

REFERENCES

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5. NOTE ON A COLLECTION OF RATS FROM GOREGAON-MALAD IN BOMBAY

It has been noticed that the species frequency in the rat population from the City of Bombay has changed (Deoras 1966). During a survey of the rats in Bombay it was observed (Joshi 1961) that *Rattus rattus* predominated in former suburbs like Dadar. As urbanisation increased the field rat was found to predominate even in the heart of Bombay, when it was only 2 per cent in the total collection in 1910 (Deoras 1966). During the studies in the eastern suburbs of Bombay it was noticed that the house rat still predominated in the fields of Bhandup (Joshi 1966). But the ex-ratio of both *Rattus rattus* and *Bandicota bengalensis* in the collection was different than that erstwhile found in the heart of Bombay or its suburbs like Dadar (Prasad 1967). The area around Bhandup is becoming heavily industrialised even though there are fields surrounded by a rural type of housing. The western suburbs of Bombay have fields, hills and forest vegetation and it has not yet been heavily industrialised. The frequency of different species in the rat population and the sex-ratio had not been seen for the western suburbs. The present studies were started with this idea, in December 1972 and this note gives an idea of the frequency of species in the rat population in Goregaon-Malad as compared with the collections from the heart of Bombay, and other suburbs (Table 2).

Table 3 gives the percentage of species of rats collected in this area, wherein *Rattus rattus* is 69 per cent and *Bandicota* 13.9 per cent. In both species the females predominate; a phenomenon similar to that seen in the heart of Bombay as well as the erstwhile suburbs. Both figures are just the opposite of what was seen in 1967 at Bhandup. Table 1, gives the percentage of *Rattus rattus* and *B. bengalensis* collected in the entire Bombay, in the suburbs only and their sex-ratio in the heart of Bombay, and erstwhile suburbs as compared to what was available at Bhandup.

The second point of interest is that at Goregaon-Malad *Rattus rattus* continuously dominates for all the six months as opposed to *B. bengalensis* in the entire Bombay. However the *R. rattus* predominance is common to both the suburbs i.e. Bhandup and Goregaon-Malad.

Thirdly *R. norvegicus* is not seen the suburbs and the various spe-

COMPARATIVE ACCOUNT OF THE PERCENTAGE OF *R. rattus* AND *B. bengalensis* COLLECTED IN ENTIRE BOMBAY, SUBURBS ONLY, GOREGAON-MALAD, BHANDUP ONLY; AND THEIR SEX RATIO FOR THE WARDS AS WELL AS LAST TWO AREAS, 1973.

Percentage of <i>R. rattus</i> in entire Bombay	Percentage of <i>B. bengalensis</i> in entire Bombay	Percentage of <i>R. rattus</i> from suburbs only	Percentage of <i>B. bengalensis</i> from suburbs	Percentage of other rats in the collection (entire)
22.5	46	67.1	13.1	<i>R. norvegicus</i> 17.7 <i>B. indica</i> 0.4 <i>Mus. musculus</i> 3.9 <i>Suncus caeruleus</i> 9.6
Heart of Bombay (Tardeo, Kamathipura and Nagpada) <i>R. rattus</i>	Heart of Bombay Percentage of <i>B. bengalensis</i>	Erstwhile suburbs (Dadar, Mahim and Dharavi) Percentage of <i>R. rattus</i>	Erstwhile suburbs Percentage of <i>B. bengalensis</i>	
14.7	43.4	25.2	48.2	
M. 34.0	M. 39.6	M. 32.0	M. 35.0	
F. 55.6	F. 49.2	F. 56.5	F. 52.7	
Percentage of <i>R. rattus</i> from Goregaon-Malad	Percentage of <i>B. bengalensis</i> from Goregaon and Malad	Percentage of <i>R. rattus</i> from Bhandup (Fields only) 1966-67	Percentage of <i>B. bengalensis</i> from Bhandup (Field) 1966-67	Percentage of other rats collected at Bhandup (Field-Area) 1966-67
69.5	13.9	26.43	19.9	<i>B. indica</i> 0.52
M. 36.5	M. 38.83	M. 69.0	M. 75.0	<i>Laggada nagarum</i> 45.3
F. 57.5	F. 51.35	F. 30.0	F. 24.6	<i>B. gigantia</i> 6.3
				<i>Golunda gujerati</i> 1.6
M: Male				F: Female

TABLE 2

COMPARATIVE PERCENTAGE OF COLLECTION OF RATS FROM THE ENTIRE BOMBAY
AND THE WESTERN SUBURBS OF GOREGAON AND MALAD

	<i>R. rattus</i>		<i>B. bengalensis</i>	
	Entire Bombay	Goregaon and Malad	Entire Bombay	Goregaon and Malad
December, '72	23.6	68	44.5	—
January, '73	25.4	69.3	43.9	12.7
February, '73	23.6	69.3	46.2	14.5
March, '73	21.7	69.4	48.8	16.7
April, '73	19.5	71.05	50	14.11
May, '73	19.3	71.7	47.9	14.57
June, '73	20.4	70	48.1	10.77

TABLE 3

DETAILS OF DIFFERENCES IN THE *R. rattus*, *B. bengalensis* COLLECTIONS AT
GOREGAON AND MALAD

(A) Total all rats collected:	16,623	
<i>Rattus rattus</i> sp. in this collection:	8,777	
Percentage of <i>R. rattus</i> in the collection:		69.5%
<i>Rattus rattus rufescens</i> Grey:	8,657	
Males	2,791	32%
Females		57%
Immature		11.2%
<i>R. rattus wroughtoni</i> Hinton:	141	
Males		58%
Females		83%
<i>Rattus rattus (rufescens)</i> Grey:		
With white patches on the pectoral region:	6	
Males		50%
Females		50%
(B) Total <i>Bandicota</i> Collected:	Nos. 1,479	
Percentage of <i>B. bengalensis</i>		73.86%
Males		38.83%
Females		51.35%
Percentage of <i>B. indica</i>		26.13%
Males		35.93%
Females		52.44%
Total <i>B. indica</i> collected	Nos. 384	
Percentage of <i>B. indica malabarica</i> collected in the total of <i>B. indica</i>		17.00%
Males		36.60%
Females		63.39%

cies of rats (Table 1) found at Bhandup are not represented at Goregaon-Malad.

The studies are being continued and the detailed results would be soon published.

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6. THE INDIAN MOORHEN (*GALLINULA CHLOROPUS*) BREEDING IN KERALA

Sálim Ali says in the BIRDS OF KERALA that the breeding of the Indian Moorhen has not been recorded in Kerala. M. C. A. Jackson, too, does not seem to have found it breeding. In April 1974 two Zoologists and I watched Moorhens with chicks at Munnar, the High Ranges, Kerala State.

On 7-iv-1974 Sri S. Satheesh Chandran Nair, Research Scholar in Zoology, Kerala University, and I were watching birds near the Ramaswami Iyer Head Works of the Kerala Electricity Board. At 17.30 hrs, in the stagnant waters of the stream above the spillway, we found an Indian Moorhen with two tiny, jet black chicks. While the parent swam about near the thick growth of reeds on the Park-side bank, the young ones walked about on the floating mat of dead and broken reeds at the edge of the reed-bed. The young could swim, though they did so only when they had to cross a gap in the mat of reeds. Half an hour later in a different part of the pool we came across the same or another pair of Moorhens with two chicks of the same age and colour as the first.

On the 14th we were again at the same spot at 1745 with Sri V. S. Vijayan, Research Scholar working under Dr. Sálim Ali, and we saw a single pair of Moorhens only. They had two chicks with them, but these were more than double the size of those seen a week earlier. Moreover these had the throat and the underparts whitish. The fact that no other pair of Moorhens could be found on the 14th makes me wonder whether there were, after all, only this one pair in the area. If that sus-



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