ISSN 2250-3153

Study on population status in relation to urban development in few selected nesting site of rock bee colonies, *Apis dorsata F*

G.Venkatesh

Principal, Abhyudaya Degree College, Chikkabellandur Bangalore 560035

Abstract- Apis dorsata,F inhabits varied nesting sites in urban,rural,wild areas. The number of colony during the study period 1987-89 was 72 and during the period 2013-14 was 07 some of the anthropocentric development activities have contributed to the decline in the number of colonies

Index Terms- Bee Population Urbanisation Air Pollution

I. INTRODUCTION

The study area is located in Bangalore district is has many suitable nesting site for Apis dorsta as the vegetation cover and the climatic factors was good. There were six perennial sites in Bangalore CBD (venkatesh1991).Apis dorsata nest orientation preference were reported (shankarreddy1988) which abundant in the study but as per the orientation and height from the ground level. However the seven site were perennial in nature as there were many huge to moderate trees yielding nectar and pollen (Venkatesh and Desraj 1994) .

Since 1990 there were a spate of anthropogenic development activities in the form of widening of roads, construction of flyovers and metro rail projects and number of multistoried buildings. The vehicular traffic has increased ten folds since 1995 with increase in the IT Industry and spate migration of human population from neighboring districts and states.

They present study attempts to isolate the reasons for the cause of deserting the combs by Apis dorsata colonies from perennial sites.

II. MATERIALS & METHODS

Periodical data is collected during the study period 1987-1990 and the data collected during the year 2013/14 with respect to number of Apis dorsata F colony number through enumeration at each site within the Bengaluru CBD are utilized in the present communication.

Collection of meteorological data from IMD Bengaluru

Collection of Air pollution data from Karnataka State Pollution control board Web site.

Number plants providing forage source is collected through enumeration.

III. RESULTS AND DISCUSSION

The Bengaluru CBD provides a number of nesting sites suitable for Apis dorsata F colonies to colonies as far as the height from the ground and orientation (Shankar reddy1988) is considered. The meterological factors are well within the tolerance limits of Apis dorata .

The table 1 shows the traffic volume of the Bangalore city,in the CBD especially around the nesting site the intensity of vehicular movement is relatively higher in volume and duration on any given day as compared to other regions of the city .the reason being that the selected study sites are the core center of the CBD.

Table 2 shows the population status Apis dorsata F colonies during the study period 1987 90 44-85 during rainy season & spring season and 2013-14 .These sites were of perennial in nature during study period 1987-1990.. However the current enumeration shows that site no 2,4,5 have become redundant nesting sites. Nesting site no 7 Is permanently lost, as result of construction of wall connecting the upper stand to the base of the seating arrangement of the football stadium.

TRAFFIC DENSITY IN BENGALURU DISTRICT FOR THE YEAR 2013

Sl.no	Type of vehicle	Total number	Percentage
1	Two Wheelers	3385343	68.8
2	LMV	1061343	21.03
3	HTV	107518	2.2
4	AUTORICKSHWA	136871	2.8
5	HGV	69440	1.4
6	OTHERS	159520	3.2
	total	4920035	

COLONY POPULATION AT SELECTED NESTING SITES OFAPIS dorsata

Sl.No	Nest site location	Number of colonies	
		1987-90	2013-14
1	SJP Bldg-KR Circle	8-14+3	0-2
2	MS Bldg	2-5+1	0
3	Visvewaraiah tower	8-16+1	1-3
4	Mayo hall	9-15+2	1-2
5	BSNL	1-3+0	0

6	KG ROAD	3-6+1	0
7	Football stadium	13-27+4	0
	total	44-85+12	2-7

The removal of forage yielding trees as result of widening the roadways in and around all nesting site has deprived the colonies of pollen and nectar sources. Which are the main source of food resource for the bee colonies, both for the larvae and adult bees. The honey bee stores considerable amount of nectar and pollen during the flowering season to tide over the food scarcity during non flowering/sparse flowering seasons.

The second important condition is the air pollution, according to Karnataka State Pollution Control Board information made available on its website air pollution march2013-april2014 shows, Respirable Solid Particulate Matter has exceeded the permissible levels and added to that Carbon dioxide, carbon monoxide sulphur oxides nitrous oxides levels have increased in the CBD if one considers the volume and extended movement of vehicular traffic.

The present study indicates that Apis dorsata which is one of the highest honey producers under wild conditions is being slowly wiped out of the urban habitat as a result of anthropocentric development of the city. In the name of development / accommodating the ever increasing vehicular volume,which turns out be 2:1 human to automobile ratio. The city planners are implementing skewed model where there is a need for holistic model as far Ecology is concerned.

The earlier study (venkatesh&reddy) indicates the various factors for decrease in the colony size& number at the selected nest sites. The present scenario of total loss of colonies from the perennial nest sites is cause of concern for the bee scientists, as the social insect which one of the largest pollinator of wild and cultivated vegetation in the tropical climates especially in India and neighboring countries.

IV. Conclusion

The present study indicates that development activity centered around anthropocentric necessities proves to be fatal from environment point of view .At least the remaining nesting site areas of Apis dorsata F colonies may be considered for holistic development. Which in turn will be useful in restoring biodiversity of the region.

Acknowledgement

I thank my parents for all the good things that made me capable of expressing these observations on the aspect of ecology and Prof(Retd).C.Chandrasekhara Reddy who introduced me into this wonderful world of social insect.

References

[1] Reddy .M.S 1998 Studies on the factor on selection of resting Sites by Apis dorsata F Ph.D thesis BUB
[2] Ramesh.S.P Reddy .M.S &Reddy.C.C 1988 Studies on the Colony population of Apis dorsata.Indian Bee.J pp57-58
[3] Venkatesh and Desraj 1994 Distribution of bee flora, their Abundance and blooming period with Special reference to Apis dorsata.F Current Researches in plant sciences Pp191-198
[4] Venkatesh .G-1991 Studies on the Migratory Behaviour of Apis dorsata F Ph.D thesis, BUB
[5] WWW.KSPCB.GOV.IN
[6] WWW.KSRTO.IN
[7] WWW.IMD/BENGALURU

Authors

First Author – G.Venkatesh, Principal, Abhyudaya Degree College, Chikkabellandur Bangalore 560035