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Metric No. 3.3.2

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Attachment

1. Copy of the cover page, content page and first page of the publication by the faculty year- wise with highlighted ISBN Number.



  
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# Zoology

B.Sc. Semester V (CBCS)

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**Dr. Umesh S. Indurkar**  
**Dr. Deepak S. Bansod**  
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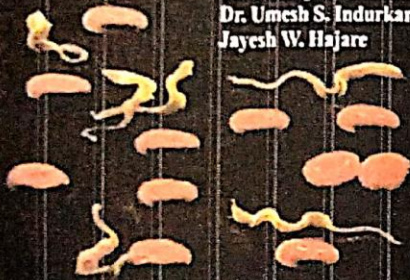
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B.Sc. Semester V (CBCS)

Paper - I: PARASITOLOGY  
DISCIPLINE SPECIFIC ELECTIVES (DSE)  
(Core Paper IX)

Dr. Deepak S. Bansod  
Dr. Ganpat D. Deshmukh  
Dr. Pankaj R. Chavhan  
Dr. Umesh S. Indurkar  
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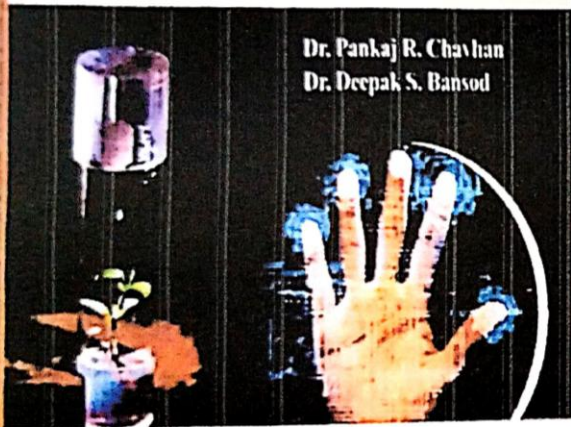
  
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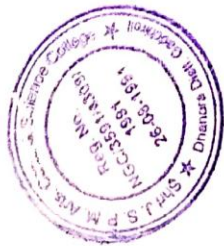
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## Chapter - 16

# Avian Diversity of Chaparala Wildlife Sanctuary

Dr. Pankaj R. Chavhan, Dr. Sachin D Misar, Dr. P J Khinchi

Department of Zoology,

Shri JSPM Arts, Commerce and Science College, Dhanora.

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Chaparala Wildlife Sanctuary is encircled by the Pranhita River and is home to a variety of wild animals, including a few endangered species. There are 76 species of avian-fauna identified in Chaparala Wildlife Sanctuary, with three bird species listed as endangered. The goal of the field survey was to prepare the checklist and observe the biodiversity of birds. A total of 76 bird species from 39 families were identified. The Accipitridae family of birds is the most common. The study of bird fauna was starts from December 2011 to December 2012. Binoculars were used to make observations, and a Fujifilm finepix camera was used for photos.

The Chaparala wildlife sanctuary is located in the Gadchiroli district of Maharashtra, India (19°31'N; 74.62°E; 79°49'N; 74.35°E). The sanctuary is approximately 134.78 square kilometres in size. The majority of the area is covered with dense forest and Murgikunta tank, Raikonta tank, Wainganga river, Komatkunta tank, Chandankhedhi nala, and other tanks and water bodies may be found nearby it.

The Chaparala wildlife sanctuary, a haven for animals and endangered species. The land's flora is complemented by a dense canopy of vegetation, which is primarily made up of southern tropical dry deciduous forests. Teak, Arjun, Salai, Mahua, Ghoti, Bel, Dhawada,



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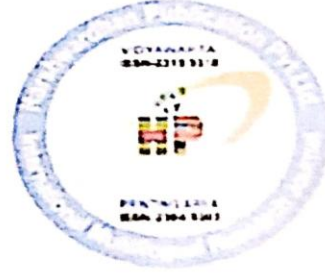
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## DIMENSIONS OF GREEN CHEMISTRY

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### Introduction:

The idea of greening science created in the business and administrative networks as a characteristic development of contamination counteraction drives. In our endeavors to further develop crop assurance, business items and medications, we additionally made accidental damage our planet and people.

By the mid-twentieth century, a portion of the drawn out adverse consequences of these progressions couldn't be disregarded. Contamination stifled a large number of the world's streams and corrosive downpour crumbled woods wellbeing. There were quantifiable openings in the world's ozone. A few synthetic compounds in like manner use were associated with causing or straightforwardly connected to human malignant growth and other antagonistic human and ecological wellbeing results. Numerous administrations started to manage the age and removal of mechanical squanders and discharges. The United States shaped the Environmental Protection Agency (EPA) in 1970, which was accused of ensuring human and natural wellbeing through setting and upholding ecological guidelines.

Green science makes the EPA's command a stride further and makes another reality for science and designing by requesting that scientific experts and architects plan synthetic compounds, substance cycles and business items in a way that, at any rate, maintains a strategic distance from the production of toxics and waste.

Green Chemistry isn't governmental issues. Green Chemistry is certifiably not an advertising ploy. Green science isn't an unrealistic fantasy.

We can foster synthetic cycles and earth-accommodating items that will forestall contamination in any case. Through the act of green science, we can make options in contrast to dangerous substances. We can plan compound cycles that decrease squander and lessen request on reducing assets. We can utilize measures that utilization more modest measures of energy. We



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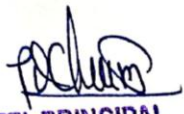


  
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## ELASTICITY OF MATERIALS

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### Introduction:

In material science, elasticity is the ability of a body to resist a distorting influence and to return to its original shape and size when the force is removed. When an external unbalanced force is applied to a body; it gets deformed due to relative displacement of molecules. Due to this relative displacement of molecules, forces are developed inside the body which tends to oppose the deforming forces. If the deforming forces acting on the body are removed then the body is acted upon by internal elastic forces developed within the body which try to restore to its original dimensions. Solid objects will deform when adequate load are applied to them, if material elastic, the objects will return to its initial shape and size. Some bodies which return exactly to its original dimensions after removal of deforming forces are called perfectly elastic bodies. The reasons for elastic behavior are different for different materials.

### Hooke's Law of Elasticity:

In 1676 Robert Hooke Physicist from U.K. discovered a relationship between stress and strain and has given fundamental law of elasticity. This relation is known as Hook's Law of elasticity.

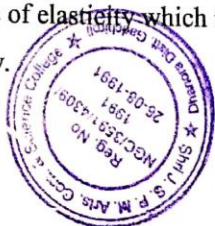
It states that within the elastic limit, the force required to deform elastic body is directly proportional to the distance of deformation, regardless of how large that distance becomes.

### Elastic moduli:

In engineering the elasticity of material is quantified by the elastic modulus. Such as the Young's modulus, (Y) Bulk modulus, (K) and Modulus of rigidity ( $\eta$ ) which measure the amount of stress required to achieve a unit of strain. Higher modulus shows that the material is harder to deform.

### Young's modulus (Y):

The modulus of elasticity which is related to change in length of a body is called Young's modulus of elasticity.



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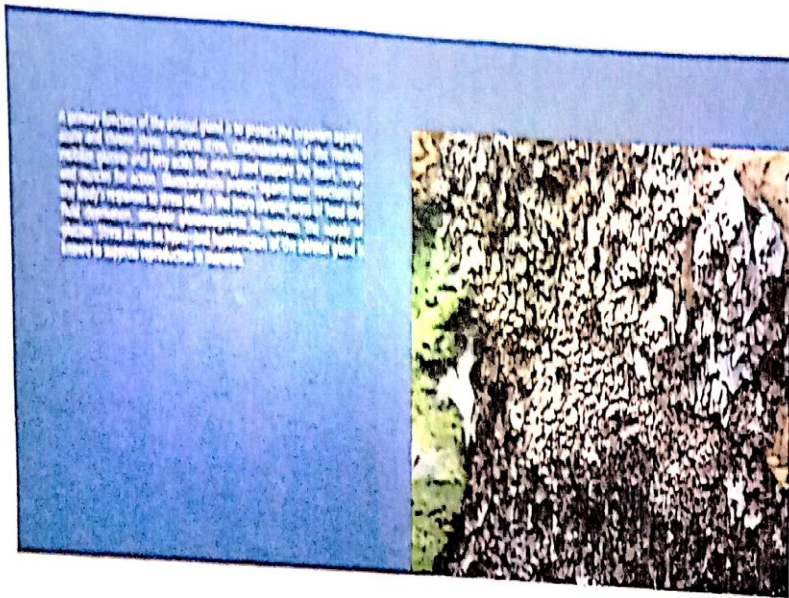
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## Light and Ultrastructure of Adrenal Gland of Bat

*Taphozous kachhiensis* (Dobson)



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