁶⁺⁸⁵⁾ = 114 & 115
- ⑭ R.4 Bubo → Babul = 450mts ✓
- ⑮ Babul → Temple ♂ = 450mts ✓
- ⑯ Temple → Tambul = 400mts ✓
- ⑰ R.5 ♂ → R.4 lower = 275mts ✓
- ⑱ R.4 nest ^(low) → R.4 (low) = 75mts

| SAM A sam up. | | | SUA/SUB | | | Q | SAM A | SAM B | SudA | U20 | Z1 | |
|---------------|----|----|---------|----|----|-----|-------|-------|------|---------------|-----|----|
| 1 | 1 | 1 | 1 | 1 | 1 | 210 | 18 | 21 | 17 | 20 | 420 | 21 |
| 10 | 4 | 6 | 5 | 5 | 6 | 220 | | | 17 | 20 | 430 | 21 |
| 20 | 6 | 9 | 7 | 7 | 9 | 230 | | | 17 | 20 | 50 | 22 |
| 30 | 8 | 11 | 8 | 9 | 11 | 240 | | | 18 | 20 | 60 | 22 |
| 40 | 9 | 12 | 9 | 10 | 12 | 250 | | | 18 | 21 | 70 | 22 |
| 50 | 10 | 13 | 10 | 11 | 13 | 260 | | | 18 | 21 | 80 | 22 |
| 60 | 11 | 14 | 11 | 12 | 14 | 270 | | | 18 | | 90 | 22 |
| 70 | 12 | 15 | 11 | 13 | 14 | 280 | | | 18 | 21 | 100 | 22 |
| 80 | 12 | 15 | 12 | 14 | 15 | 290 | | | 18 | 21 | 110 | 22 |
| 90 | 13 | 16 | 13 | 15 | 15 | 300 | | | 19 | 21 | 120 | 23 |
| 100 | 14 | 16 | 13 | 15 | 16 | 310 | | | 19 | | 130 | 23 |
| 110 | 14 | 17 | 13 | 16 | 16 | 320 | | | 19 | | 140 | 23 |
| 120 | 15 | 17 | 14 | 16 | 16 | 330 | | | 19 | | 150 | 23 |
| 130 | 15 | 18 | 14 | 17 | 17 | 340 | | | 20 | | 160 | 23 |
| 140 | 16 | 18 | 15 | 17 | 17 | 350 | | | 20 | | 170 | 23 |
| 150 | 16 | 19 | 15 | 18 | 17 | 360 | | | 20 | | 180 | 23 |
| 160 | 16 | 19 | 15 | 18 | | 370 | | | 20 | | 190 | 23 |
| 170 | 17 | 19 | 16 | 18 | | 380 | | | 21 | | 200 | 23 |
| 180 | 17 | 20 | 16 | 19 | | 390 | | | 21 | | 210 | 23 |
| 190 | 17 | 20 | 16 | 19 | | 400 | | | 21 | | 220 | 23 |
| 200 | 18 | 20 | 17 | 19 | | 410 | | | 21 | | 230 | 23 |

| Date | M | E | P | Date | M | E | Date | M | E | | |
|---------|-----|---------------------------------|---------------|-------------------|----------------|----------------|--------------|---------|-----|-----|---|
| 2/3/88 | | 35 | S | 2/4/88 | 183 | 154 | N | 20/5/88 | 120 | 115 | N |
| 3/3/88 | | 60 | S | 2/4/88 | 183 | 154 | N | 23/5/88 | 150 | 158 | S |
| 4/3/88 | 117 | 30 | S | 4/4/88 | 73 | 107 | S | 24/5/88 | 120 | 132 | N |
| 6/3/88 | | 155 | S | 7/4/88 | 195 | 66 | N | 28/5/88 | 120 | 95 | S |
| 7/3/88 | 87 | 90 | S | 8/4/88 | 100 | | N | 29/5/88 | 135 | 86 | N |
| 11/3/88 | 75 | 120 | S | 8/4/88 | 207 | 135 | S | 2/6/88 | 130 | 120 | S |
| 12/3/88 | | 127 | S | 13/4/88 | 104 | 84 | S | 3/6/88 | 120 | 67 | N |
| 13/3/88 | 170 | 42 | S | 16/3/88 | 600 | 100 | N | 6/6/88 | 150 | 165 | S |
| 14/3/88 | 120 | 70 | $\frac{C}{N}$ | 17/4/88 | 185 | 120 | N | 7/6/88 | 63 | 64 | N |
| 15/3/88 | 105 | 75 | $\frac{N}{S}$ | 19/4/88 | 185 | 100 | S | 10/6/88 | 120 | 80 | S |
| 16/3/88 | 155 | 45 | S | 20/4/88 | 140 | 120 | N | 12/6/88 | 120 | 150 | N |
| 17/3/88 | | 150 | N | 22/4/88 | 150 | 140 | S | 15/6/88 | 26 | 45 | S |
| 18/3/88 | 400 | | N | 23/4/88 | 180 | 95 | N | | | 201 | |
| 20/3/88 | | 120 | S | 28/4/88 | 160 | 135 | S | | | | |
| 21/3/88 | 207 | 50 207 | S | 29/4/88 | 120 | 20 | N | | | | |
| 22/3/88 | 140 | | S | 1/5/88 | 150 | 154 | S | | | | |
| 24/3/88 | | 69 | N | 3/5/88 | 145 | 135 | N | | | | |
| 25/3/88 | 330 | 150 | N | 7/5/88 | 30 | 140 | S | | | | |
| 27/3/88 | 126 | 145 | S | 8/5/88 | 135 | 140 | N | | | | |
| 28/3/88 | | 100 | N | 11/5/88 | 120 | 106 | S | | | | |
| 29/3/88 | 300 | 171 | N | 12/5/88 | 213 | 80 | N | | | | |
| 30/3/88 | | 100 | S | 15/5/88 | 90 | 79 | S | | | | |
| 31/3/88 | 120 | 67 | S | 16/5/88 | 120 | 75 | N | | | | |
| 1/4/88 | | 125 | N | 18/5/88 | 187 | 130 | S | | | | |

| Date | M | E | loc | Date | M | E | loc | Date | M | E | loc |
|---------|----------------|-----|-----|-----------------------|-----|---------------|---------------------------|---------|-----|-----|-----|
| 2/3/89 | 60 | | C | 12/4/89 | 158 | 130 | C | 11/6/89 | 75 | | S |
| 2/3/89 | | 120 | N | 13/4/89 | 20 | | N | 3/6/89 | | 100 | C |
| 3/3/89 | 53 | 53 | C | 14/4/89 | 190 | 155 | S | 5/6/89 | 90 | 170 | S |
| 4/3/89 | 150 | | C | 16/4/89 | 165 | 120 | C | 7/6/89 | 125 | | C |
| 6/3/89 | 180 | 100 | C | 20/4/89 | 135 | | N | 8/6/89 | 180 | 105 | C |
| 9/3/89 | 101 | 102 | C | 22/4/89 | 240 | 145 | C | 9/6/89 | 110 | 150 | S |
| 11/3/89 | 190 | 120 | C | 23/4/89 | 160 | 148 | S | 15/6/89 | 90 | 135 | C |
| 13/3/89 | | 70 | N | 28 14/89 | 160 | 69 | C ^N | 16/6/89 | 100 | 150 | S |
| 14/3/89 | | 85 | C | 28/4/89 | | 60 | C ^N | 18/6/89 | 140 | 80 | N |
| 15/3/89 | 175 | | C | 30/4/89 | 230 | 150 | S | 19/6/89 | 60 | | S |
| 16/3/89 | 140 | 75 | N | 12/5/89 | 45 | | C | 19/6/89 | | 100 | C |
| 19/3/89 | 180 | 100 | C | 13/5/89 | 150 | 140 | S | 24/6/89 | 30 | 70 | S |
| 21/3/89 | 75 | 30 | N | 14/5/89 | 130 | 100 | N | 24/6/89 | 100 | 100 | C |
| 23/3/89 | 90 | 95 | C | 15/5/89 | 75 | 20 | C | 25/6/89 | | 100 | C |
| 27/3/89 | 190 | 75 | C | 17/5/89 | 85 | 100 | S | 26/6/89 | | 60 | S |
| 28/3/89 | 105 | | N | 18/5/89 | 170 | 40 | C | 26/6/89 | | 60 | C |
| 31/3/89 | 150 | | N | 22/5/89 | 105 | | C | 29/6/89 | | 135 | S |
| 3/4/89 | 180 | 100 | C | 22/5/89 | | 105 | S | 30/6/89 | | 100 | S |
| 3/4/89 | | 100 | S | 23 23/5/89 | 30 | 50 | N | 30/6/89 | | 100 | C |
| 4/4/89 | 170 | 95 | N | 24/5/89 | 220 | 140 | S | | | | |
| 6/4/89 | 60 | | S | 30/5/89 | | 160 | C | | | | |
| 11/4/89 | 35 | 112 | S | 31/5/89 | 120 | 170 | S | | | | |

| Date | Podaj | T | W1 | W2 | W3 | W4 | R1 | R2 | R3 | R4 | B1 | B2 | B3 |
|------|-------|------------------------------------|---------------|-----------------------------------|-----|------------------------------------|------|-----------------|-----|------------------------------------|------------------------------------|----|------|
| 12/7 | 10 | 0.05 | 0.05 | - | - | - | - | - | - | 0.05 | 0.05 | - | - |
| | 11 | 0.47 | 0.47 | | | | | | | 0.47 | 0.47 | | |
| | 11 | 1.9 | 1.76 | ^{1.64} 2.0 | | 2.3 | | | | 1.9 | 1.9 | | |
| | 12 | 1.14 | dm | - | - | 1.14 | | | | 1.14 | 1.14 | | |
| | 12 | ^{1.37} 1.37 | | | | ^{1.0} 1.0 | 1.67 | 1.67 | | ^{1.0} 1.0 | ^{1.37} 1.37 | | |
| | 13 | 2.8 | | | | 2.8 | | | | 2.8 | 2.8 | | |
| | 13 | 2.66 | | | | 2.66 | | | | 2.66 | 2.66 | | |
| | 14 | 2.14 | | | | 2.14 | | | | 2.14 | 2.14 | | |
| 13/7 | 1 | 2.09 | | | | 2.09 | | | | 2.09 | 2.09 | | |
| | 1 | 0.25 | | | | 0.25 | | | | 0.25 | 0.25 | | |
| | 2 | 0.87 | | | | 0.87 | | | | 0.87 | 0.87 | | |
| | 2 | 0.76 | | | | 0.76 | | | | 0.76 | 0.76 | | |
| | 3 | 0.86 | | | | 0.86 | | | | 0.86 | 0.86 | | |
| | 5 | 0.94 | | | | 0.94 | | | | 0.94 | 0.94 | | |
| | 4 | 0.78 | | | | 0.78 | | | | 0.78 | 0.78 | | |
| | 4 | 0.2 | | | | 0.2 | | | | 0.2 | 0.2 | | |
| | 10 | 0.61 | | | | 0.61 | | | | 0.61 | 0.61 | | |
| | 11 | 1.29 | | | | ^{1.18} 1.18 | 1.41 | | | ^{1.18} 1.18 | 1.29 | | |
| | 11 | 0 | | | | 0 | | 0 | | | 0 | | |
| | 12 | 1.25 | | | | 1.56 | | 0 | | | | | 0 |
| | 12 | 1.29 | | | | 1.29 | | | | 1.29 | | | 1.29 |
| | 13 | 0.70 | | | | 0.70 | | | | 0.70 | | | 0.70 |
| | 14 | 0.25 | | | | | 0.9 | 0.2 | 0 | | 0.25 | | |
| 19/7 | 1 | 1.53 | | | | | 1.86 | 1.39 | | | | | |
| | 2 | 0.1 | | | | | | | 0.1 | | | | |
| | 2 | 0 | | | | | | | 0 | | | | |
| | 10 | 0.2 | | 0 | | 0.2 | | | | | 0.2 | | |
| | 10 | 0 | | 0 | | | | | | | 0 | | |
| | 11 | 3.02 | | 2.02 | 2.4 | 3.7 | 0.78 | | | | 3.02 | | |
| | 11 | 2.1 | | | | 2.32 | 0.96 | | | | 2.1 | | |
| | 12 | 2.15 | | | | 2.15 | | | | | 2.15 | | |
| | 12 | 2.12 | | | | 3.12 | 1.61 | 0.32 | | | 2.12 | | |

| Date | Poday | W1 | W2 | W3 | W4 | R1 | R2 | R3 | R4 | B1 | B2 | B3 | T |
|------|---------------|-------------------------|-------------------------|------|-----------------|------|------|------|------|------|------|------|------|
| 19/7 | 13 | | | | | | 0 | 0 | | 0 | | | 0 |
| | 13 | | | | 1.8 | 0 | | | 1.8 | 0.77 | | | 0.77 |
| | 14 | | | | 0.71 | | | 0.71 | | 0.71 | | | 0.71 |
| 20/7 | 12 | 1.37 | | | | | | | 1.37 | | 1.37 | | 1.37 |
| 21/7 | 1 | | | | 1.75 | | | | 1.75 | | | 1.75 | 1.75 |
| | 1 | | | | 1.32 | | | | 1.32 | | | 1.32 | 1.32 |
| | 2 | | | | 0.55 | | | | 0.55 | | | 0.55 | 0.55 |
| | 2 | | | | 0.75 | | | | 0.75 | | | 0.75 | 0.75 |
| | 3 | | 0.27 | | 1.62 | | | | 0.61 | | | 0.61 | 0.61 |
| | 3 | | | | 1.32 | | | | 1.32 | | | 1.32 | 1.32 |
| | 4 | | | 0.08 | 0.91 | | | | 0.4 | | | 0.4 | 0.4 |
| | 4 | | 0.37 | | | | | | 0.37 | | | 0.37 | 0.37 |
| | 5 | | | | 0.95 | | | | 0.95 | | | 0.95 | 0.95 |
| | 5 | | 1.59 | 1.79 | 2.03 | | | | 1.70 | | | 1.70 | 1.70 |
| | 8 | | 1.77 0.55 | 1.57 | | | | | 1.16 | | | 1.76 | 1.16 |
| | 9 | 1.06 | 1.5 | 1.58 | | | | | 1.51 | | | 1.51 | 1.51 |
| | 9 | 1.25 1.25 | 0.76 | 2.67 | | | | | 1 | | | 1 | 1 |
| | 10 | | 0.57 | 0.62 | | | | | 0.6 | 0.6 | | | 0.6 |
| | 10 | | | 0.2 | | | | | 0.2 | 0.2 | | | 0.2 |
| | 11 | | | 1.14 | 1.57 | | | | 1.29 | | 1.29 | | 1.29 |
| | 12 | | 0.3 | 0.83 | | | | | 0.57 | | 0.57 | | 0.57 |
| | 12 | | | 0.37 | | | | | 0.37 | 0.37 | 0.37 | | 0.37 |
| | 13 | | | 0 | | | | | 0 | 0 | | | 0 |
| | 13 | | | | 1.17 | | | | | | | | |
| | 15 | | | | 1.05 | 1.05 | 0 | 0 | 0.75 | | | | 0.45 |
| | 13 | | | | 0.86 | 0.75 | 0 | 0 | 0.86 | | | | 0.45 |
| 28/7 | 10 | 1.36 | 2 | | 2.16 | | 1.33 | 0 | 1.11 | | | 1.52 | 1.52 |
| | 10 | | | 1.53 | 1.5 | 1.02 | | | 1.52 | 1.27 | | | 1.27 |
| | 11 | | | | | | | 0 | | 0 | | | 0 |
| | 11 | | | | 0 | 0 | | | | 0 | | | 0 |
| | 12 | | | | 0 | | | | 0 | 0 | | | 0 |
| | 12 | | 0 | | 0 | | | | 0 | 0 | | | 0 |
| | 13 | | | 0 | | | | | 0 | 0 | | | 0 |

| Date | Today | T | w ₁ | w ₂ | w ₃ | w ₄ | R ₁ | R ₂ | R ₃ | R ₄ | B ₁ | B ₂ | B ₃ |
|------|-------|------------------------------------|----------------|------------------------|----------------|-----------------|----------------|----------------|----------------|-------------------------|-----------------|-----------------|----------------|
| 10/7 | 11 | 0.65 | | | | 0.65 | | | | 0.65 | | 0.65 | |
| | 11 | 1.17 | | | | 1.17 | | | | 1.17 | | 1.17 | |
| | 12 | 1.68 | | | 1.68 | | | | | 1.68 | | 1.68 | |
| | 12 | 1.74 | | | | 1.74 | | | | 1.74 | | 1.74 | |
| | 13 | 1.35 1.74 | | | 1.35 | | | | | 1.74 1.35 | | 1.35 | |
| | 13 | 1.84 | | | | 1.84 | | | | 1.84 | 1.84 | 0.8 | |
| | 14 | 1.93 | | | | 1.93 | | | | 1.93 | 1.93 | | |
| 11/8 | 2 | 1.53 | | | | 1.53 | | | | 1.53 | | 1.53 | |
| | 2 | 1.15 | | | | 1.15 | | | | 1.15 | | 1.15 | |
| | 2 | 1.42 | | | | 1.42 | | | | 1.42 | | 1.42 | |
| | 3 | 1.22 | | | | 1.22 | | | | 1.22 | | 1.22 | |
| | 3 | 1.27 | | | | 1.27 | | | | 1.27 | | 1.27 | |
| | 4 | 0.9 | | 0 | | 1 | | | | 0.9 | | 0.9 | |
| | 4 | 0 | | 0 | | | | | | 0 | | 0 | |
| | 5 | 0.95 | .44 | 1.45 | | 1.9 | | | | 0.95 | | 0.95 | |
| | 9 | 1.05 | | 1.05 | | | | | | 1.05 | | 1.05 | |
| | 9 | 0.95 | 0.64 | 1.67 | | 1.17 | | | | 0.95 | | 0.95 | |
| | 10 | 0 | 0 | | | | | | | 0 | | 0 | |
| | 10 | 0.05 | 0.05 | | | | | | | 0.05 | | 0.05 | |
| | 11 | 0 | 0 | | | | | | | 0 | | 0 | |
| | 11 | 1.6 | | 0.63 1.6 | | | | | | 1.6 | | 1.6 | |
| | 12 | 1.05 | | 1.14 | 1.56 | 0.5 | | | | 1.05 | 1.05 | | |
| | 12 | 1.67 | | | | 1.67 | | | | 1.67 | 1.67 | 1.67 | |
| | 13 | 1.14 | | | | 1.18 | 0.67 | | | 1.18 | | 1.14 | |
| | 13 | 1.1 | | | | 1.1 | | | | 1.1 | | 1.1 | |
| 21/8 | 1 | 0.3 | | | | 1.39 | 0 | | | 0.39 | 0.3 | 0.3 | |
| | 2 | 0.95 | | | | 0.95 | | | | 0.95 | 0.95 | 0.95 | |
| | 2 | 1.35 | | | | 1.35 | | | | 1.35 | 1.35 | 1.35 | |
| | 3 | 1.67 | | | | 1.67 | | | | 1.67 | 1.67 | 1.67 | |
| | 3 | 1.55 | | | | 1.55 | | | | 1.55 | 1.55 | 1.55 | |
| | 4 | 1.85 | | | | 1.85 | | | | 1.85 | 1.85 | 1.85 | |
| | 4 | 1.4 | | | | 1.4 | | | | 1.4 | 1.4 | 1.4 | |
| | 10 | 1.17 | | | | 1.17 | | | | 1.17 | 1.17 | 1.17 | |
| | 10 | 0 | | | | 0 | | | | 0 | 0 | 0 | |

| Date | Poday | T | ω_1 | ω_2 | ω_3 | ω_4 | R_1 | R_2 | R_3 | R_4 | B_1 | B_2 | B_3 |
|------|-------|------------------------|------------|------------|------------|------------|-------|-------|-------|-------|-----------------|-------|-------|
| 29/6 | 1 | 2.11 | | | | 2.05 | 1.67 | | | | 2.11 | | |
| | 2 | 1.91 | | | | 2.55 | 0.57 | | | 2.55 | 1.91 | 1.91 | |
| | 2 | 2.12 | | | | 2.12 | | | | 2.12 | 2.12 | | |
| | 3 | 1.9 | | | | 2.24 | 1.09 | | | 2.24 | 1.9 | | |
| | 3 | 2.82 0.6 | | | | 0.82 | | | 0 | | 0.82 | | |
| | 4 | 0.05 | | | | 0.17 | | | 0 | 0.17 | | | |
| | 4 | 0.1 | | 0.1 | | | | | | 0.1 | 0.1 | | |
| | 5 | 1.8 | | 2.21 | 2.37 | | | | 0 | 2.25 | | 1.8 | |
| | 5 | 0 | | | 0 | 0 | 0 | | | | | | 0 |
| | 9 | 1.53 | | | 3 | 2.26 | 0.94 | 0.5 | | 2.42 | | 1.53 | |
| | 10 | 1.62 | | | | 3 | 1.55 | | | 3 | 1.62 | | |
| | 10 | 1.71 | | | | 2.8 | 1.13 | | | 2.8 | | 1.71 | |
| | 11 | 0.35 | | | | | 0.35 | | | | | 0.35 | |
| | 11 | 0 | | 0 | 0 | | | | | 0 | 0 | | |
| | 12 | 0 | 0 | | | | | | | 0 | | 0 | |
| | 12 | 1.87 | 1.75 | | 3 | 2 | | | | 1.87 | 1.87 | | |
| | 13 | 2.05 | 1.93 | 2.3 | | | | | | 2.05 | 2.05 | | |
| | 13 | 0.85 | | | 0.85 | | | | | 0.85 | 0.85 | | |
| | 14 | 0.5 | | | | 0.5 | | | | | | 1 | 0 |
| 30/7 | 1 | 2.15 | | | | 2.23 | 0.8 | | | | | | 2.25 |
| | 1 | 1 | | | | | 1.2 | 0.5 | | | | 1 | |
| | 2 | 1.58 | | | | 1.58 | | | | 1.58 | | 1.58 | |
| | 2 | 1.44 | | | | 1.44 | | | | 1.44 | | 4 | 1.44 |
| | 3 | 1.8 | | | 2 | 1.56 | | | | 1.8 | | 1.8 | |
| | 3 | 1.87 | | | 2.25 | 2.22 | 1 | | | 2.24 | | 1.87 | |
| | 4 | 1.93 | | | | 1.93 | | | | 1.94 | | 1.93 | |
| | 4 | 1.69 | | | | 1.69 | | | | 1.69 | | 1.69 | |
| | 5 | 1.67 | | | | 1.84 | 2 | .75 | | 1.84 | | 1.67 | |
| | 9 | 1.9 | | | | 2.06 | 1.2 | | | 2.06 | | 1.9 | |
| | 10 | 1.1 | | 0.82 | | 1.44 | | | | 1.1 | | 1.1 | |
| | 10 | 0.1 | | | | 0 | 0.4 | | 1.014 | 0 | | 0.1 | |

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| Date | Time | °C | Time | Pc | Sunrise |
|---------|----------------------|------|-----------|----|---------|
| 22/4/89 | 0730 | 21.7 | 0700-0730 | 7 | SR 0553 |
| | 0800 | 23.9 | 0730-0800 | 8 | |
| | 0830 | 25.6 | 0800-0830 | 11 | |
| | 0900 | 28.3 | 0830-0900 | 7 | |
| | 1645 | 40.5 | | | |
| | 1715 | 39.4 | 1645-1715 | 3 | |
| | 1745 | 37.8 | 1715-1745 | 3 | |
| | 1815 | 33.3 | 1745-1815 | 2 | |
| | 1845 | 35 | 1815-1845 | 8 | |
| 23/4/89 | 0530 | 19.4 | | | 0546 SR |
| | 0600 | 18.3 | 0530-0600 | 10 | |
| | 0700 | 21.7 | 0600-0700 | 8 | |
| | 0730 | 23.9 | 0700-0730 | 10 | |
| | 0800 | 27.2 | 0730-0800 | 6 | |
| | 1610 | 37.8 | | | |
| | 1645 | 38.9 | 1610-1645 | 3 | |
| | 1715 | 35 | 1645-1715 | 5 | |
| | 1745 | 33.3 | 1715-1745 | 7 | |
| | 1818 | 30.6 | 1745-1818 | 4 | |
| | 1845 | 29.4 | 1818-1845 | 9 | |
| 25/4/89 | 1615 | 38 | | | |
| | 1648 | 35.5 | 1615-1648 | 11 | |
| | 1720 1720 | 34 | 1648-1720 | 6 | |
| | 1744 | 33 | 1720-1744 | 5 | |
| | 1814 | 31 | 1744-1814 | 4 | |
| | 1845 1845 | 27.5 | 1814-1845 | 9 | |
| 26/4 | 0530 | 19.5 | | | |
| | 0601 | 16 | 0530-0601 | 5 | |
| | 0630 | 20 | 0601-0630 | 7 | |
| | 0700 | 24 | 0630-0700 | 5 | |
| | 0730 | 29 | 0700-0730 | 3 | |
| | 1620 | 37 | | | |
| | 1650 | 36 | 1620-1650 | 11 | |
| | 1720 | 34 | 1650-1720 | 7 | |
| | 1750 | 32 | 1720-1750 | 9 | |
| | 1822 | 28 | 1750-1822 | 7 | |

Dalbergia sissoo, Simul Bombax ceiba and eucalyptus. These plantations have mostly been unsuccessful, leaving behind scattered clusters of trees in varying densities.

Grasslands occupy about 120 sq. km of the Park, dominated by the following grass species: Arundo donax, Phragmites karka, Narenga porphyrocoma, Desmostachya bipinnata, Bothriochloa pertusa, Saccharum spontaneum, S. munja, Imperata cylindrica, Heteropogon contortus, Themeda arundinacea, Cymbopogon martinii, Vetiveria zizanoides, Typha elephantina, Cynodon dactylon, Perotis indica, Andropogon intermedius, Panicum paludosum, Dactyloctenium aegyptium, Setaria glauca, etc. (see Table 1, for areas under different vegetation types).

The climate can be divided into three major seasons. Winter (October to early March); summer (mid-March to mid-June); and monsoon (mid-June to October). The annual precipitation is about 1600 mm with July and August being the wettest months. The temperatures can reach 47°C in May/June, and may drop to a minimum of 0°C in December/January.

Materials and Methods

The study period extended from 22 January 1988 to 22 June 1988 and from 1 to 13 November 1988.

All data pertaining to herd size and herd composition were collected from an area of about 25 sq. km. around the Satiana Forest Rest House. Other areas occupied by swamp deer were visited frequently to assess the populations there.

Between 1 and 13 November 1988 the entire Satiana region, including the marshes at Ghola and Ghajrola (agricultural areas into which the swamp deer move) was surveyed extensively on elephant back (see Fig 2). Locating and sexing swamp deer in the tall vegetation was difficult because they could only be identified when running away from the approaching elephant. In addition stags were located when they began bugling.

Swamp deer were counted mostly from a vehicle, less

| Sunset | | | | Sunrise | | | |
|--------|-----------------|-----------------|-----------------|---------|-----------------|-----------------|-----------------|
| Date | W st | E st | 3 rd | Date | W st | E st | 3 rd |
| 8/4 | -63 | -66 | | 25/4 | +45 | -17 | |
| | -40 | -48 | | | +51 | -12 | |
| | -23 | -38 | | | | +16 | |
| | -17 | -36 | | | | +27 | |
| | -13 | -17 | | | | +46 | |
| | -7 | -13 | | | | +49 | |
| | +2 | +6 | | | | +51 | |

| | | | | | | | |
|-----|-----|-----|--|--|-----|--|--|
| 9/4 | -36 | -92 | | | +58 | | |
| | -36 | -86 | | | +86 | | |
| | -30 | -81 | | | | | |
| | -18 | -46 | | | | | |

| | | | | | | | | |
|------|-----|-----|--|------|-----|-----|-----|-----|
| | | | | 26/4 | +9 | +19 | -18 | -8 |
| | | | | | +21 | +42 | -6 | +15 |
| | | | | | +49 | +53 | +22 | +26 |
| 24/4 | -96 | -66 | | | +59 | +56 | +32 | +29 |
| | -64 | -52 | | | +63 | +62 | +36 | +35 |
| | -41 | -45 | | | +92 | +68 | +65 | +41 |
| | -33 | -39 | | | | +84 | | +57 |
| | -18 | -35 | | | | +90 | | +63 |

| | | | | | | | | |
|--|----|-----|--|------|-----|------|--|--|
| | +2 | -32 | | 20/5 | +10 | -6 | | |
| | | -29 | | | +19 | +1 | | |
| | | -16 | | | +27 | +3 | | |
| | | -10 | | | | +10 | | |
| | | +2 | | | | +21 | | |
| | | +10 | | | | +28 | | |
| | | | | | | +35 | | |
| | | | | | | +57 | | |
| | | | | | | +96 | | |
| | | | | | | +117 | | |

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|------|-----|------|-----|--|--|--|--|--|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 25/4 | +98 | -81 | | | | | | |
| | -76 | -108 | -81 | | | | | |
| | -45 | | -65 | | | | | |
| | -42 | -98 | -45 | | | | | |
| | -28 | -60 | -42 | | | | | |
| | -25 | -52 | -25 | | | | | |
| | -17 | -17 | -17 | | | | | |
| | -44 | -8 | -44 | | | | | |
| | -42 | +3 | -42 | | | | | |
| | +8 | +8 | +8 | | | | | |
| | +14 | +14 | +14 | | | | | |
| | +18 | +18 | +18 | | | | | |

W E
12/6 = +8
+133 +45
+101
+121
~~+101~~
+133

| | Summ. | Summ. | Summ. | Summ. | | Summ. | Summ. |
|------|----------------|----------------|----------------|----------------|------|----------------|---------------|
| 26/4 | 10 | 10 | 10 | 10 | | 10 | 10 |
| 26/4 | 136 | 125 | 117 | 104 | 11/6 | +62 | -22 |
| | 174 | 104 | 95 | 87 | | +7 | |
| | 99 | 92 | 80 | 73 | | +16 | |
| | 92 | 91 | 73 | 71 | | +21 | |
| | 58 | 61 | 37 | 41 | 12/6 | 103 | -102 |
| | 41 | 55 | 22 | 35 | | -63 | -79 |
| | 20 | 49 | 1 | 30 | | -48 | -69 |
| | | 42 | | 23 | | -25 | -63 |
| | | 33 | | 14 | | +31 | -45 |
| | | 23 | | 2 | | | -29 |
| | | 12 | | +7 | | | -5 |
| | | 1 | | +8 | | | +10 |
| | | 15 | | +14 | | | |
| | | 12 | | +21 | | | -48 |

18/5

| | |
|-----|------|
| -64 | -105 |
| -51 | -79 |
| -19 | -76 |
| -5 | -61 |
| | -64 |
| | -48 |
| | -30 |
| | -27 |
| | -14 |
| | -6 |
| | 0 |

| | | |
|------|-----|------|
| 20/5 | -98 | -106 |
| | -33 | -32 |
| | -23 | -24 |
| | -19 | -19 |
| | -16 | -10 |
| | -12 | -4 |
| | -5 | +14 |
| | +1 | |

| Date | Morning deft. | + sunrise | Evening Arrival | + Sunset | Date | Morning deft | + Sunrise | Evening Arrival | + Sunset |
|---------|------------------|--------------|--------------------|-------------|---------|-----------------|--------------|-----------------------|-------------|
| 11/3/88 | 0753 | +80 | 1655 | -73 | 14/4/89 | 0847 | | 1615 | |
| 12/3/88 | | | 1712 | -56 | 16/4/89 | 0815 | | | |
| 13/3/88 | 0823 | +110 | | | 22/4/89 | 0920 | | 1625 | |
| 20/3/88 | | | 1645 | -83 | 23/4/89 | 0806 | | 1624 | |
| 21/3/88 | 0925 | | 1805 | | 29/4/89 | 0743 | | 1756 | |
| 23/3/88 | 0820 | | | | 30/4/89 | 0722 | | 1640 | |
| 27/3/88 | 0805 | | 1645 | | 13/5/89 | 0800 | | 1625 | |
| 30/3/88 | | | 1705 | | 18/5/89 | 0754 | | | |
| 31/3/88 | 0748 | | 1725 | | 22/5/89 | 0651 | | 1705 08 | |
| 4/4/88 | 0708 | | 1655 | | 22/5/89 | | | 1807 | |
| 8/4/88 | 0910 | | 1635 | | 24/5/89 | 1235 | | 1630 | |
| 13/4/88 | 0724 | | 1720 | | 31/5/89 | 0725 | | 1630 | |
| 19/4/88 | 0845 | | 1715 | | 3/6/89 | | | 1723 | |
| 22/4/88 | 0725 | | 1633 | | 5/6/89 | | | 1605 | |
| 28/4/88 | 0735 | | 1635 | | 8/6/89 | 0811 | | 1739 | |
| 1/5/88 | 0729 | | 1628 | | 9/6/89 | 0700 | | 1530 | |
| 7/5/88 | | | 1645 | | 15/6/89 | | | 1704 | |
| 11/5/88 | 0728 | | 1700 | | 16/6/89 | 0705 | | 1648 | |
| 15/5/88 | 0652 | | 1705 | | 23/6 | | | 1750 | |
| 18/5/88 | 0932 | | 1655 | | 24/6 | | | 1801 | |
| 23/5/88 | 0703 | | 1622 | | 25/6 | | | 1825 | |
| 28/5/88 | 0652 | | 1742 | | 29/6 | | | 1645 | |
| 2/6/88 | 0732 | | 1709 | | | | | | |
| 6/6/88 | 0721 | | 1641 | | | | | | |
| 10/6/88 | | | 1810 | | | | | | |
| 15/6/88 | 0526 | | 1841 | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 11/3/89 | | | 1625 | | | | | | |
| 14/3/89 | | | 1702 | | | | | | |
| 15/3/89 | 0900 | | | | | | | | |
| 19/3/89 | 0910 | | 1650 | | | | | | |
| 23/3/89 | 0825 | | 1703 | | | | | | |
| 27/3/89 | 0855 | | 1702 | | | | | | |
| 3/4/89 | 0845 | | 1807 | | | | | | |
| 6/4/89 | 0645 | | 1209 | | | | | | |
| 11/4/89 | | | 1709 | | | | | | |
| 12/4/89 | 0815 | | 1646 | | | | | | |

| Date | Time | °C | Time | PC | Sunrise/sunset. |
|---------|------|------|-----------|----|-----------------|
| 14/4/89 | 0545 | 9.5 | 0535-0615 | 0 | |
| | 0615 | 10.6 | | | |
| | 0645 | 12.8 | 0615-0645 | 12 | |
| | 0715 | 18.3 | 0645-0715 | 9 | |
| | 0745 | 21.1 | 0715-0745 | 7 | |
| | 0815 | 23.3 | 0745-0815 | 3 | |
| | 0845 | 25.6 | | | |
| | 1635 | 37.2 | | | |
| | 1701 | 36.4 | 1615-1701 | 0 | |
| | 1730 | 35 | 1701-1730 | 0 | |
| | 1800 | 33.3 | 1730-1800 | 4 | |
| | 1830 | 29.4 | 1800-1830 | 3 | |
| | 1850 | 25.6 | 1830-1850 | 3 | |

| | | | | | |
|---------|------|------|--|----|---------|
| 16/4/89 | 0530 | 15.6 | | | SR 0555 |
| | 0600 | 15 | 0530-0600 | 14 | SS 1822 |
| | 0630 | 17.2 | 0600-0630 | 15 | |
| | 0700 | 20 | 0630-0700 | 14 | |
| | 0730 | 23.3 | 07 00 ³⁰ -07 00 ³⁰ | 7 | |
| | 0800 | 25.6 | 0730-0800 | 5 | |
| | 1645 | 40.5 | | | |
| | 1715 | 38.3 | | | |
| | 1745 | 36.1 | | | |
| | 1815 | 33.9 | 1645-1840 | 7 | |
| | 1840 | 32.2 | | | |

| | | | | | |
|---------|------|------|--|--|---------|
| 20/4/89 | 0542 | 14.4 | | | 0542 SR |
| | 0615 | 15.6 | | | |
| | 0645 | 20 | | | |
| | 0715 | 23.3 | | | |
| | 0745 | 25.6 | | | |

| | | | | | |
|---------|------|------|-----------|----|--|
| 22/4/89 | 0530 | 14.4 | 0520-0530 | 4 | |
| | 0600 | 14.4 | 0530-0550 | 8 | |
| | 0630 | 15 | 0550-0630 | 10 | |
| | 0700 | 18.9 | 0630-0700 | 9 | |

Status of the Swamp Deer (Cervus duvauceli duvauceli) in the
Dudwa National Park, India.

By
Ravi Sankaran

The rapid decline of the Swamp Deer Cervus duvauceli duvauceli in the terai of Uttar Pradesh (U.P.) over recent years has been a cause of concern amongst conservationists. This, inspite of the establishment of two sanctuaries and a National Park with the objective to conserve this species. Out of eleven areas where Swamp Deer were reported in the mid 1960s (Schaller 1967) only three held any "reasonable" numbers by the early 1970s (Holloway 1973). The situation has not changed since then and infact has deteriorated in certain areas.

The swamp deer is a deer of the grasslands. Due to the repatriation of settlers throughout the terai of U.P. most of these grasslands have been converted into agriculture, the predominant crops being sugarcane, wheat and paddy. Forestry practices (which often consider grasslands as 'wastelands') like planting exotics and indigenous tree species in grasslands have converted several good grasslands into woodlands (Rahmani et al 1988). Relentless hunting has decimated the large herds that were seen in the terai belt (Singh 19--). Today North Lakhimpur, South Lakhimpur and Pilhibhet are the only three forest divisions where swamp deer are seen in any numbers in U.P. Excepting Dudwa National Park, the current status of the swamp deer in other areas of U.P. is uncertain.

Dudwa National Park is the last stronghold of the swamp deer in U.P. In spite of the area having received protection since 1968 the swamp deer numbers have continued to decline. The main grasslands of the Park are present along the Suheli river and hence most of the swamp deer are seen along the southern boundary of the Park (see fig). Non-inclusion of certain areas that are used for rutting by the herds at Satiana into the National Park has resulted in the movement of the swamp deer into agricultural areas for nearly half the year. Due to the high incidence of poaching outside the Park, the deer numbers have continued to decline.

1988.

| Date | Crop | Bleed | BPL | | | | | |
|------|------|-------|-----|--|-------|----|----|--|
| 6/7 | | 1♀ | | | 28/8 | | 2♂ | |
| 14/7 | | 1♂ | 4 | | 29/8 | | 2♂ | |
| 16/7 | | | 1♂ | | 2/9 | | 2♂ | |
| 17/7 | 1♂ | 1♂ | 1♂ | | 9/9 | | 2♂ | |
| 18/7 | 2♂ | 1♂ | | | 9/9 | | 2♂ | |
| 19/7 | 1♂ | 2♂ | | | 19/9 | | 2♂ | |
| 23/7 | 4 1♂ | 1♀ | 1♂ | | 25/9 | 4♂ | 2♂ | |
| 25/7 | | 3♂+1♀ | 1♂ | | 26/9 | | 1♂ | |
| 26/7 | | | 1♂ | | 27/9 | 1♂ | 1♂ | |
| 31/7 | 1♂ | | | | 28/9 | 1♂ | 1♂ | |
| 2/8 | | 1♂ | 1♂ | | 29/9 | 1♂ | 1♂ | |
| 3/8 | | 2♂ | 1♂ | | 11/10 | 1♂ | | |
| 4/8 | | 2♂ | | | | | | |
| 5/8 | | 1♂ | 1♂ | | | | | |
| 6/8 | | 1♂+1♀ | | | | | | |
| 7/8 | | 1♂ | 1♂ | | | | | |
| 13/8 | | 2♂ | | | | | | |
| 14/8 | | 1♂ | | | | | | |
| 15/8 | | 2♂ | 1♂ | | | | | |
| 16/8 | | 2♂ | | | | | | |
| 22/8 | | 2♂ | | | | | | |
| 25/8 | | 2♂ | | | | | | |
| 26/8 | | 2♂ | | | | | | |
| 27/8 | | 2♂ | | | | | | |

| 1986 FNT | ACTUAL | | | NORMALIZED | | | PERCENT | | |
|-------------|--------|-------|-----|------------|-------|-----|---------|-------|-------|
| | CROP | GRASS | BPC | CROP | GRASS | BPC | FAN | GRASS | BPC |
| 1 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 1 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0.067 | 1 | 0 | 6.3 | 93.7 |
| 1 | 0 | 3 | 1 | 0 | 0.2 | 1 | 0 | 16.7 | 83.3 |
| 1 | 2 | 1 | 2 | 0.4 | 0.067 | 2 | 16.2 | 2.7 | 81.1 |
| 2 | 0 | 4 | 1 | 0 | 0.267 | 1 | 0 | 21.1 | 78.9 |
| 2 | 1 | 3 | 0 | 0.2 | 0.2 | 0 | 50 | 50 | 0 |
| 2 | 1 | 2 | 0 | 0.2 | 0.13 | 0 | 60.6 | 39.4 | 0 |
| 2 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 100 | 0 |
| 2 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 2 | 1 | 0 | 0 | 0.2 | 0 | 0 | 100 | 0 | 0 |
| 2 | 1 | 2 | 1 | 0.2 | 0.13 | 1 | 15.0 | 9.8 | 75.18 |
| 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 100 |
| 2 | 1 | 1 | 0 | 0.2 | 0.067 | | 74.9 | 25.1 | 0 |
| 2 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 3 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 3 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 3 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 3 | 0 | 2 | 0 | 0 | 0.13 | 0 | 0 | 100 | 0 |
| 3 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 3 | 0 | 1 | 1 | 0 | 0.067 | 1 | 0 | 6.3 | 93.7 |
| 3 | 1 | 2 | 0 | 0.2 | 0.13 | 0 | 60.6 | 39.4 | 0 |
| 3 | 3 | 3 | 2 | 0.6 | 0.2 | 2 | 21.4 | 70.1 | 71.4 |
| 3 | 1 | 4 | 1 | 0.2 | 0.267 | 1 | 13.6 | 18.2 | 68.2 |
| 3 | 0 | 4 | 0 | 0 | 0.267 | 0 | 0 | 100 | 0 |
| 4 | 2 | 4 | 2 | 0.4 | 0.267 | 2 | 14.9 | 10.1 | 75 |
| 4 | 0 | 3 | 0 | 0 | 0.2 | 0 | 0 | 100 | 0 |
| 4 | 0 | 2 | 1 | 0 | 0.13 | 1 | 0 | 11.5 | 88.5 |
| 4 | 0 | 3 | 0 | 0 | 0.2 | 0 | 0 | 100 | 0 |
| 4 | 0 | 3 | 0 | 0 | 0.2 | 0 | 0 | 100 | 0 |
| 4 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |
| 4 | 0 | 1 | 0 | 0 | 0.067 | 0 | 0 | 100 | 0 |

1987

ACTUAL

NORMALIZED

PERCENT

FMT

CROP

GRASS

BPC

CROP

GRASS

BPC

CROP

GRASS

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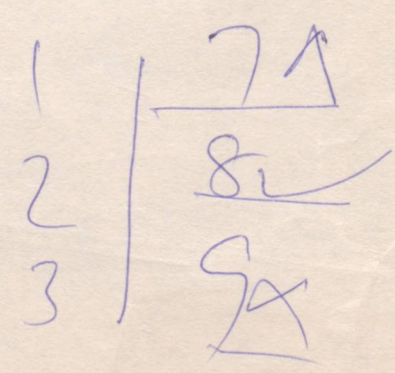
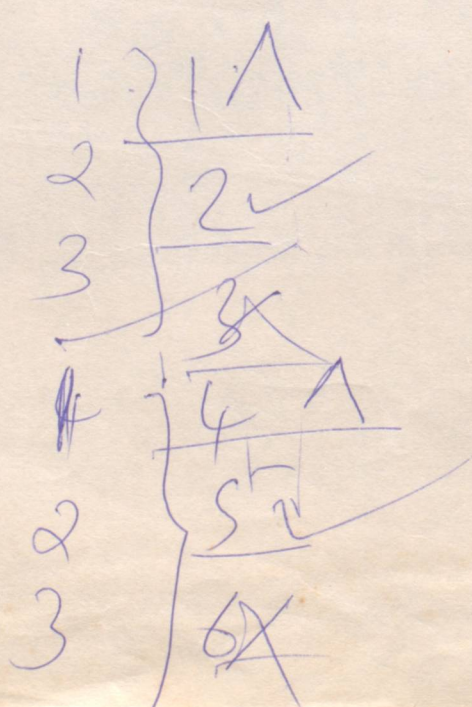
4

4

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| FMT | CROP | GRASS | BPC | CROP | GRASS | BPC | CROP | GRASS | BPC |
|-----|------|-------|-----|------|-------|-----|------|-------|-----|
| 5 | | 2 | | | | | | | |
| 5 | | 2 | | | | | | | |
| 5 | | 2 | | | | | | | |
| 6 | | 2 | | | | | | | |
| 6 | | 2 | | | | | | | |
| 6 | | 1 | | | | | | | |
| 6 | 1 | 1 | | | | | | | |
| 7 | 1 | 1 | | | | | | | |
| 7 | 1 | 1 | | | | | | | |
| 7 | 1 | 0 | | | | | | | |

| | Crop | Bleed | BPC. |
|----|------|-------|------|
| 1 | 0 | 1 | 0 |
| 2 | 0 | 3 | 1 |
| 3 | 4 | 0 | 43 |
| 4 | 0 | 0 | 1 |
| 5 | 6 | 0 | 0 |
| 6 | 6 | 0 | 3 |
| 7 | 5 | 0 | 0 |
| 8 | 7 | 1 | 0 |
| 9 | 0 | 2 | 2 |
| 10 | 3 | 0 | 4 |
| 11 | 1 | 3 | 3 |
| 12 | 1 | 5 | 0 |
| 13 | 0 | 1 | 0 |
| 14 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 |



1988

| | Crop | bleed | BFC |
|----|------|-------------------|-----|
| 1 | 0 | 1 | 0 |
| 2 | 4 | 5 | 2 |
| 3 | 1 | 5 | 3 |
| 4 | 1 | 1 | 1 |
| 5 | 0 | 8 | 3 |
| 6 | 0 | 7 | 1 |
| 7 | 0 | 2 | 0 |
| 8 | 0 | 10 | 0 |
| 9 | 0 | 4 | 0 |
| 10 | 0 | 2 | 0 |
| 11 | 0 | 4 2 | 0 |
| 12 | 1 | 4 | 0 |
| 13 | 3 | 2 | 0 |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |

1986

| Date | Crop | Bhead | BPC | | | | |
|------|--------|-------|------|------|---|-------|----|
| 23/6 | | 1♂ | | 17/8 | | 4♂ | 1♂ |
| 24/6 | | 1♂ | | 18/8 | | ♂ | 2♂ |
| 25/6 | | 1♂ | | 19/8 | | ♂ | 2♂ |
| 27/6 | | 1♂ | | 20/8 | | 5♂ | 2♂ |
| 28/6 | | 2♂ | | 22/8 | | 4♂+1♀ | 2♂ |
| 1/7 | | 1♂ | 1♂ | 23/8 | | 6♂ | 3♂ |
| 4/7 | | 2♂+1♀ | 1♂ | 25/8 | | 3♂ | 1♂ |
| 5/7 | 1♀+1♂ | 1♂ | 2♂ | 26/8 | | 2♂ | |
| 6/7 | | 2♂+1 | 1♂ | 27/8 | | 7 | 4♂ |
| 7/7 | 1♂ | 1♀+2♂ | 2♂ | 28/8 | | 4 | 2 |
| 8/7 | 1♂ | 1♂+1♀ | | 29/8 | | 7 | 4 |
| 9/7 | | | 3♂ | 1/9 | | 4 | |
| 10/7 | | 2♂ | | 2/9 | 2 | 5 | |
| 11/7 | 1♂ | | | 3/9 | | ♂ | 1 |
| 14/7 | 1♂ | 1♀+♂ | 1♂ | 4/9 | | ♂ | 2 |
| 15/7 | | | 2♂ | 5/9 | | 3 | 1 |
| 18/7 | 1♀ | 1♂ | | 6/9 | | 3 | |
| 19/7 | | 2♂ | | 7/9 | | 3 | 1 |
| 20/7 | | 1♂ | | 8/9 | | 1 | |
| 21/7 | | 1♂+1♀ | | 11/9 | | 3 | 1 |
| 26/7 | | 2♂ | | 12/9 | | 3 | 1 |
| 27/7 | | 2♂ | | 14/9 | | 4 | 1 |
| 28/7 | | 1♂ | | 15/9 | | 3 | |
| 29/7 | | 1♂ | 1♂ | 18/9 | | 3 | |
| 30/7 | 1♀ | 2♂+1♀ | | 17/9 | | 3 | |
| 31/7 | 2♂+1♀ | 3♂ | 2♂ | 18/9 | | 5 | |
| 1/8 | 1♂ | 4♂ | 1♂ | 19/9 | | 4 | |
| 2/8 | | 3♂ | | | | | |
| 3/8 | (2♂) ← | 3♂+1♀ | 2♂ → | | | | |
| 7/8 | | 1♀+2♂ | | | | | |
| 8/8 | | 2♂ | 1♂ | | | | |
| 11/8 | | 3♂ | | | | | |
| 12/8 | | 3♂ | | | | | |
| 14/8 | | 1♂ | | | | | |
| 15/8 | | 1♀ | | | | | |



