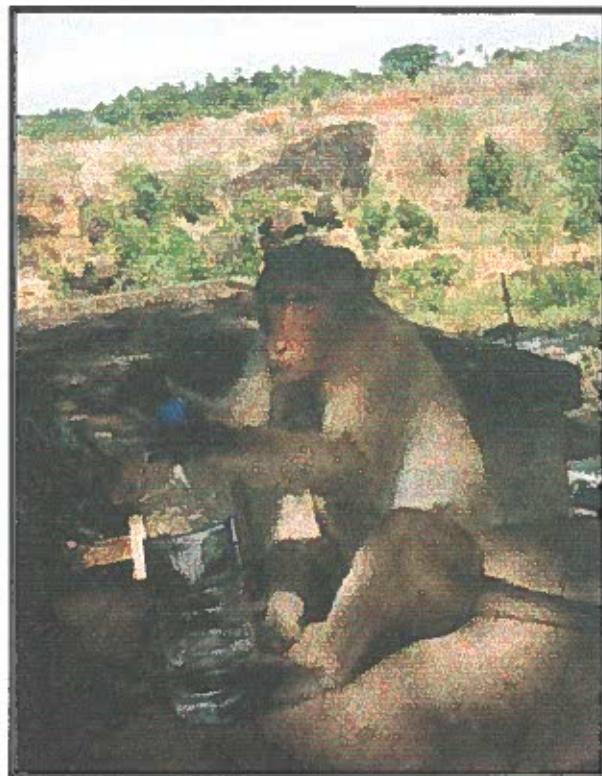


**“Assessing the population density  
and the impact of humans on the  
behaviour of wild Bonnet Macaques in the  
western Ghat region of India.”**

By Anna C. Price



# Project Report

## Introduction

The main purpose of my trip to India was to carry out a project entitled "Assessing the population density and the impact of humans on the behaviour of wild Bonnet Macaques in the western Ghat region of India." I carried out the study over six weeks, from 2<sup>nd</sup> July to 12<sup>th</sup> August 2001.

The aims of this project were:

- 1) To assess the population density of wild bonnet macaques (*Macaca radiata*)
- 2) To study the social behaviour within the bonnet macaque group, and also in encounters with humans
- 3) To witness first hand the problems faced by bonnet macaques due to human interference
- 4) To compare the behaviour of two groups of bonnet macaques, one in an uninhabited area and the other near human habitation.

In addition to carrying out the study I wanted to take the opportunity to learn more about Indian culture and the way of life.

## Methods

I studied two groups of wild bonnet macaques and three groups of macaques which lived near human habitation. Each of these urban groups occupied a temple and its surrounding courtyard. They were found in Papanasam temple, Alagarcoil temple and Muthaiyar temple, all in Tamil Nadu. The wild groups were both in Bandipur National Park in Karnataka.

I had hoped to carry out a population density study by using Wilson and Wilson's (1974) "Methods for censusing Forest-Dwelling Primates." This method involves transecting the location on foot, and calculating the area by multiplying the distance travelled by the visibility on either side of the trail. I would also note the number of bonnet macaques encountered while travelling in order to calculate a population density (individuals per km<sup>2</sup>). I intended to estimate the distance travelled by multiplying the time spent travelling by the speed of travel, roughly 4 km per hour + 1 minute for every 10m of ascent or descent. However, since the macaques occupied relatively small areas it took only minutes to transect the location so I could not make a real estimate of distance. I was able to note the number of individuals in each group but cannot calculate the population density without an idea of the area involved.

The behavioural observations were made using scan sampling, as originally proposed. I scanned the group every 5 minutes and recorded their activities using basic categories: sitting, sleeping, grooming, foraging, eating, locomotion, vigilant, investigating, playing and antagonistic behaviour. The behaviour of each individual was noted under one of these headings, which are mutually exclusive. I spent 2 weeks carrying out preliminary observations to find suitable study sites and to decide on appropriate behavioural

categories and scanning interval. After this I spent 3 days studying each group, from 8:30 am until 6:30pm.

### **Results**

My original hypothesis was that exposure to humans would have a detrimental effect on the macaques' behaviour. I expected to find that the village groups would be more stressed than the forest groups, and that this stress would be expressed by an increase in vigilance and a rise in aggressive behaviour.

I found that while there was a rise in aggressive behaviour there was no real change in vigilance. I also found that village groups have learned new behaviours such as begging, picking pockets and drinking from bottles. The wild troupes spent less time sleeping and more time foraging for food than the village troupes, which have food readily available as they are fed by people and also steal food brought as offerings to the gods.

### **Conclusions**

The only real difficulty I had with the study method was that I was unable to calculate the population density, as mentioned earlier. However, I feel that I met my project aims as I was able to study the social behaviour of the bonnet macaques and make a comparison between the groups and I did manage to find the size of each group, which is in itself an interesting finding.

Unfortunately I had several problems with Teaching and Projects Abroad, the organisation which arranged my trip and were supposed to provide me with back up during my stay. I would like to caution the committee against funding future studies through Teaching and Projects Abroad. I was told that a local guide and a qualified zoologist would accompany me but this was not the case, and I was frequently left unaccompanied. I also felt that my safety was compromised as the staff carried no first aid kits, did not speak adequate English to be able to deal with emergency situations and did not keep records of where I was studying so that they were unaware of where I was or how to contact me. I have made a formal complaint about this to the head office in England, and have included a copy of the letter as an appendix. Dr Slowe has informed me that he is investigating my complaints but, as yet, he has made no assurances that the procedures have or will be changed.

## Results

As described earlier, I scanned the group every five minutes and recorded each the activity of each individual under one of eleven mutually exclusive categories. I then calculated how many individuals were observed engaging in each activity over an hour. This varied from day to day depending on environmental conditions and other factors so, in order to get a more accurate figure, I compiled the data from each day of observation and took the average figure. (Table 1)

However these results could not easily be compared since the number of individuals differed between groups and the number of individuals visible at any time was not constant. To allow a valid comparison I converted the number of individuals under each activity heading into a percentage of the total individuals observed. (Table 2)

### Key

The activities are defined as follows:

**Sit:** the macaque is resting and is not engaged in any other activity

**Sleep:** self-explanatory.

**Move:** locomotion for no purpose other than getting from A to B

**Forage:** collecting food from the environment, e.g. plucking leaves or picking particles from the ground

**Eat:** taking or consuming "free" food, i.e. that which is given by (or stolen from) a person or taken from the altar

**Groom:** cleaning the fur (of self or other group member)

**Play:** usually by 2 or more juveniles; activities include non-aggressive wrestling and chasing

**Aggression:** may be directed at other macaque or at human. Ranged from baring teeth and growling to physical attacks.

**Investigate:** included examining novel or unfamiliar object and also vigilance behaviour – being alert and watching environment.

**Beg:** approaching a person and standing upright holding out hands or reaching for food, often grasping the persons clothing as it does so.

**Infants:** infants that are being carried by their mother and are therefore not engaged in any activity.

Throughout the tables, **Temple groups are shown in bold**, wild groups are in normal text.

**Table 1 - Average Number of Individuals**

	SLEEP	MOVE	FORAGE	EAT	GROOM	PLAY	AGGRESSION	INVESTIGATE	BEG	INFANTS	TOTAL	
<b>8:30 - 9:30</b>	Alagarcoil	14.67	21.67	4.67	7.00	11.33	1.33	0.67	2.33	0.33	6.33	108.00
	Muthaiyar	10.33	11.67	1.33	1.33	3.67	0.00	0.67	0.33	0.00	1.33	54.00
	Papanasam	27.00	28.67	0.00	2.67	21.33	2.33	0.00	2.33	0.00	0.00	181.33
<b>9:30 - 10:30</b>	Bandipur	8.67	17.00	7.67	1.00	11.33	0.67	0.00	0.33	0.00	0.33	71.33
	Kekkanahala	2.67	18.67	23.33	0.67	7.00	1.67	0.00	2.33	0.00	0.33	86.00
	Alagarcoil	21.67	27.33	3.33	2.33	20.00	5.33	2.67	5.00	0.00	1.00	131.33
<b>10:30 - 11:30</b>	Muthaiyar	11.67	18.33	1.00	2.00	6.67	5.33	0.00	0.33	0.00	0.33	69.00
	Papanasam	24.33	25.00	0.00	1.67	27.00	1.67	4.67	10.67	0.00	0.33	172.67
	Bandipur	4.00	30.33	13.00	3.67	10.67	1.33	0.00	6.33	0.00	0.67	110.33
<b>12:00 - 13:00</b>	Kekkanahala	0.33	23.00	25.67	0.67	2.67	0.67	1.33	7.00	0.00	1.67	83.33
	Alagarcoil	21.00	31.00	4.67	5.00	22.67	2.33	2.00	2.33	0.00	4.00	155.00
	Muthaiyar	2.33	22.00	6.33	0.67	2.00	0.00	0.00	0.00	0.33	0.33	48.00
<b>13:00 - 14:00</b>	Papanasam	25.67	31.33	0.33	12.33	18.33	2.33	3.33	11.67	0.33	1.33	200.00
	Bandipur	2.00	20.00	21.00	2.00	12.00	4.00	0.67	3.00	0.00	0.00	106.00
	Kekkanahala	0.33	19.00	40.00	5.00	5.00	2.67	0.67	3.00	0.00	0.33	102.00
<b>14:00 - 15:00</b>	Alagarcoil	2.67	25.33	4.33	13.00	14.67	4.33	3.00	3.00	0.00	7.00	131.33
	Muthaiyar	2.00	12.00	7.67	0.00	0.67	0.00	0.00	1.00	0.00	0.00	29.33
	Papanasam	3.33	26.67	0.33	7.67	9.33	3.67	3.33	6.67	0.33	1.67	127.33
<b>15:30 - 16:30</b>	Bandipur	0.00	37.00	25.33	2.00	8.67	6.00	0.67	2.67	0.00	0.00	114.33
	Kekkanahala	0.33	14.00	17.67	1.00	13.33	0.00	0.00	1.33	0.00	1.00	72.67
	Alagarcoil	10.00	22.33	3.00	11.33	16.67	0.00	0.67	6.00	0.00	3.33	115.00
<b>16:30 - 17:30</b>	Muthaiyar	4.00	21.33	16.00	0.33	9.33	1.33	0.67	0.00	0.00	4.67	84.67
	Papanasam	9.00	17.67	3.67	8.67	9.00	0.00	2.00	0.67	0.00	1.00	89.33
	Bandipur	0.00	27.00	14.67	2.33	14.67	1.67	0.67	4.00	0.00	0.33	96.67
<b>17:30 - 18:30</b>	Kekkanahala	0.33	11.33	9.67	8.67	16.67	3.00	0.00	2.33	0.00	1.67	85.33
	Alagarcoil	8.33	21.33	6.33	7.67	10.67	0.67	2.67	1.00	0.00	2.00	93.00
	Muthaiyar	19.33	25.33	19.00	1.00	10.67	3.67	0.00	1.00	0.00	1.00	119.67
<b>16:30 - 17:30</b>	Papanasam	0.67	38.33	4.00	6.33	13.67	2.00	2.67	7.33	0.00	1.67	141.67
	Bandipur	1.33	29.33	21.67	7.33	10.33	4.67	0.33	3.33	0.00	0.00	104.67
	Kekkanahala	0.00	16.67	21.67	2.00	22.67	0.00	1.67	4.33	0.00	1.00	121.33
<b>15:30 - 16:30</b>	Alagarcoil	1.67	32.00	8.67	3.67	15.67	2.33	2.33	4.00	0.00	7.00	115.67
	Muthaiyar	0.00	28.33	11.67	5.00	13.33	2.33	1.33	1.67	0.00	2.00	106.67
	Papanasam	3.00	27.67	2.00	6.00	13.67	2.00	2.67	1.00	1.00	1.67	129.00
<b>14:00 - 15:00</b>	Bandipur	0.67	38.33	35.00	0.67	13.67	8.00	0.00	2.33	0.00	2.67	138.33
	Kekkanahala	0.00	22.33	18.33	7.33	13.33	1.00	1.33	3.00	0.00	0.00	111.33
	Alagarcoil	0.33	31.67	8.33	13.33	12.33	3.33	2.00	5.00	0.00	3.67	118.33
<b>13:00 - 14:00</b>	Muthaiyar	0.00	32.00	8.67	2.67	11.33	6.67	2.00	2.00	0.00	2.00	110.67
	Papanasam	1.00	27.00	1.00	11.67	10.00	2.00	5.33	3.00	0.00	1.33	106.33
	Bandipur	0.33	36.00	31.67	3.33	8.33	6.33	0.00	2.00	1.00	0.33	117.00
<b>12:00 - 13:00</b>	Kekkanahala	0.00	35.00	20.00	12.33	19.33	2.67	0.67	6.00	0.00	2.00	154.67
	Alagarcoil	1.00	30.00	8.00	9.00	18.33	3.67	1.67	2.00	0.00	2.33	130.67
	Muthaiyar	0.67	24.00	8.33	3.67	7.67	2.67	3.00	5.00	0.00	2.67	91.33
<b>11:00 - 12:00</b>	Papanasam	1.00	18.67	0.00	13.33	8.00	3.00	1.33	2.33	0.00	3.00	93.00
	Bandipur	1.00	27.00	31.67	0.33	7.33	3.00	0.00	0.00	0.00	0.33	100.33
	Kekkanahala	0.00	26.67	30.33	0.00	10.00	5.33	1.00	2.00	0.00	1.00	122.67

## Table 2 - % of Total Individuals Observed

	8:30 - 9:30	9:30 - 10:30	10:30 - 11:30	12:00 - 13:00	13:00 - 14:00	14:00 - 15:00	15:30 - 16:30	16:30 - 17:30	17:30 - 18:30		
Alagarcoil	35.01	10.96	21.69	4.32	7.38	9.39	1.14	0.78	2.47	0.33	6.54
Muthaiyar	26.96	11.36	16.53	1.81	1.81	4.82	0.00	0.97	0.48	0.00	1.93
Papanasam	54.65	13.26	17.70	0.00	1.31	10.58	1.28	0.00	1.22	0.00	0.00
Bandipur	34.01	11.26	24.11	11.79	1.37	15.56	0.87	0.00	0.52	0.00	0.52
Kekkanahala	26.18	2.10	27.42	32.04	1.96	6.32	1.72	0.00	2.00	0.00	0.26
Alagarcoil	32.37	15.52	21.59	2.59	1.80	15.11	4.48	1.94	3.76	0.00	0.84
Muthaiyar	23.36	10.00	18.17	1.04	2.27	6.29	4.78	0.00	0.38	0.00	0.38
Papanasam	44.69	13.42	14.85	0.00	1.22	15.50	1.08	3.26	5.78	0.00	0.19
Bandipur	34.36	2.92	28.75	14.40	2.81	9.08	0.93	0.00	6.16	0.00	0.59
Kekkanahala	20.43	0.27	36.37	31.55	0.53	2.22	0.57	1.07	5.62	0.00	1.37
Alagarcoil	39.06	12.67	19.79	3.19	3.37	14.78	1.40	1.15	1.46	0.00	3.12
Muthaiyar	18.51	4.01	29.58	9.43	0.98	3.17	0.00	0.00	0.00	0.61	0.37
Papanasam	46.15	11.38	16.32	0.17	6.88	9.11	1.36	1.84	5.94	0.20	0.65
Bandipur	36.92	1.45	19.48	22.24	2.33	10.74	3.67	0.61	2.56	0.00	0.00
Kekkanahala	23.87	0.26	23.05	35.01	5.85	3.84	2.04	1.52	4.31	0.00	0.25
Alagarcoil	43.23	1.71	18.62	3.58	8.62	10.85	2.83	2.03	2.09	0.00	6.44
Muthaiyar	14.55	6.06	28.28	14.75	0.00	1.21	0.00	0.00	1.82	0.00	0.00
Papanasam	49.71	2.42	20.22	0.25	6.23	7.80	3.78	2.61	5.52	0.25	1.21
Bandipur	33.30	0.00	27.49	20.89	1.61	9.92	4.01	0.54	2.25	0.00	0.00
Kekkanahala	23.06	0.36	13.07	14.51	1.09	12.54	0.00	0.00	1.16	0.00	0.89
Alagarcoil	36.12	8.59	19.90	2.59	10.02	14.20	0.00	0.52	5.04	0.00	3.02
Muthaiyar	32.04	8.89	24.98	15.35	0.46	10.42	1.85	0.47	0.00	0.00	5.54
Papanasam	42.82	8.03	22.45	3.91	6.53	7.41	0.00	4.94	2.48	0.56	0.87
Bandipur	32.97	0.00	27.07	15.98	1.96	16.11	1.40	0.65	3.54	0.00	0.32
Kekkanahala	41.52	0.25	19.52	7.53	11.87	13.67	2.54	0.00	1.83	0.00	1.26
Alagarcoil	32.04	7.54	24.23	8.28	11.56	9.54	0.48	3.35	1.38	0.00	1.60
Muthaiyar	32.70	15.65	21.50	15.77	0.93	8.71	3.17	0.00	0.78	0.00	0.78
Papanasam	45.92	0.49	27.20	2.78	4.51	9.60	1.32	1.77	5.25	0.00	1.17
Bandipur	23.55	0.96	28.66	23.10	6.88	9.26	3.96	0.24	3.40	0.00	0.00
Kekkanahala	43.72	0.00	13.61	15.16	1.91	20.61	0.00	1.23	3.02	0.00	0.74
Alagarcoil	32.80	1.34	27.46	7.95	3.22	13.42	2.14	2.05	3.62	0.00	6.00
Muthaiyar	38.90	0.00	25.85	10.96	5.17	12.18	2.42	1.22	1.40	0.00	1.91
Papanasam	51.18	2.70	21.45	2.02	5.13	9.96	1.36	2.04	1.95	0.81	1.40
Bandipur	26.85	0.43	28.17	25.59	0.49	9.46	5.60	0.00	1.62	0.00	1.78
Kekkanahala	41.14	0.00	20.20	15.07	5.69	12.86	0.78	1.03	3.23	0.00	0.00
Alagarcoil	30.35	0.20	27.66	7.50	12.33	9.42	2.83	1.55	4.71	0.00	3.45
Muthaiyar	40.05	0.00	27.52	8.55	2.38	10.24	5.77	1.99	2.04	0.00	1.46
Papanasam	41.34	1.01	25.39	0.92	10.68	9.55	1.85	5.14	2.94	0.00	1.16
Bandipur	25.51	0.23	30.29	24.96	4.07	6.81	5.15	0.00	1.95	0.81	0.23
Kekkanahala	35.54	0.00	23.47	14.38	8.10	11.72	1.47	0.44	3.49	0.00	1.39
Alagarcoil	37.07	0.49	23.04	4.70	12.21	13.20	3.46	1.62	2.59	0.00	1.62
Muthaiyar	36.66	0.69	26.38	9.37	4.29	7.95	2.95	3.40	5.41	0.00	2.89
Papanasam	46.20	1.36	19.96	0.00	14.43	7.48	3.97	1.52	2.55	0.00	2.55
Bandipur	35.83	2.38	23.65	26.55	0.24	8.90	2.17	0.00	0.00	0.00	0.28
Kekkanahala	38.94	0.00	23.35	20.48	0.00	9.55	3.72	1.33	1.80	0.00	0.82

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I would like to thank the following people (in alphabetical order) for their help:

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## **Financial Support**

In total, I received £1300 towards the cost of my project: £300 from the James Rennie Bequest and £1000 from the Barnson Bequest. This enabled me to pay Teaching & Projects Abroad's fee of £1395, for which they provided my food, accommodation and transport while carrying out my study.

In addition to this, I spent around £600 on a return flight to India and £120 flying from Edinburgh to London. This amount was my personal contribution, paid by taking out a student loan. I could not have afforded to pay much more than I did, so my study would not have been possible without the assistance I received. The total amount I received was ample as it covered all my expenses while in India.

## **What I gained from my trip...**

I learned a lot from my time in India, from both an academic and cultural point of view. It was a good opportunity for me to carry out independent fieldwork, and also a unique chance to experience life in another culture.

Through carrying out this project, I have been able to perfect observation techniques that I had studied but, until now, never had the chance to use. I also gained the experience of planning and carrying out my own project, which I'm sure will be invaluable to me as I continue my university career.

I spent just over half my time studying the macaque populations at various Hindu temples, which allowed me to witness the customs and rituals of a religion that I previously knew very little about. I also read some Hindu literature, including the Ramayana, in order to learn more about why Hindus consider monkeys to be sacred.

Living with an Indian family was also a real "eye-opener" for me. Although the family I stayed with were quite well off compared to others in their village they really had very little compared with an average Scottish family. For example, their home had no running water just a "trough" in the back yard, so they often bathed in a nearby river. There was hardly any furniture in the house, and what they had seemed quite makeshift: deckchairs and an old car seat instead of a sofa. Despite having very little, Murugan, Vali, Saranya & Vignesh were more than happy to share their home and possessions with me. I was touched (but slightly embarrassed!) that they insisted on sleeping on the floor so that I could have the only bed.

We promised to keep in touch, and I am making plans to return to India once I graduate. Vali is head teacher of the village school and has invited me to come back and teach there.



# Itinerary

## **27<sup>th</sup> June**

Arrived in Chennai at 5am, rested at a hotel for a couple of hours than took an 8-hour train journey to Madurai. Here I was met by 2 Teaching & Projects Abroad staff who took me for dinner, then to a hotel in Sivakasi.

## **28<sup>th</sup> June**

Met with some other UK students who have just arrived in India to teach English. Mr Rajendran, the Indian manager of Teaching & Projects Abroad took us all out for breakfast and briefed us on Indian customs and what to expect. The other students were taken to their placements but I had to wait until Monday to begin mine.

## **29<sup>th</sup> June**

The staff had organized a "get-together" for all the volunteers at Kovalam, in Kerala. I spent all day travelling to get there, on three different buses and 2 rickshaws.

## **30<sup>th</sup> June**

Ponraj, the assistant manager gave me a bit more information on my project over breakfast with all the volunteers. I spent the day at Trivandrum Zoo with 5 other volunteers.

## **1<sup>st</sup> July**

We had to leave Kovalam earlier than expected as the former governor of Tamil Nadu had been arrested for corruption and a transport strike was planned, so if we didn't leave immediately we may be stranded. Again, it took all day to get back to Sivakasi.

## **2<sup>nd</sup> July**

The transport strike finished in the evening, so I was driven to Papanasam at night. Another student, John Ambrose, was studying primates in the same area but was doing it purely out of interest and was therefore not writing anything up.

## **3<sup>rd</sup> July**

John and I looked at several sites around Papanasam while I tried to decide on a suitable study site. I saw both bonnet macaque and common langur.

## **4<sup>th</sup> July**

We looked at another site, Karaiyar Dam, but I decided that the temple was the best place to see macaques interacting with humans so I returned and spent the rest of the day there.

### **5<sup>th</sup> July**

Tried to find a site where wild bonnet macaques could be seen. I found a troupe within Mundanthurai reserve area but they were living near the electricity board headquarters and were very tame.

### **6<sup>th</sup> July**

I spent the morning at Muthaiyar Temple and the afternoon at Papanasam temple, doing preliminary observations to decide on suitable scanning intervals and to see the range of behaviours shown.

### **7<sup>th</sup> & 8<sup>th</sup> July**

Spent the weekend at Cape Comorin with other volunteers. Unfortunately I was ill and spent most of my time in the hotel while they enjoyed the beach.

### **9<sup>th</sup> July**

Moved from the hotel to staying with a local family in Papanasam. The mother, Vali, is an English teacher and the father, Murugan, is a lab technician. They have two daughters, Vignesh (14) and Saranya (12). They were all friendly and made me feel very welcome.

### **10<sup>th</sup> – 12<sup>th</sup> July**

Spent each day, from around 9am, in Papanasam temple. I scanned the group every 10 minutes and noted each individual's behaviour. I also noted the types of food which the macaques were eating as I hope to compare the diet of these urban macaques with a group of wild macaques.

### **13<sup>th</sup> July**

I went to the temple for sunrise, as I wanted to see if the macaques sleep in the temple area or if they come each day from somewhere else. The macaques were already there when I arrived at 5:45am so I assume they live at the temple permanently. In the afternoon I travelled to Bangalore by train.

### **14<sup>th</sup> July**

I telephoned Avanti Mallapur, a zoologist who has done some work on bonnet macaques, and arranged to meet up. We had already been in touch by e-mail before I came to India and she had offered to give me some advice on my project. I spent the rest of the day exploring Bangalore.

### **15<sup>th</sup> July**

Met Avanti and her husband, Anand, who works at Bannerghatta zoo and nature reserve. Avanti advised that I should scan the group more frequently and make sure I made the observations at the same time each day. She also suggested that I should observe more groups in order to make a more valid comparison.

### **16<sup>th</sup> July**

I spent the day at Bannerghatta with Avanti and Anand. Anand is a vet and showed us the animals he is treating at the moment (17 lions!) then Avanti went over observation techniques with me. In the evening I caught a sleeper train to return to Papanasam.

### **17<sup>th</sup> July**

I arrived back at Papanasam early afternoon and spent some time observing the macaques at Papanasam temple. A biology graduate called Malathi joined John and me at Papanasam, although she was looking at langurs rather than macaques.

### **18<sup>th</sup> and 19<sup>th</sup> July**

Carried out observations at Muthaiyar Temple from 8:30am until 6:30pm with two 30-minute breaks each day. There was a festival on at the temple so thousands of people were camping there and bathing in the nearby river.

### **20<sup>th</sup> July**

John abandoned his study to go travelling and Malathi went to Chennai to visit her cousins. I spent the morning (8:30 – 11:30) at Papanasam temple, and then travelled to Madurai in the afternoon. I wanted another group of temple monkeys to study and was told that Madurai would be a good place.

### **21<sup>st</sup> – 23<sup>rd</sup> July**

Spent each day (8:30 – 6:30) at Alagarcoil Temple, just outside Madurai. I found it a bit harder to observe the macaques here as they often went inside the temple, but non-Hindus are forbidden to enter so I couldn't go in.

### **24<sup>th</sup> July**

Got the train back to Papanasam at 4am so that I could spend the afternoon and evening at the temple.

### **25<sup>th</sup> July**

Observed the macaques at Papanasam temple again while Teaching & Projects Abroad tried to arrange a permit for me to study the wild macaques within the tiger reserve.

### **26<sup>th</sup> July**

Spent the morning at Papanasam temple then met with the Mundanthurai forest ranger in the afternoon. He told me that I could not study in the reserve without a research permit, which Teaching & Projects Abroad refused to obtain.

### **27<sup>th</sup> July**

Went back to Muthaiyar temple and spent the day there. It was much quieter than my previous visits as the festival was winding down and most people had gone home. The forest was a mess with the impact of the campers though, with trees cut down and litter everywhere.

### **28<sup>th</sup> July**

Travelled by train to Kollam. It was a pleasant ride through monsoon rainforest but the train was a little delayed so I missed the ferry and had to spend the night in Kollam.

### **29<sup>th</sup> July**

Took the backwater ferry from Kollam to Allepey, then a bus from Allepey to Kottayam and another bus from there to Thekkady. I basically spent the entire day from 9:30am until almost midnight travelling.

### **30<sup>th</sup> July**

Malathi arrived in Thekkady and we met with the Forest Officer. He told us that we were unlikely to see bonnet macaques there but that langurs were common. A trek through the forest confirmed this, so I decided to go back to Bangalore where Avanti could help me find a suitable study site.

### **31<sup>st</sup> July**

I was driven to Sivakasi to get a train to Bangalore but I felt unwell on reaching Sivakasi and had to see a doctor. She advised me to rest for a while so I spent the night in a nearby hotel.

### **1<sup>st</sup> August**

I met with Mr Rajendran in the morning and explained my reasons for going to Bangalore. I also expressed my concern that many of the staff do not speak adequate English and none of them carry first aid kits or have first aid training. He seemed unconcerned so I decided to inform the English office instead.

### **2<sup>nd</sup> August**

I reached Bangalore at 6am having spent the night on a sleeper train. I spoke to Avanti, who said that her husband could arrange the necessary permit for me. I then talked to Dr Anindya Sinha, a zoologist from the Indian Institute of Science. He is currently studying bonnet macaques at Bandipur National Park and advised me to try to get permission to study there.

### **3<sup>rd</sup> August**

Avanti and Anand took me to meet the head of Karnataka Forestry Department, Mr Chakrabarti. He gave me permission to study in Bandipur, so I caught the bus to Mysore that afternoon.

### **4<sup>th</sup> August**

I took a bus from Mysore to Bandipur. Mr Chakrabarti had arranged for me to stay in one of the Forestry Department huts with an MSc student from New York called Ayesha. She is studying the leopards at Bandipur. I could not begin my work until Mr Kanthuraj (Bandipur Forest officer) had returned from his weekend away.

### **5<sup>th</sup> August**

Mr Kanthuraj had not returned so I took the opportunity to see more of Bandipur by going on a safari trip. The wildlife was amazing: elephants, gaur, chital, sambar, wild dogs, peacocks, a serpent eagle and a mongoose, as well as macaques and langurs.

**6<sup>th</sup> August**

Met with Mr Kanthuraj, who briefed me on which sites would be safe to study in. I then met Dr Sinha who showed me two groups of bonnet macaques and gave me some advice on identifying individuals. I spent the afternoon making notes on the distinguishing individuals to help me differentiate between groups.

**7<sup>th</sup> August**

I spent the day studying the main group, which lives near our accommodation in Bandipur. I was a bit too nervous to venture further having been warned to be inside by sundown because the leopards can be dangerous!

**8<sup>th</sup> August**

I spent the morning at Bandipur and the afternoon at Kekkanahala, the point where the park crosses the border between Karnataka and Tamil Nadu.

**9<sup>th</sup> August**

Spent the whole day at Kekkanahala, despite the rain. Monsoon season was just beginning.

**10<sup>th</sup> August**

Spent the morning at Kekkanahala and the rest of the day at Bandipur. In the evening I was invited to meet Mrs Singh, whose father is the Maharaja of Mysore and created Bandipur on his estate. She loves wildlife and was very interested to hear about my study.

**11<sup>th</sup> August**

Another day at Kekkanahala, from 8:30 – 6:30.

**12<sup>th</sup> August**

My last day at Bandipur, observing the macaques from 8:30 – 6:30 again.

**13<sup>th</sup> August**

Took a bus to Mysore, then got the express train to Chennai. Arrived there late at night and got a rickshaw to the hotel.

**14<sup>th</sup> August**

I spent the day in Chennai, sightseeing and shopping.

**15<sup>th</sup> August**

Flew home.