

DEPARTMENT OF ZOOLOGY

NEWSLETTER

FROM THE PRINCIPAL'S DESK

I would like to congratulate the H.O.D. and the faculty members of Department of Zoology for bringing out the Fourth volume of “Zoo-hunt”. The focal theme “**Realizing Zoology**” will surely acquaint us with the latest discoveries and innovations in the field of animal science. Hopefully the new issue of this newsletter will prove as a basis for unremitting enhancement of the knowledge of Zoology and will help to develop research aptitude among the readers. My blessings and good wishes for this newsletter.

Dr.Fr. Vazhan Arasu

FROM H.O.D'S DESK

Dear readers, once again it gives me immense pleasure to introduce the fourth volume of “Zoo-hunt” highlighting the events research works, achievements and activities of the Department. Keeping in mind this year being declared as the year of academic excellence this initiative of the department will prove to enlighten the students hidden talents. I thank Mrs Runa Paul and Dr Priyanka Sinha and also my dear students Ms Meghali and Ms Meenal Raikwar for their meticulous effort. I also thank all the faculty and student contributors for the successful publication of this newsletter.

Dr. P. Mukherjee

ZOOHUNT-2017

Volume IV | Issue I



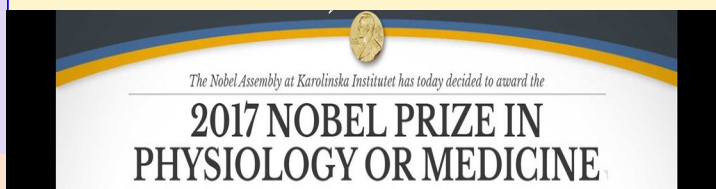
St. Aloysius' College
(Autonomous) Jabalpur
Re Accredited 'A' grade By NAAC

Air-Breathing Fish 'Hibernate'

Most fish would be left high and dry during drought periods when the bodies of water they inhabit shrink and disappear — but African lungfish aren't most fish. Even under normal conditions, lungfish are air breathers, relying on gills that interact with functional lungs to provide their oxygen. But when temperatures heat up and their watery habitats disappear, African lungfish respond by tunnelling underground and generating a leathery enclosure that retains moisture but still allows enough air flow around their bodies for them to keep

breathing — with no water required. — eg. *Protopterus dolloi*, *Protopterus aethiopicus*, *Protopterus amphibius* and *Protopterus annectens*

By—Shilpi Vishwakarma

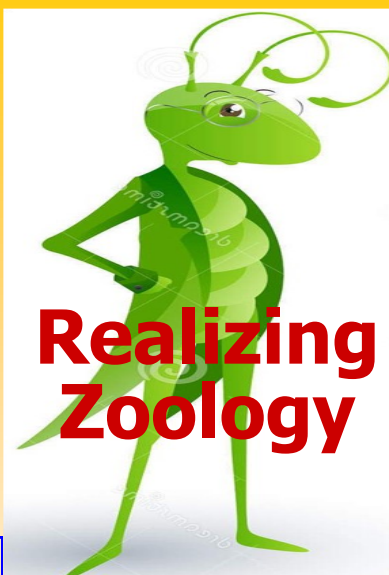


MICHAEL ROSBASH

JEFFREY C HALL

MICHAEL W YOUNG

Discovery of molecular mechanisms controlling the circadian rhythm



Realizing Zoology

Highlights

- ⇒ Newsflash
- ⇒ Research Viewpoints of faculty members
- ⇒ Students contributions
- ⇒ Departmental activities
- ⇒ Students achievements

Editors

Dr. Parnashree Mukherjee

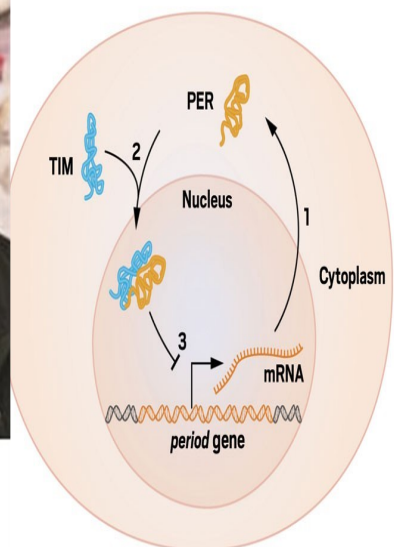
Mrs Runa Paul

Dr. Priyanka Sinha

Student Editors

Ms Meghali Sinha

Ms Meenal Raikwar



2017–18

Year of Academic Excellence

Faculty Corner

Gems of the Department

Ms Anu Mishra received young scientists award in National conference on EITFES 017 at Allahabad on 23.09.2017



Ms Ayushi Singh, student of B.Sc V sem [CBZ Group] selected for NCC Youth Exchange Programme has visited Srilanka.

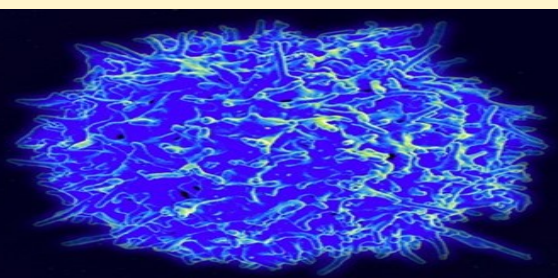
Devendra Singh Dhurvey selected as DSP, M.P. Police M.P., Police



The Ever-Expanding T-Cell World:

University of Melbourne immunologist Angela Pizzolla and her colleagues described a type of tissue-resident memory T cell (Trm) in the nose that, unlike other Trm cells, can develop from “killer T cells” without antigen exposure or growth-factor stimulation. Trm cells are just one of the subtypes (or subtypes of subtypes) in the growing list of T-cell varieties that scientists have discovered in relation to our immune system.

By-Dr. Manju Dixit



Beetles found in Road sides of Jabalpur city: Dr. P. Mukherjee

Two spot ladybird beetle
Adalia bipunctata (Linnaeus, 1758)
Family: Coccinellidae



Zygogramma bicolorata
(Parthenium beetle /Mexican beetle) Family:Chrysomelidae.

Aphodius rufipes (night-flying dung beetle)
Family:Scarabaeidae



Aspidimorpha sanctaecrucis
(Golden Tortoise Beetle)
Family:Chrysomelidae



Pheropsophus sp [Bombardier beetle]
Family:Carabidae

Tigers from MP's Panna park are growing in population, but challenges lie ahead 2017 : By-Dr.Priyanka Sinha

MP's Panna National Park, which was reported tiger-less in 2008, now has 35 big cats, some of which are radio-collared. Photo: Mail Today

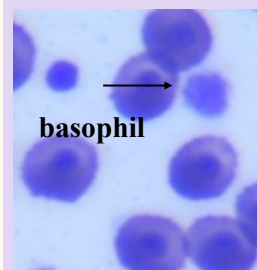
About a month ago, wildlife managers in Madhya Pradesh trying to identify a particular tiger in Bandhavgarh National Park that had made an appearance in the reserve recently were astounded by what they found. The tiger, a massive male, was in fact originally from the Panna National Park, whose forests are located some 150 km as the crow flies.

Tigers are known to move out of areas in an attempt to carve out their own territories. What was however insightful and also satisfying for wildlife managers at the Panna National Park was the park's turnaround. From a reserve without any tigers in early 2009, it had turned into hub from where tigers had started spreading out to neighbouring habitats, a phenomenon crucial for the survival of healthy tigers, especially since big cat habitats had become fragmented.

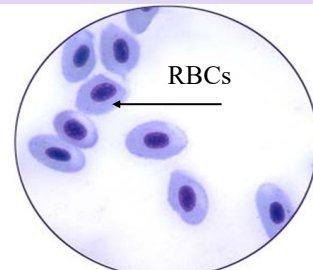
Panna National Park was reported tiger-less by December 2008 and a tiger reintroduction programme was initiated in March 2009. The first tigers brought into Panna included a tigress each from Bandhavgarh and Kanha and a tiger from Pench. Eight years after the reintroduction programme, the reserve currently has about 35 tigers, some of which are radiocollared. Former field director of Panna Tiger Reserve, R Srinivas Murthy, IFS, conducted a research based on photographs available from camera traps at both reserves and concluded on the basis of unique markings that the tiger assigned the call sign T 71 in Bandhavgarh is none other than the tiger P213-21 from Panna National Park. P 213-21 is claimed to have migrated to Bandhavgarh from Panna through this corridor.

Differential Blood cell count of *Clarius batrachus*

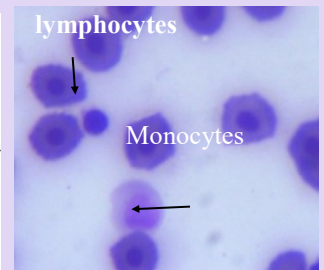
By-Mrs.Runu Paul



basophil

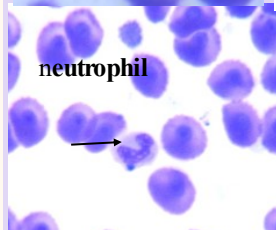


RBCs

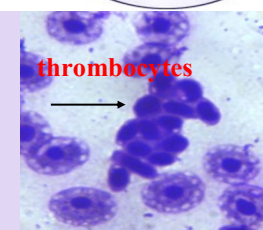


lymphocytes

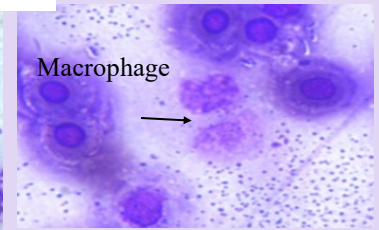
Monocytes



neutrophil



thrombocytes



Macrophage

Students Corner

FASCINATING ANIMAL FACTS

- Frogs have ear drums on the outside of their heads.
- Sea otters always float on their backs when they eat.
- Polar bears look white, but they actually have black skin.
- Snakes always keep their eyes open, even when they are asleep.
- Crickets have ears on their front legs.
- Flamingos have knees that can bend backward.
- Cobras are able to kill with a bite as soon as they are born.
- Some species of Australian Flower Spiders eat their mother when food becomes limited.

By-Shilpa Bhardwaj Msc III sem



Faculty Corner

Evaluation of genotoxicity in women bidi rollers of Madhya Pradesh with reference to GSTM1 gene polymorphism

Daya Shankar *et al* (2017) conducted a study to investigate the extent of genotoxicity in women bidi rollers of Jabalpur, Madhya Pradesh, India. These bidi rollers were occupationally exposed to tobacco dust. Investigation of genotoxicity was done in 34 women bidi rollers and 30 age matched controls by assessing chromosome aberration % (CA%) in cultured peripheral blood lymphocytes & the correlation of human GSTM1 gene polymorphism with CA%. Bidi rollers occupationally exposed to tobacco dust showed significantly increased CA%. It was found to be 3.0 ± 0.63 (Mean \pm SE) and 3.7 ± 0.39 in 30 - 35 years and 60 - 65 years age groups when compared to age matched controls (1.3 ± 0.32 and 1.8 ± 0.24 respectively) at $P < 0.05$. In exposure groups also the CA% was higher than that of controls. It was found 2.9 ± 0.36 & 4.1 ± 0.199 in >20 years & >50 years exposure groups respectively. The GSTM1 null controls expressed a slightly higher CA% (1.5 ± 0.2) than GSTM1 positives (1.2 ± 0.41). Similarly, the null rollers showed a higher CA% (2.8 ± 0.4) than the positives (2.55 ± 0.35) but the differences in both bidi rollers & controls were not significant. The null genotype leads to increase CA% in rollers as well as in null controls.

By-Dr. Dayashankar Gautam

ENDEMIC SPECIES

- ✦ The **Kashmir stag** (*Cervus canadensis hanglu*), also called **hangul**, is a subspecies of Elk native to India. It is found in dense riverside forests in the high valleys and mountains of Kashmir Valley and northern Himachal Pradesh.
- ✦ The **lion-tailed macaque** (*Macaca silenus*) or the **wanderoo** is an Old World Monkey endemic to the Western Ghats. It is an endangered species due to the continuous loss of habitat.

By- Siddhartha Dixit

Actuality of Animals

• Why do cats have vertical pupils?

The sharpest image is produced by round pupils, and if cats weren't nocturnal, they probably would have round pupils like us. But the vertical pupil, in combination with horizontal eyelids, gives the cat greater and more accurate control in different types of lighting. A cat may adjust the amount of light by moving eyelids only.

• Color of Octopus blood

Both squids and octopuses have blue blood. They use an oxygen-carrying molecule in their blood called hemocyanin that contains copper. In cold conditions with low oxygen pressure, hemocyanin oxygen transportation is more efficient than hemoglobin oxygen transportation.

• How do baby birds get oxygen inside their eggs?

Directly under the shell, there is a small pocket of air. The microscopic pores on the egg surface allow the CO₂ to escape and fresh air to get in, so a developing bird can breathe.

By-Divya Yadav MSc I sem

Departmental activities

Cultural dance on Republic Day 26/01/2017



**SUMMER TRAINING
-19.06.2017 to 30.06.2017**



Tree Plantation programme on 2/7/2017



Zoomania 4th -5th March 2018



**Training workshop on -APICULTURE
on 16.09.2017
Guest speaker was Dr. A.K. Bhowmick**



Celebrations of Wildlife conservation week - Govt. Science College on 3.10.2017



Biodiversity awareness programme at Dumna Nature Reserve on 05.09.2017

Swachchata pakhwada 7/9/2017



National conference on Biodesign at RDVV ,Jabalpur - 09. 10.2017



Health Camp on ' Malnutrition and Haemoglobin status' on 12 of August 2017



Invited talk on Biodiversity of road-side insects by Dr P. Mukherjee in National conference on EITFES 2017 at Allahabad on 23.09.2017

