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Peoples Biodiversity Registrar of Kolkata, Ward Number 27: A Peoples Document Prepared as per Directive of National Green Tribunal (NGT) by Rammohan College

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Abstract: As per National Biodiversity Authority (NBA) Guidelines, National Green Tribunal (NGT) has issued one order to West Bengal Biodiversity Board, Government of West Bengal to prepare a complete Peoples Biodiversity Registrar (PBR) of Kolkata Municipal Corporation (KMC). A project has been initiated in the year 2017-18. Rammohan College has been approached to prepare a PBR of Ward No. 27 and form a Biodiversity Management Committee (BMC). A complete PBR has been prepared and submitted to West Bengal Bio Diversity Board, Department of Environment, Government of West Bengal.

Keywords: KMC, PBR, NGT, NBA, BMC

I. INTRODUCTION

India has a wealth of biological diversity as well as traditional and modern knowledge. It takes up 2.4% of the global area, which accounts for 7–8% of the species that are known to exist globally (Singh 2016). As of right now, the nation has documentation for over 91,200 animal and 45,500 plant species (NBA 2018). In accordance with the 1992 Convention on Biological Diversity, the Indian government created the Biological Diversity Act (BDA) in 2002 and regulations in 2004. Conservation of biological diversity, sustainable use, and just and equitable distribution of benefits resulting from the exploitation of natural resources are all mandated by CBD. The Convention notably upholds the sovereign right of the states to preserve their biological variety. Each member state of the Convention is required to implement a National Biodiversity Strategy and Action Plan (NBSAP) or an equivalent instrument for the conservation of biodiversity. As a result, the BDA (2002) established the National Biodiversity Authority (NBA) to advise and assist the Biodiversity Management Committee (BMC) in developing the People's Biodiversity Register (PBR) (NBA 2013). Three tiers have seen the deployment of BDA (2002): the NBA at the national level, further there are State, District, Block, Town, Village BMCs. The primary goal of BMC formation in relation to PBR preparation is to raise public awareness and foster a sense of community among people and their environment (NBA, 2004). Notably, as of January 2022, the nation had assisted in the establishment of 2,65,458 PBRs and 2,76,690 BMCs by the corresponding SBBs in 28 states. According to Biological Diversity Regulations (2004), every local person's BMC is required to prepare for PBR. The APBR is a legally binding document that provides, in accordance with NBA criteria, detailed information about the entire biodiversity of a region, including its flora, fauna, and other resources under a BMC's jurisdiction. According to the updated PBR rules of the NBA (2013), a PBR booklet consists of five annexes, which include general information on the panchayat's BMC, a list of "vaidis," "hakims," and regional traditional healthcare practitioners who reside and/or biological resources that are under the village's jurisdiction; a list of people who the villagers believe possess Traditional Knowledge (TK) about biodiversity in agriculture, fisheries, and forestry; a list of schools, colleges, departments, universities, government institutions, non-governmental organizations, and individuals involved in the PBR preparation and details of access eight Union Territories?

The documenting of PBR entails a thorough understanding of natural resource science as well as, and perhaps more crucially, an approach to involving various stakeholders in order to foster ownership and awareness of biodiversity and its conservation. Furthermore, the documenting of PBR is an effort to sustain traditional knowledge and wisdom by establishing more formal institutions to support them and, more crucially, by establishing new contexts for their ongoing practice (Gadgil et al. 1993, 2000). The goal of decentralized participatory resource management systems is achieved by employing Participatory Rural Appraisal (PRA) (Chambers 1992) to gather the data recorded in a PBR (Chambers 1983). The PBR approach also aids in the documentation and advancement of an evaluation of a range of traditional conservation-oriented resources and activities (Gadgil & Berkes, 1991). The purpose of this material, according to Sharma (1997), is to empower individuals who are not part of the mainstream of science, administration, or politics. Consequently, a group of individuals with expertise It's crucial to consider both social and technical factors when creating PBRs. The ability to conduct surveys, plan meetings and workshops, and communicate with locals—preferably in their native tongue—is crucial for PBR preparedness.

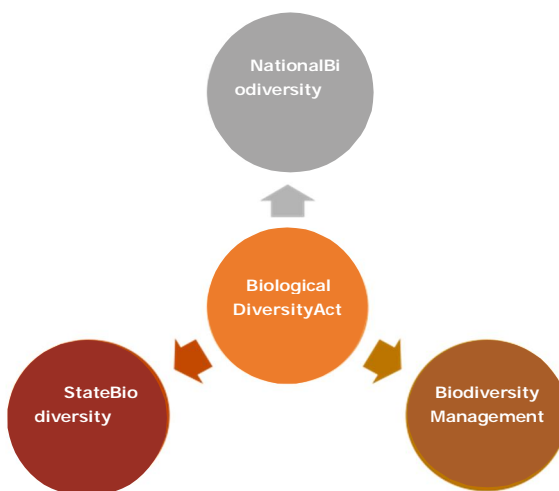


Figure 1. Structure suggested by National Biodiversity Act

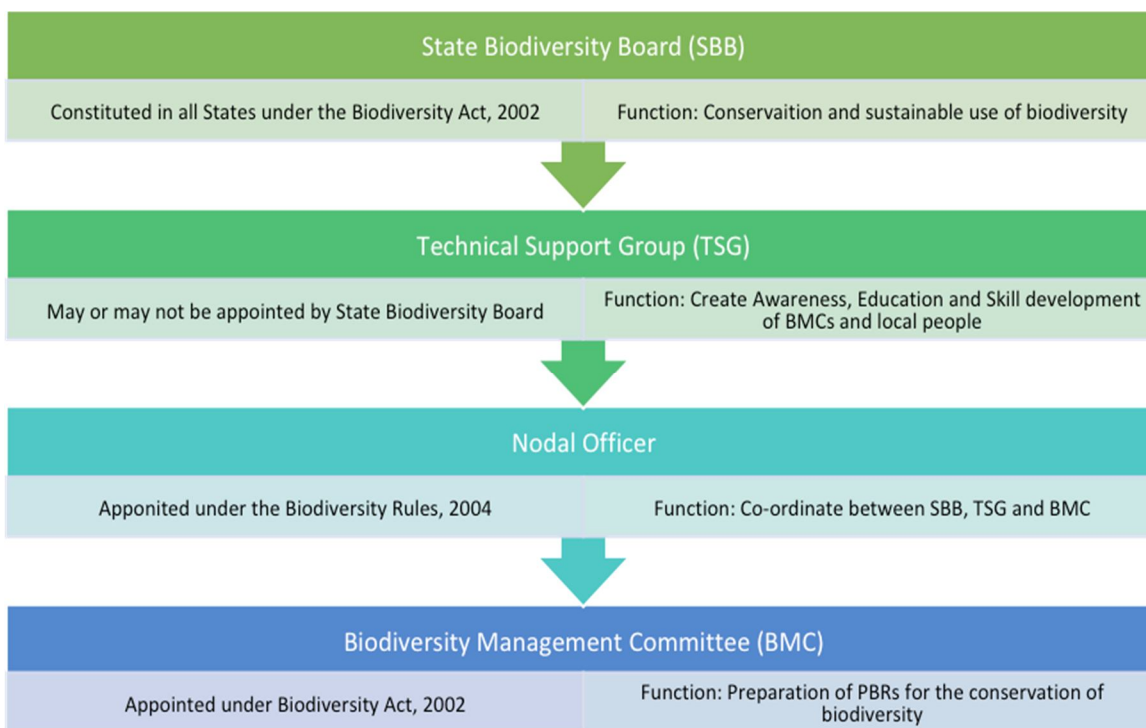


Figure 2. Structure of State Biodiversity Management Group

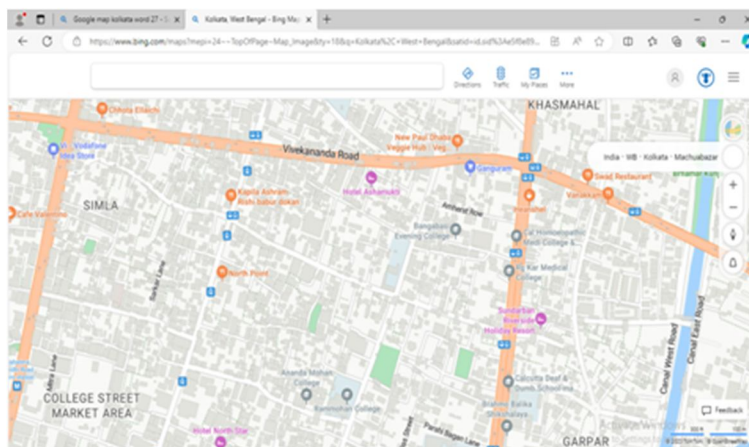


Figure 3. Map of Ward Number 27 of KMC

II. THE BMC

- 1) Prof. Jayanti Sen, Associate Professor & BMC Member, Department of History, Rammohan College
- 2) Dr. Krishnendu Sarkar, Associate Professor and IQAC Convener & BMC Member, Department of Botany, Rammohan College
- 3) Dr. Saswati Sanyal, Principal & BMC Secretary, Rammohan College
- 4) Mrs. Meenakshi Gupta, Counselor & BMC Member, Ward No. 27
- 5) Dr. Samiran Mondal, Assistant Professor & BMC Member, Department of Chemistry, Rammohan College
- 6) Dr. Samarendranath Banerjee, NAAC Coordinator & BMC Member, Rammohan College.
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III. THE HERITAGE

There is a distinct allure to the old buildings of north Kolkata. From the spacious courtyards to the extensive balconies, and the vast windows to the intimate corners where time and space seem to warp into one, decadent architecture in this part of the city has its own delight. At the same time, the story of this decadence is inseparably linked to decrepitude, decay and decline. Old buildings in north Kolkata are dying, and so is the culture contained within.

By the mid-1850s, Calcutta had developed into two areas that essentially segregated the inhabitants by color. The British “White Town” included many of the colonial buildings and municipal offices still in use today, while “Black Town” was comprised of large parts of North **Kolkata**, including old rajbaris, the houses of influential locals. There are two broad ways to label the colonial structures in the city— the landmark, iconic, postcard monuments and the historic, sometimes crumbling, but still functional public offices. In some cases, both these labels intersect.

No. 85 Amherst Street, now 85A, Raja Rammohun Sarani, a three storeyed structure illustrative of the colonial style architecture of the 19th century, is said to have been the residence of the family of Raja Rammohun Roy. His two sons Radhaprasad and Ramaprasad lived there with their families.

The building was known as the Simla House. The name "Simla House" may have originated because the area was called "Simla". This house was supposedly designed by one W. Wood and is structured completely in the colonial Georgian style. It is gathered from the various writings that this property was purchased by Rammohun from one Francis Mendes for Rs. 13,000/- probably in the year 1815.

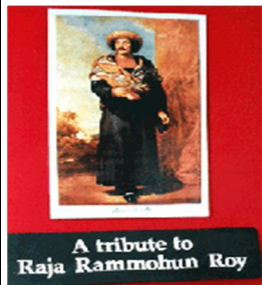
It was in this house that Rammohun Roy for a while held weekly meetings of the Atmiya Sabha, the precursor to the Brahmo Samaj. At the time of the departure for England in 1830 Rammohun Roy disposed of all his properties in Calcutta other than the Simla House to meet the expenses of his journey abroad. The house then continued to be in the possession of the descendants till the 1960s when it passed into the hands of miscreants and encroachers.

In the year 1972, on the occasion of the bi-centenary birth anniversary celebration of Rammohun Roy, the Rammohun College initiated a move to acquire the building with its adjoining lands measuring 76 cottahs. The Simla House remained in the hands of Rammohun's successors till 1960's. Afterwards it gradually passed into the hands of unauthorised Rammohun College occupiers, and had been subjected to undesirable vandalism. Took the initiative to rescue the house from its wretched plight and with active assistance of the State and Central Government acquired it in 1986

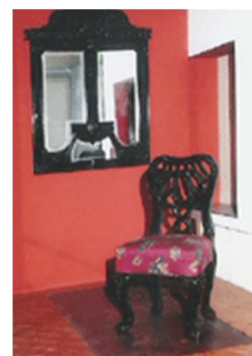
THE

MUSEUM

EXHIBITS



The memorabilia in the museum consists of photographs, sketches, paintings and excerpts from the writings of Rammohun and others reproduced, wherever possible, in facsimile. Also period furnitures and diorama representaions designed to recreate the times. Together they not only give us the glimpses of the various facets of one of the greatest personalities of the modern age, but at the same time take us back into a period in history when India was at crossroads, and Rammohun heralded the coming of the modern age.



The exhibits in the museum may be classified under the following heads:

- Books
- Commemorative Items
- Photographs
- Paintings and Sketches
- Panels and Dioramas
- Period furniture
- Death mask of Rammohun

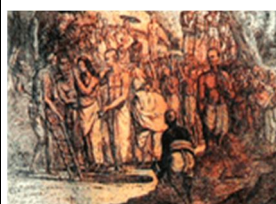


Death Mask of Rammohun

The museum has recreated the replicas of period furniture and attire of Rammohun to depict the style of living at that time. We have paid attention to recreate the with exact detail to reflect the style that was prevelant during that era.

A humble beginning of the Memorial has been made by the Rammohun College with grants received from the Central Government. Department of Culture, Victoria Memorial Hall and kind donations received from the public.

The museum has amongst its prized exhibits the death mask of Rammohun. The replica has been made by the reputed sculptor Sri Niranjan Pradhan, the original of which was brought from Bristol by Shivanath Shastri.



Solvyn's depiction of Sati

The museum has a large collection of books by Rammohun. There are originals and facsimilies dating back to the early 18th century. The museum has a large collection of commemorative items that include Stamps & Special Covers, historical documents related to Rammohun. Among the important possessions include the funeral document of Rammohun and other items. Among the photographs there are the houses associated with Rammohun; the memorial at his ancestral place and at Arnos Vale; relics of his house at Radhanagar etc.

The museum has the paintings of Sutte by renowned artists of that age such as B. Solvyns. There are also paintings and sketches of followers and contemporaries of Rammohun in the 19th century, notable of them being Prince Dwarkanath Tagore, Tarachand Chakraborty etc.

The museum presents through several pictorial depictions and dioramas Rammohun's ideals, his life and work, as also some significant historical events of that period.

IV. KOLKATA POLICE MUSEUM

Whether you have only a few minutes or an hour or two, enjoy a delightful visit to the Kolkata Police Museum. Occupying 2,000 square feet, the Museum reflects the rich tradition and history of policing in our city. The Museum seeks to collect, preserve and interpret objects related to the history of Kolkata Police. Our exhibit includes various items seized during the freedom struggle of the country.



Exhibit of Kolkata Police Museum

The Old Kolkata



House of Raja Rammohan Roy and Rammohan Roy Memorial Museum



Servant Quarter of House of Raja Rammohan Roy



In house Gate of House of Raja Rammohan Roy.



Laha Bari gate



Shib Bari (200 year old)



Mallik Bari





Old Kolkata is Famous for “Cast Iron” Structures

The Sacred Tree

In Hindu Mythology, Sacred Trees are found, in the context of Biodiversity Conservation, this tree usually belongs to Genus *Ficus* sp. These trees are “Umbrella Species” which is shelter of many species of insects, birds, mammals etc. Usually sacred trees are associate with any God. Two of them are found in the ward.



Temples: Old temples are also part of this ward, each of which has their own history



Shiv Mandir of 200 year old



Jhulanbari of 150 year old, deity Radha-Krishna



Kali Mandir 100+ year old



Gourio Math

Demography and Festival: This ward is of 6 Km² and 93426 is the total population. 61.23% is of Non-Bengali Speaking and 98.43% belongs to Hindu community. Durga Puja, Chot Puja and Kali Puja is the main festival of the area. Main Occupation Business (Iron and Steel). 29.23% are migrant labour.

Taboo: Nothing found

Traditional Medicine: Nothing special, Mixture of Lime & Turmeric in sprain, Tulsi to prevent cough & Cold.

V. BIODIVERSITY OF THE WARD







Tree Diversity

1) <i>Ficus virens</i> Aiton	Moraceae
2) <i>Ceiba pentandra</i> (L.) Gaertn.	Bombacaceae
3) <i>Ficus benghalensis</i> L.	Moraceae
4) <i>Senna siamea</i> (L.) Irwin et Barneby	Fabaceae
5) <i>Sterculia foetida</i> L.	Sterculiaceae
6) <i>Spathodea campanulate</i> P. Beauv.	Bignoniaceae
7) <i>Pterospermum acerifolium</i> (L.) Willd.	Sterculiaceae
8) <i>Drypetes roxburghii</i> (Wall.) Hurus.	Euphorbiaceae
9) <i>Terminalia catappa</i> L.	Combretaceae
10) <i>Thespesia populnea</i> (L.) Soland. ex Correa	Malvaceae
11) <i>Peltophorum ferrugineum</i> (DC.) Heyne	Fabaceae
12) <i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae
13) <i>Ficus religiosa</i> L.	Moraceae
14) <i>Terminalia alata</i> Heyne ex Roth	Combretaceae

SCIENTIFIC NAME	FAMILY	JAN-FEB	MAR-APR	MAY-JUNE	JULY-AUG	SEP-OCT	NOV-DEC	Comment
<i>Solanum nigrum</i> L.	Solanaceae	+	+	-	+	+	+	Annual herb
<i>Eragrostis tenella</i> (L.) Beauv. ex R. & S.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	+	+	+	+	+	+	Perennial herb with wiry rhizome
<i>Oldenlandia corymbosa</i> L.	Rubiaceae	-	-	-	+	+	+	Annual herb
<i>Oldenlandia paniculata</i> L.	Rubiaceae	-	-	-	+	+	+	Annual herb
<i>Dactyloctenium aegyptium</i> (L.) Wild.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
<i>Ageratum conyzoides</i> L.	Asteraceae	+	-	-	+	+	+	Annual herb
<i>Vernonia cineria</i> (L.) H. Rob.	Asteraceae	+	+	+	+	+	+	Perennial herb
<i>Blumea lacera</i> (Roxb.) DC.	Asteraceae	+	+	-	-	-	+	Annual herb
<i>Lindenbergia indica</i> (L.) Kuntz.	Scrophulariaceae	-	-	-	+	+	+	Annual herb
<i>Mazus rugosus</i> Lour.	Scrophulariaceae	-	-	-	+	+	-	Annual tiny herb
<i>Vandellia crustacea</i> (L.) Benth.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
<i>Lindernia oppositifolia</i> (Retz.) Muk.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
<i>Vandellia hirsuta</i> Buch.-Ham. ex Benth.	Scrophulariaceae	-	-	-	+	+	+	Annual prostrate herb
<i>Phylla nodiflora</i> (L.) Greene	Verbenaceae	+	+	+	+	+	+	Perennial prostrate herb
<i>Rungia parviflora</i> (Retz.) Nees	Acanthaceae	+	+	-	-	-	+	Annual herb
<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	+	+	+	+	+	+	Perennial prostrate herb
<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
<i>Alternanthera paronychioides</i> A. St.-Hil.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
<i>Alternanthera ficoides</i> (L.) Sm.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
<i>Amaranthus viridis</i> L.	Amaranthaceae	+	-	-	-	+	+	Annual herb
<i>Amaranthus spinosus</i> L.	Amaranthaceae	+	+	-	-	+	+	Annual prickly herb
<i>Tillanthera filoxeroides</i> (Mart.) Moq.	Amaranthaceae	-	-	+	+	+	-	Annual herb
<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	+	+	+	+	+	+	Perennial herb with somewhat woody rootstock
<i>Nasturtium indicum</i> Oliv.	Brassicaceae	-	-	-	+	+	+	Annual herb
<i>Mecardonia procumbens</i> (Mill.) Small.	Scrophulariaceae	+	+	-	-	-	+	Annual prostrate herb
<i>Pilea microphylla</i> (L.) Liebm.	Urticaceae	-	-	-	+	+	-	Tiny annual herb
<i>Laportia interrupta</i> (L.) Chew.	Urticaceae	-	-	-	+	+	-	Annual herb with stinging hairs
<i>Nicotiana plumbaginifolia</i> Viv.	Solanaceae	+	+	-	-	+	-	Annual herb
<i>Cyperus rotundus</i> L.	Cyperaceae	+	+	+	+	+	+	Perennial herb with corm
<i>Cyperus iria</i> L.	Cyperaceae	-	-	+	+	+	-	Annual herb
<i>Kyllinga brevistylis</i> Rottb.	Cyperaceae	+	+	+	+	+	+	Perennial rhizomatous herb
<i>Andrographis paniculata</i> (Burm. f.) Nees	Acanthaceae	+	+	-	-	+	+	Annual/perennial herb
<i>Andropogon aciculatus</i> (Retz.) Trin.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
<i>Dentella repens</i> (L.) J. R. Forst & G. Forst.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
<i>Dentella serpyllifolia</i> Wall. ex Craib.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
<i>Oplismenus burmannii</i> (Retz.) P. Beauv.	Poaceae	+	+	+	+	+	+	Perennial herb
<i>Digitaria ciliaris</i> (Retz.) Koeler	Poaceae	-	-	-	+	+	-	Annual herb
<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae	-	-	-	+	+	-	Annual herb
<i>Chloris barbata</i> Sw.	Poaceae	+	-	-	+	+	+	Annual herb
<i>Sida rhombifolia</i> L.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
<i>Sida acuta</i> Burm.f.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
<i>Sida cordifolia</i> L.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
<i>Crotalaria pallida</i> Aiton	Fabaceae	+	-	-	+	+	+	Annual herb
<i>Euphorbia hirta</i> L.	Euphorbiaceae	+	+	+	+	+	+	Perennial herb
<i>Euphorbia parviflora</i> L.	Euphorbiaceae	+	-	-	+	+	+	Annual herb
<i>Euphorbia microphylla</i> L.	Euphorbiaceae	+	-	-	-	=	+	Annual prostrate herb
<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	-	-	+	+	+	-	annual herb
<i>Phyllanthus fraternus</i> Webster	Euphorbiaceae	-	-	+	+	+	-	Annual herb
<i>Tribulus terrestris</i> L.	Zygophyllaceae	-	-	+	+	+	+	Prostrate herb
<i>Centella asiatica</i> (L.) Urban	Apiaceae	+	+	+	+	+	+	Perennial herb with runner

<i>Physalis minima</i> L.	Solanaceae	-	-	-	+	+	+	Annual herb
<i>Solanum sisymbriifolium</i> Lam.	Solanaceae	+	+	+	+	+	+	Perennial prickly herb
<i>Evolvulus nummularius</i> (L.) L.	Convolvulaceae	+	+	+	+	+	+	Perennial prostrate herb
<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	-	-	+	+	+	-	Annual prostrate herb
<i>Coldenia procumbens</i> L.	Boraginaceae	+	+	+	+	+	+	Perennial herb
<i>Heliotropium indicum</i> L.	Boraginaceae	-	-	+	+	+	-	Annual herb
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	-	-	+	+	+	-	Annual aromatic herb
<i>Leucas cephalotes</i> (Roth) Spreng	Lamiaceae	-	-	+	+	+	-	Annual herb
<i>Leonurus japonicus</i> Houtt.	Lamiaceae	+	+	-	-	-	+	Annual herb
<i>Scoparia dulcis</i> L.	Scrophulariaceae	-	-	+	+	+	+	Annual herb
<i>Cleome viscosa</i> L.	Capparidaceae	-	-	+	+	+	-	Annual herb
<i>Cleome rutidosperma</i> DC.	Capparidaceae	+	+	+	+	-	-	Annual herb
<i>Cleome gynandra</i> L.	Capparidaceae	-	-	+	+	+	+	Annual herb
<i>Bulbostylis densa</i> (Wall.) Hand. -Mazz.	Cyperaceae	-	-	+	+	+	-	Annual herb
<i>Brachiaria reptans</i> (L.) Gardner & Hubb.	Poaceae	+	+	+	+	+	+	Perennial herb
<i>Brachiaria distachya</i> (L.) Stapf.	Poaceae	+	+	+	+	+	+	Perennial herb
<i>Dichanthium annulatum</i> (Forsk.) Stapf.	Poaceae	-	-	+	+	-	-	Annual herb
<i>Echinochloa stagnina</i> (Retz.) P. Beauv.	Poaceae	-	-	+	+	+	-	Annual herb
<i>Leptochloa chinensis</i> (L.) Nees	Poaceae	-	-	+	+	+	-	Annual herb
<i>Hybanthus enneaspermus</i> (L.) F. Muell.	Violaceae	+	-	-	+	+	+	Annual herb

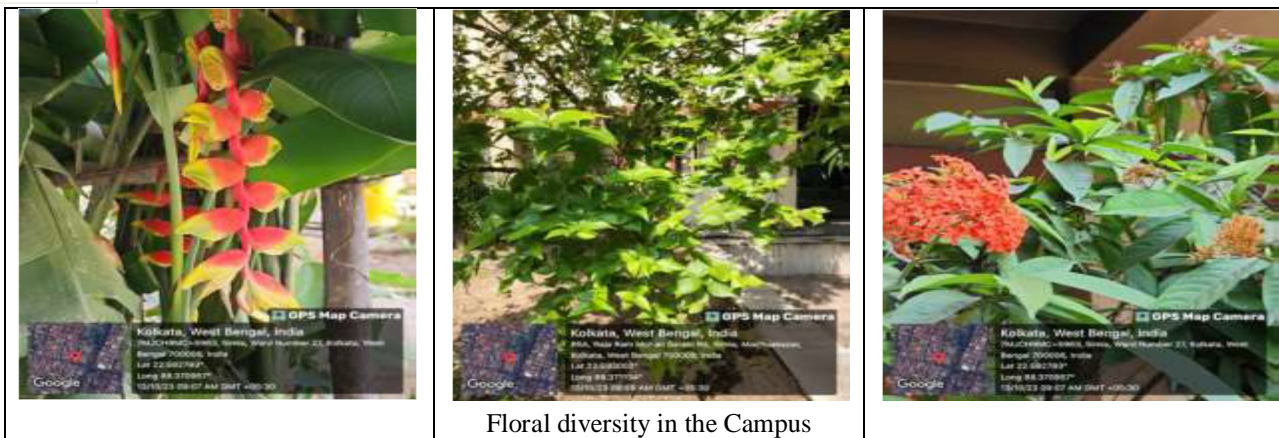
VI. HERB & SHRUB DIVERSITY AND THEIR OCCURRENCE IN WARD 27, KMC

Name	Photographs	Name	Photographs
<i>Alternanthera ficoides</i>		<i>Mikania scandens</i>	
<i>Basella alba</i>		<i>Oxalis corniculata</i>	
<i>Coccinia cordifolia</i>		<i>Peperomia pellucida</i>	

<i>Dentella repens</i>		<i>Sida rhombifolia</i>	
<i>Eclipta prostrata</i>		<i>Wedelia trilobata</i>	

Selected photographs of the weeds found in the campus





VII. ANIMAL DIVERSITY

Butterflies found in Ward No 27. are listed below with their predicted population trend calculated from collected sample of six years.

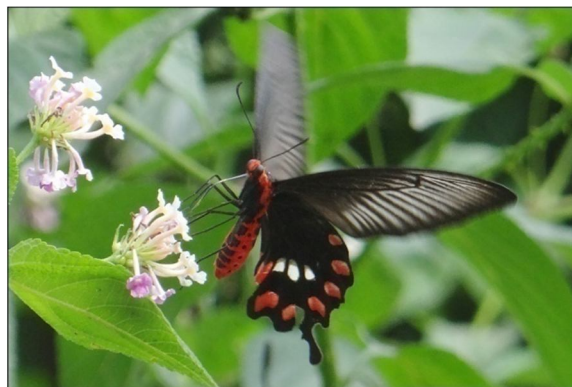
Species	Common Name	Population Trend
I. Family: Papilionidae		
a. Sub-family: Papilioninae		
1	<i>Graphium agamemnon</i> (Linnaeus)	Tailed Jay
2	<i>Papilio polytes</i> Linnaeus	Common Mormon
3	<i>Atrophaneura aristolochiae</i> (Fabricius)	Common Rose
II. Family: Pieridae		
a. Sub-family: Coliadinae		
4	<i>Eurema hecabe</i> (Linnaeus)	Common Grass Yellow
5	<i>Catopsilia pyranthe</i> (Linnaeus)	Mottled Emigrant
b. Sub-family: Pierinae		
6	<i>Cepora nerissa</i> (Fabricius)	Common Gull
7	<i>Appias libythea</i> (Fabricius)	Striped Albatross
8	<i>Leptosia nina</i> (Fabricius)	Psyche
III. Family: Nymphalidae		
a. Sub-family: Danainae		
9	<i>Danaus chrysippus</i> (Linnaeus)	Plain Tiger
10	<i>Euploea core</i> (Cramer)	Common Crow
b. Sub-family: Satyrinae		
11	<i>Melanitis leda</i> (Linnaeus)	Common Evening Brown
12	<i>Mycalesis perseus</i> (Fabricius)	Common Bushbrown
13	<i>Ypthima huebneri</i> Kirby	Common Four-ring
e. Sub-family: Biblidinae		
14	<i>Ariadne ariadne</i> (Linnaeus)	Angled Castor
15	<i>Ariadne merione</i> (Cramer)	Common Castor
f. Sub-family: Nymphalinae		
16	<i>Junonia atlites</i> (Linnaeus)	Grey Pansy
17	<i>Tarucus nara</i> Kollar	Rounded Pierrot
18	<i>Zizeeria karsandra</i> (Moore)	Dark Grass Blue
19	<i>Euchrysops cnejus</i> (Fabricius)	Gram Blue
20	<i>Chilades lajus</i> (Stoll)	Lime Blue
IV. Family: Hesperidae		
a. Sub-family: Hesperinae		
21	<i>Borbo cinnara</i> (Wallace)	Rice Swift



Graphium agamemnon (Linnaeus)



Papilio polytes Linnaeus



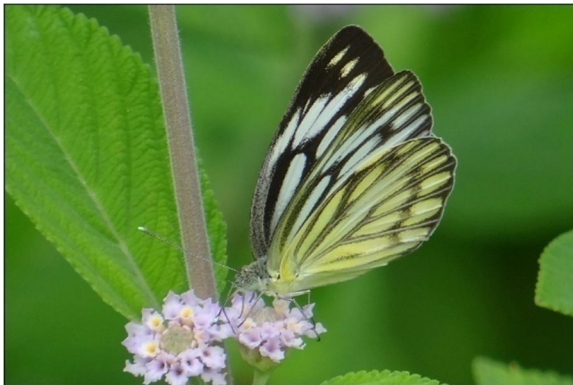
Atrophaneura aristolochiae (Fabricius)



Eurema hecabe (Linnaeus)



Catopsilia pyranthe (Linnaeus)



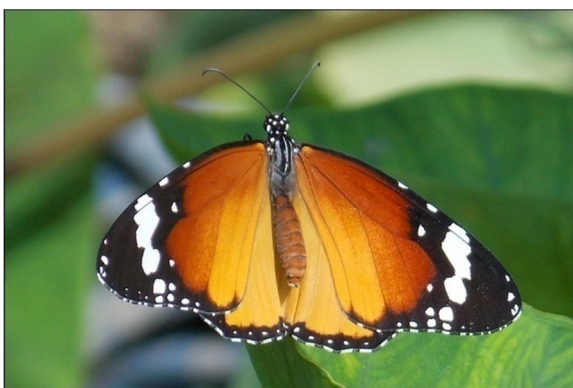
Cepora nerissa (Fabricius)



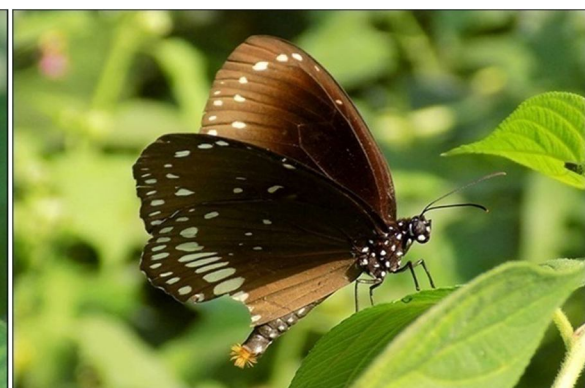
Appias libythea (Fabricius)



Leptosia nina (Fabricius)



Danaus chrysippus (Linnaeus)



Euploea core (Cramer)



Melanitis leda (Linnaeus)



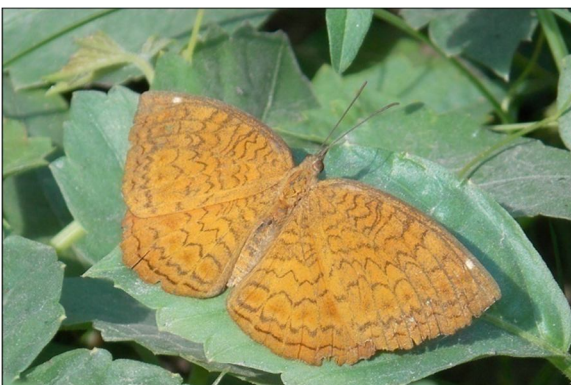
Mycalesis perseus (Fabricius)



Ypthima huebneri Kirby



Ariadne ariadne (Linnaeus)



Ariadne merione (Cramer)



Junonia atlites (Linnaeus)



Tarucus nara Kollar



Zizeeria karsandra (Moore)



Euchrysops cnejus (Fabricius)



Chilades lajus (Stoll)



Borbo cinnara (Wallace)

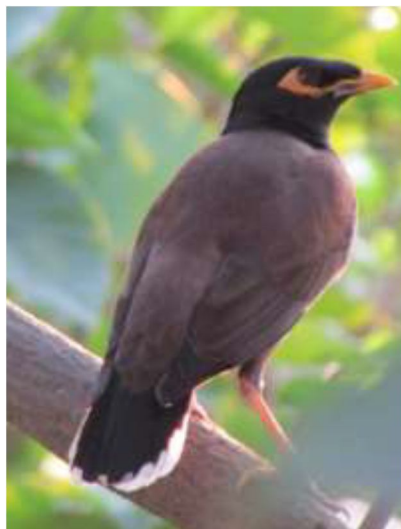
Passer domesticus



Corvus splendens



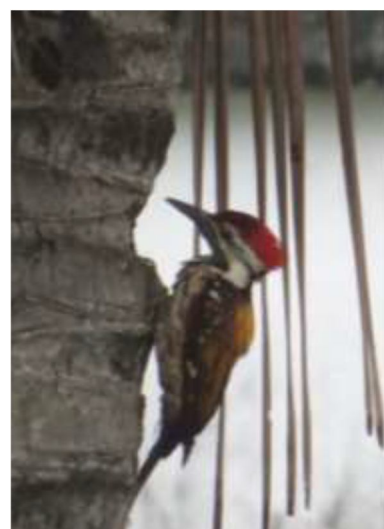
Acridotheres tristis



Halcyon smyrnensis



Picus sp



VIII. ACKNOWLEDGMENT

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