



MUGBERIA GANGADHAR MAHAVIDYALAYA

P.O.—BHUPATINAGAR, Dist.—PURBA MEDINIPUR, PIN.—721425, WEST BENGAL, INDIA

NAAC Re-Accredited B+Level Govt. aided College

CPE (Under UGC XII Plan) & NCTE Approved Institutions

DBT Star College Scheme Award Recipient

E-mail : mugberia_college@rediffmail.com // www.mugberiangangadharmahavidyalaya.ac.in

REPORT ON

Wall Magazine Publication

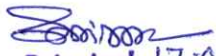
Title - EVOLUTION

Organized by

Department of Zoology

Mugberia Gangadhar Mahavidyalaya

Date – 17.02.2020


Principal 17-02-2020
Mugberia Gangadhar Mahavidyalaya



Similar to the preceding years, the department published its online Wall Magazine (E- magazine) “EVOLUTION”, 2020 on **17.02.2020** being inaugurated by respected Principal Sir, Dr. Swapan Kumar Misra. Almost all the students of SEM II, IV & VI (Total 55) and all the faculty members of the department (Total 4; M: 2, F: 2) along with faculty members from other departments were present. The theme of the wall magazine for this year was “**AWARENESS ON REPTILES AND AVES**” and following 15 student submitted articles on this theme. By participating in this wall magazine publication, the creativity, thinking ability to write something, personality development and leadership capability of the students have been developed and they will be able to prepare them for future challenges after the booming completion of their undergraduate courses.

Inaugurated by: Dr. Swapan Kumar Misra; Principal, MGM

Convener: Kousik Kumar Mondal (Department of Zoology)

Published by: Department of Zoology

Financial Support: DBT Star College Strengthening Scheme

Faculties Present:

Dr. Bidhan Chandra Samanta (HOD, Department of Chemistry)

Dr. Kalipada Maity, (HOD, Department of Mathematics)

Mr. Manas Khalua (Department of Botany)

Dr. Debasish Roy (Department of Physical Education)

Dr. Soma Karmakar (HOD, Department of Zoology)

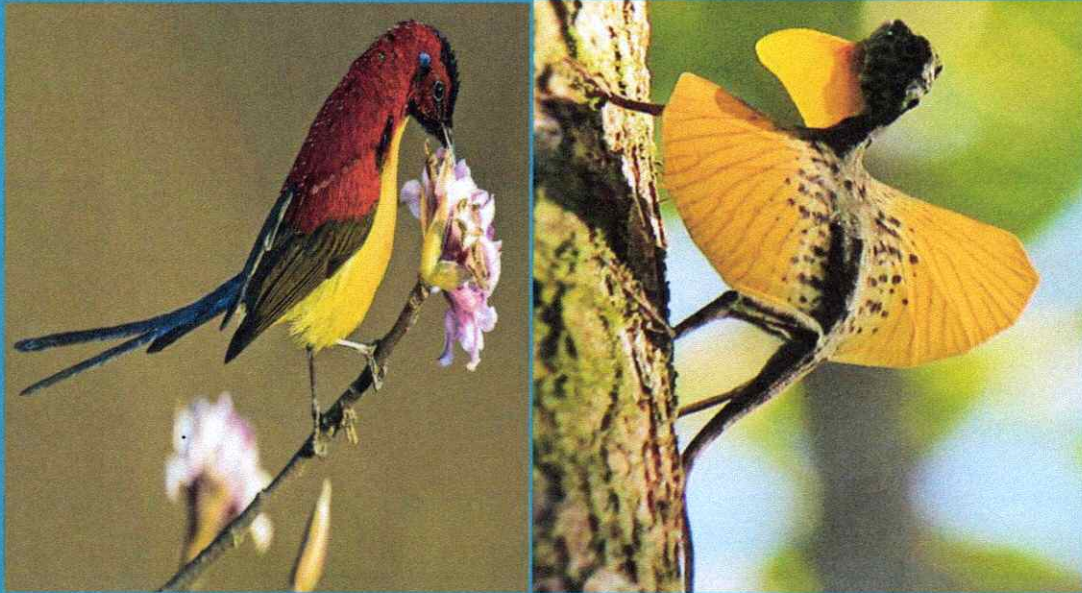
Mr. Raju Majumder (Department of Zoology)

Mrs. Purnima Mandal (Department of Zoology)

Ms. Pallabi Pradhan (Department of Zoology)



Evolution....



an

E-magazine

Published by

Department of zoology

Mugberia Gangadhar Mahavidyalaya



MESSAGE

I feel delighted to know that Department of Zoology of the college is going to publish the E- Magazine "EVOLUTION" for the session 2020-2021 to celebrate the birth anniversary of A. P. J. Abdul Kalam, former President of India. I hope this magazine will make the way for our students to put innovative thinking in writing form.

This magazine will enhance the prestige of our Institution and also succeed in making the program a glamorous one.

I wish the Endeavour of publishing the magazine all success.

Swapan Kumar Misra 17.02.2020

Dr. Swapan Kumar Misra

Principal

Mugberia Gangadhar Mahavidyalaya

Principal
Mugberia Gangadhar Mahavidyalaya



Secretary Speech,

This e-magazine of our Mugberia Gangadhar Mahavidyalaya Department of Zoology is being published today. Every year a wall magazine is published in our department but this year the magazine is being published with the help of our internet for the pandemic situation. The name of the e-magazine is evolution. With the help of this e-magazine we have learned about the evolution of different species and some of their unique features. In this e-magazine various features of birds and reptiles have been learned. Also through this e-magazine we got to know the different talents and creativity of the students. Through this e-magazine we have come to know various unknown facts. And at the end of the day, in this crisis-ridden situation, through this e-magazine, we all got together and enjoyed some time.

THANK YOU



Sl no	Topic Name and Author Name
1	INEXPUGNABLE ENVOY -----Adarsa Jana (6 th sem)
2	RED-TAILED HAWK(<i>Buteo jamaicensis</i>) ----- Anwesa Manna (1st Sem)
3	The Amazing Colour Changing Bird "Suraka -----Rupali Pradhan(3 rd sem)
4	Wilson's bird-of-paradise ----- Jayatu Das & Arpita Sahoo(3 rd sem)
5	THE RED MUNIAS OR STRAWBERRY FINCHES OR RED AVADAVATS -----Juhi Khatun(3 rd sem)
6	THE MACAW PARROT -----Sagarika Pradhan(3 rd sem)
7	FLAMINGO-THE MOST INTERESTING BIRD -----Susmita Bhowmik and Krishnandu Das(5 th sem)
8	EMU-BIRD (AUSTRAL ORNITHO) ----- Biswajit Giri
9	BLUE EYED SHAGS -----Swagata Mahapatra(1 st sem)
10	ARCHAEOPTERYX ----- Snehasis Jana(3 rd sem)
11	THE GREAT LIZARD TREK ----- Aparajita Maity(5 th sem)
12	THE FITZROY RIVER TURTLE ----- Sayani Dash, Archita Das(3 rd sem)
13	THE MARY RIVER TURTLE -----Sayani Dash, Arpita Sahoo, Rumpa Bera(3 rd sem)
14	MADAGASCAR BIG-HEADED TURTLE ----- Susmita Giri(1 st sem)
15	TUATARA : A THIRD EYED ANIMAL -----Anjali Das (3 rd sem)

INEXPUGNABLE ENVOY

(Rose Breasted Grosbeak and Frigate Bird)

What a tempest! Trees are bow down,
Frigate bird said, where I will stand safely?
Later of Storm, tranquil, no species friend, only heap of finishing.
In Indian Ocean, he stayed lonely! ---
After few days, he migrated in other country.
When he reached United State of America,
Researchers discussed about new bird of discovery.
They amazed about male and female pluma,
Which is present in rose breasted bird.
One wing's showing yellow pit & other's pink under wing,
For sexual difference, right wing, tail's black and left brown shade.
Alas! For functional ovary and testis, they can't mating,
But male relay mating sound for confusing other bird.
Suddenly, the researchers observed Indian frigate, in this condition
And exclaimed that how beautiful your red pouch!
Yes, it helps in store fish, prey, floating in air for many times, sound production,
But I am most affected bird in India due to 'amphan' onslaught.
Then he described himself gradually & said-
I can rob food from other birds that called "kleptoparasitisms"
"Man of war" is referred for similarity with fast ship and aviary counterpart.
I have funny and interested facts ---
I live in ocean & feed on fish but can't land on water for not in waterproofs.
But this features meaningless in pandemic site,
Where great creature of society humans are helpless ---
We depend each other & in this condition, is their very need for our revive?
Grosbeak said, Why not? we will exist for future generation as inspiration.



RED-TAILED HAWK (*Buteo jamaicensis*)



Kingdom - Animalia

Phylum - Chordata

Class - Aves

Order - Accipitriformes

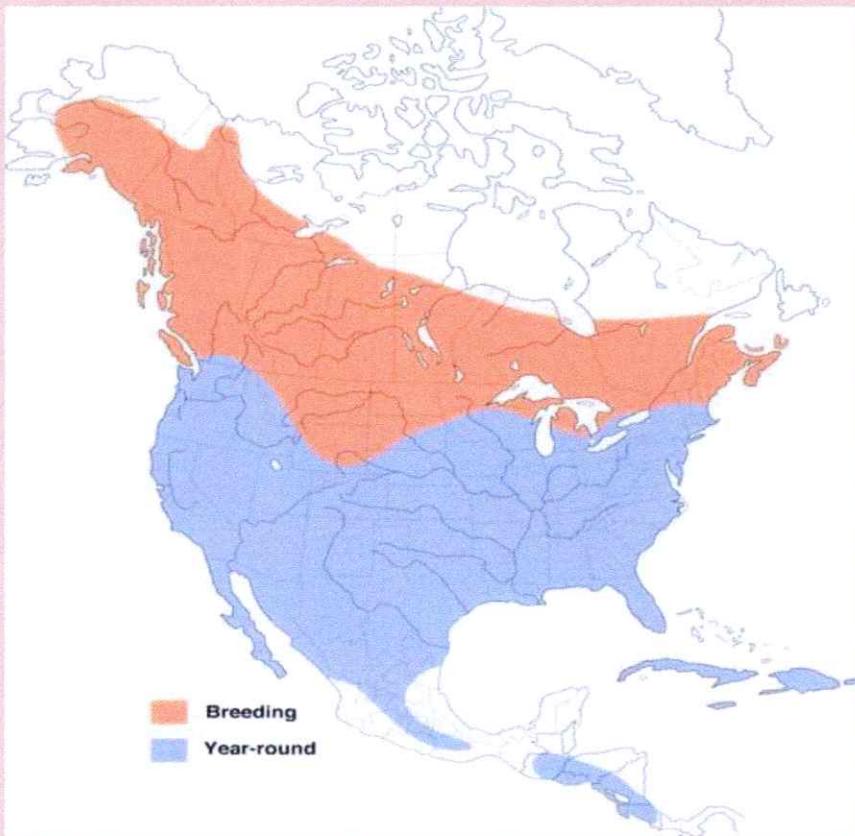
Family : Accipitridae

Genus : Buteo

Species : *jamaicensis*



BASIC DESCRIPTION -



This is probably the most common hawk in North

America. If you've got sharp eyes you'll see several individuals on almost any long car ride, anywhere.

Red-tailed Hawks soar above open fields, slowly turning circles on their broad, rounded wings. Other times you'll see them atop telephone poles, eyes fixed on the ground to catch the movements of a vole

or a rabbit, or simply waiting out cold weather before climbing a thermal updraft into the sky.

Facts About It :



- The Red-tailed Hawk has a thrilling, raspy scream that sounds exactly like a raptor should sound. At least, that's what Hollywood directors seem to think. Whenever a hawk or eagle appears onscreen, no matter what species, the shrill cry on the soundtrack is almost always a Red-tailed Hawk.
- Birds are amazingly adapted for life in the air. The Red-tailed Hawk is one of the largest birds you'll see in North America, yet even the biggest females weigh in at only about 3 pounds. A similar-sized small dog might weigh 10 times that.
- The "Harlan's Hawk" breeds in Alaska and northwestern Canada, and winters on the southern Great Plains. This very dark form of the Red-tailed Hawk has a marbled white, brown, and gray tail instead of a red one. It's so distinctive that it was once considered a separate species, until ornithologists discovered many individuals that were intermediate between Harlan's and more typical Red-tailed Hawks.
- Courting Red-tailed Hawks put on a display in which they soar in wide circles at a great height. The male dives steeply, then shoots up again at an angle nearly as steep. After several of these swoops he approaches the female from above, extends his legs, and touches her briefly. Sometimes, the pair grab onto one other, clasp talons, and plummet in spirals toward the ground before pulling away.
- Red-tailed Hawks have been seen hunting as a pair, guarding opposite sides of the same tree to catch tree squirrels.
- The oldest known wild Red-tailed Hawk was at least 30 years, 8 months old when it was found in Michigan in 2011, the same state where it had been banded in 1981.

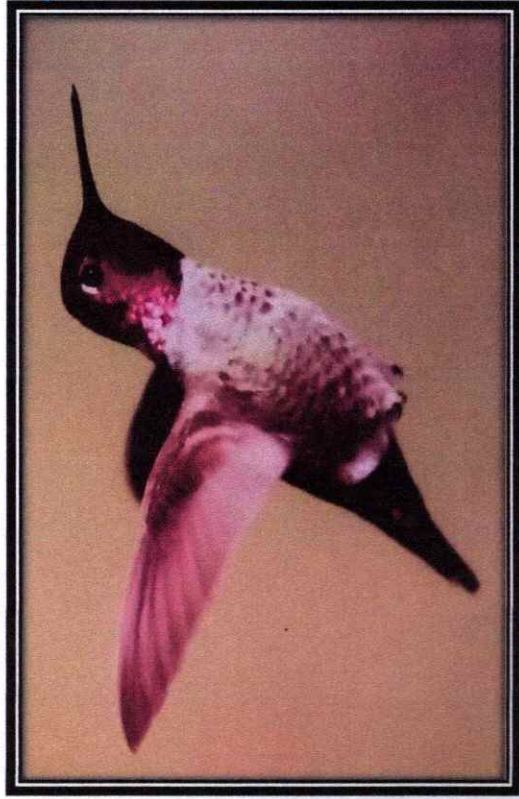


Submitted By :

Anwesa Manna (1st Sem)
Department Of Zoology (Hons.)
Mugberia Gangadhar Mahavidyalaya

The Amazing Colour Changing Bird "Surakav"

Submitted by
Rupali Pradhan
Zooh, 3rd
sem, MGM.



Hi, I'm Surakav, a hummingbird.

Hello Surakav. I've heard a lot about your colour changing feathers. What's the mystery behind it?

Actually I don't change my colour. You can see different colours when viewed from multiple angles. Listen to the secret I'm telling you.



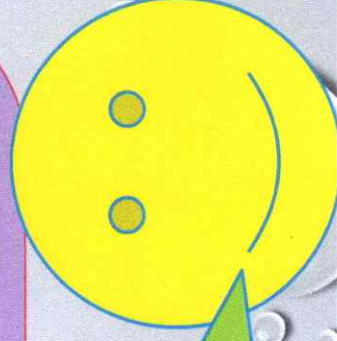
On the top of the feather fibers I've thin clear keratin layer. When the sun rays fall on the feathers, at each layer, some of the sunlight bounces off and some sunlight goes through the layer but some again bounces off the next layer. So, at different spots of feathers, the sunlight bounce blends together to block out a few colours more intense as per direction.

Give me more information of yourself.



- My scientific name is Calypte anna. I'm from North America West Coast.
- I'm at about 9.9 to 10.9 cm long.
- I eat not only nectar but also arthropods and tree saps.
- Another interesting fact is that I can shake my body 55 times every second to shed rainwater while flying or to remove dirt or pollen from feather during dry weather.

You are amazing!



Wilson's bird-of-paradise

(*Cicinnurus respublica*)



* Scientific classification

Kingdom : Animalia

Phylum : Chordata

Class : Aves

Order : Passeriformes

Family : Paradisaeidae

Genus : *Cicinnurus*

Species : *Cicinnurus respublica*

***Distribution** : Wilson's bird of Paradise is an endemic species of the west Papuan Island, Batanta and Waigeo off northern West Papua's Coast, Indonesia. These birds primarily inhabit Hill forest.

***Habitat** : Its preferred habitat is the hill forest at 300 m of altitude, more rarely the lowland rainforest and the middle mountain forest.

***Habits and Lifestyle** : Little is known about the social behavior of Wilson's bird of Paradise. Birds of Paradise tend to be solitary birds and only come together to mate.



*Diet and Nutrition : Wilson bird of Paradise is an omnivore and eats mainly fruit , along with some small insects.

*Courtship Behavior : **Dance** - This species territorially defends a 'Court' in which it performs its vocalizations and physical maneuvers. Males will continually work to keep this area free of debris , making sure that nothing on the ground will distract from their displays. Males will perch on a vertical branch in the middle of their court , flexing their brilliant green fluorescent color and calling out to females to attract them to their site. Females who are interested will perch above the male on the branch and watch as he weaves back and forth, calling to her and flexing the fluorescent color.

*Conservation : Due to ongoing habitat loss , limited range and exploitation, the Wilson bird of Paradise is evaluated as near threatened of the IUCN red list of threatened species. It is listed on appendix 11 of the conservation on international trade in Endangered species of wild fauna and flora. (CITES)



Submitted By :

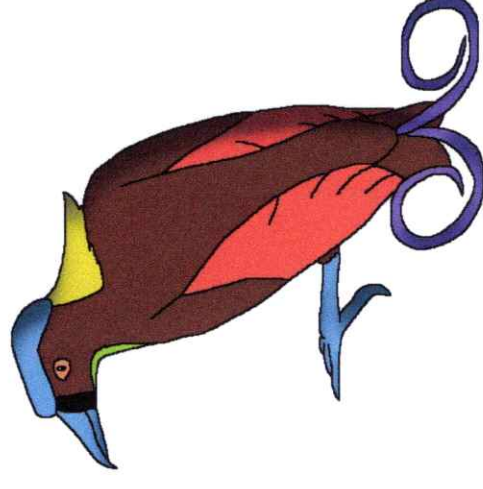
Jayatu Das

&

Arpita Sahoo

(3rd Sem.) Department of Zoology (Hons.)

Mugberia Gangadhar Mahavidyalaya





THE RED MUNIAS OR STRAWBERRY FINCHES OR RED AVADAVATS

General Description

Scientific name: (*Amandava amandava*) (Linnaeus, 1758)

Distribution : Bangladesh, India, Sri Lanka, Nepal and Pakistan, Vietnam, Indonesia.

Food and basic diet : seeds, green grass, small insects.

Size: 3_4 inches. Nature : Loves to live in flocks.

Colours and patches: Males have white spots and more colourful greenish female



Role : Because red avadavats feed on seeds and small insects, they likely have a role in seed dispersal as well as pest control, they are also prey for larger predators. There is little additional information on the roles red avadavats have on the ecosystem. ("Red Avadavat ", 2009).



Unique characters : the red avadavat (*Amandava amandava*) red munia or strawberry finch, is a sparrow_sized bird of the family Estrildidae . It is found in the open fields and grasslands of tropical Asia.

The beak begins to turn red in May and darkens during November and December. The beak then turns rapidly to black in April and the cycle continuous. These seasonal cycles are linked to seasonal changes in Daylength.

Conservation : According to the IUCN Red list red avadavats are an animal of least concern because of their large population size and large geographic range.



Submitted by
Juhi Khatun
(Department of Zoology
Honours) 2nd year

THE MACAW PARROT



General Description

Scientific name:

Psittacidae sp

LENGTH :

Scarlet Macaw: 89cm

Hyacinth Macaw :100cm

Blue and yellow macaw

:80-91cm

LIFE SPAN: up to 60 years

HABITAT :

Macaws are native to central American and North American (Only Mexico), South America and formerly the Caribbean. Most species are associated with forest, especially rainforest, but others prefer woodland or Savannah -like habitats

Unique Features :

Macaws have long tail feathers as well as big beaks, Macaw adaptations include large, curved, powerful beaks designed to crack open hard nuts and seeds. These parrots have a long streamlined physique and colourful feathering Ranging from the hyacinth macaw's hyacinth blue to the scarlet macaw's scarlet red colouring.

Parrots have curved bills (beaks), strong leg and coloured feet. Parrots are oftenly brightly coloured. Parrots are believed to be one of the most intelligent bird species. Some species known for initiating human voice.



Conservation status of Macaw :

The majority of macaws are now endangered in the wild and a few are extinct. The spix's macaw is now probably extinct in the wild. The glaucous macaw is also probably extinct, with only two reliable records of sightings in the 20th century. The Blue – headed macaw is listed as Endangered under criterion c2a (I) of the IUCN Red list.

Ecological role of Macaw:

Macaw dispersed fruits at high rates (75-100% of fruits) to distant (up to 1200m) perching trees where they consumed the pulp and discard entire seeds contributing to forest regeneration and connectivity. between distant forests island.



Submitted by
Sagarika Pradhan
(Department of
Zoology Honours)
2nd year



FLAMINGO-THE MOST INTERESTING BIRD

Flamingos are a type of wading bird in the family phoenicopteridae. Four flamingo species are distributed throughout the America ,Caribbean and two species are native to Africa, Asia and Europe.

SYSTEMATIC POSITION:

Kingdom-Animalia

Phylum-Chordata

Class-Aves

Order-Phoenicopteriformes

Family-Phoenicopteridae

Species-Flamingo

- Adult flamingoes are four to five feet tall, but only weigh between four and eight pounds that's the kind of astonishing body density needed for flight.





- Flamingo perform mating dance to attract partners.Both males and females of species perform dance.
- The male and female both sit on the egg while it incubates for about a month.
- When a flamingo chick hatches,both parents take turns feeding it first with a special liquid baby food they produce in their throats called crop milk, then with regurgitated regular flamingo food as the chick grows.



- The colour pink comes from beta carotene in the crustaceans and plankton that flamingos eat.Zoo flamingos will turn white if their diet is not supplemented with live shrimp or flamingo chow containing carotenoid pigments.



- The feathers under this wings (flight feathers) are black .We can see the feathers when the birds are flying.



Name-Susmita Bhowmik

and Krishnandu Das

3rd year of zoology (H),5th semester

2020-2021

Mughberia Gangadhar Mahavidyalaya

EMU-BIRD (AUSTRAL ORNITHO)

SCIENTIFIC CLASSIFICATION:--

Kingdom:- Animalia

Phylum:- Chordata

Class:-Aves

Order:-casuariiformes

Family:- Casuariidae

Genus:- Dromaius

Species :- novaeollandiae



Binomial Nomenclature : -- Dromaius
novaeollandiae



SOME SPECIAL CHARACTERS



- **DISTRIBUTION:** Emu occur in all Australian states except Tasmania.
- **HABITAT:** Emu lives in variety of habitat from open arid plains to tropical woodland.
- **DIET:** Emu eat a wide Variety of leaves, grasses, fruits, native plants & insects.
- **HEIGHT & WEIGHT:** Emu flightless bird of Australia & 2nd largest living bird. The emu is more than 1.5 meter tall & weight more than 45 kg.
- **RUNNING SPEED:** The bird can run at 50 km/hour.
- **LIFE SPAN:** Emu have a life expectancy of about 10-20 Years in the wild and 35 year in captivity.

FIVE FUNNY CHARACTERS



Emus have tiny, useless wings, but their legs are long and powerful.

Emus range over large areas, foraging on fruits, seeds, plant shoots, small animals, animal droppings, and insects.



The blue skin develops on the neck area of a female emu, and its feathers turn dark brown.



Predators of the emu include dingoes and wedge-tailed eagles.

Emus have sharp eyesight and hearing senses.



- **ECONOMIC VALUE:**-The emu importance source of meat to aboriginal Australians.Emu skin used to lubricant and fat served as Bush medicine.

- **CONSERVATION:**—Their population trends us thought to be stable and the IUCN assessment their conservation status as being of least concern.

Now this bird is endangered species.

- **BOOK:**John Gould's hand book to the bird of Australia first published in 1865.he lamented loss of the emu from Tasmania,where it had become rare and has since become extinct .

Submitted by:--

Biswajit Giri ,Dep.of

Zoology honors

Mugberia Gangadhar Mahavidalya



John Gerrard Keulemans's (c. 1910) restoration of the Tasmanian emu, one of three subspecies which were hunted out of existence



BLUE EYED SHAG

Blue eyed shags are the only member of the cormorants to venture down into the Antarctic proper. They are found particularly along the Scotia arc islands and down the Antarctic Peninsula, venturing as far as 68 degrees south. Many are endemic to remote species.

PHALACROCORAX GEORGIANUS SCIENTIFIC CLASSIFICATION :

KINGDOM - Animalia

PHYLUM - Chordata

CLASS - Aves

ORDER - Suliformes

FAMILY - Phalacrocoracidae

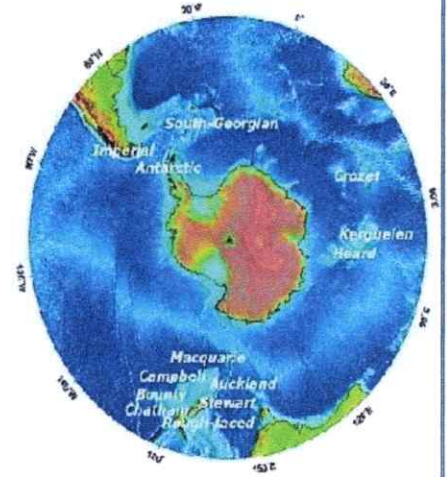
GENUS : *Leucocarbo*

➤ **SCIENTIFIC NAME** : *Leucocarbo* sp

➤ **LENGTH** : 70-80 cm

➤ **WEIGHT** : 1.5-3.5 kg

➤ **DIET** : Fish, crustaceans, octopuses, worms, snails, slugs.



They have blue ring around the eye(not a blue iris),white under part and pink feet. They are able to stay underwater up to 4 minutes at a time. Blue eyed shags can fly upto 50 km/hour. They will fish together in groups which is known as "rafts"and they aid each other by herding fish towards waiting fellow raft members. Their breeding season begins in October and sometimes shares breeding grounds with other species. The females will lay up to 5 eggs. They live for 15-20 years in the wild. Their nests are created out of grass and sea wood and

mud. Blue-eyed shags are unique in the sense that, contrary to most other cormorant species, they inhabit one of the coldest regions on Earth, diving into ice-cold waters, where they swim submerged for long minutes and to great depths. There are no real estimates for Blue-eyed shag populations because scientists are still trying to pin down the exact taxonomy of the species.





ARCHAEOPTERYX

The name *Archaeopteryx* is composed of two words, 'archaeo' and 'pteryx'. 'Archaeo' is derived from the Greek word 'archeos' which translates to 'antique'. 'Pteryx' translates to 'feather' in Greek. This name was chosen as the organism was defined by a single feather specimen initially.

❖ Scientific classification:-

Kingdom- Animalia

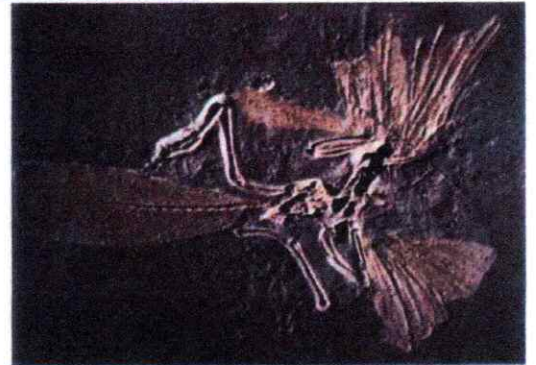
Phylum- Chordata

Family- Archaeopterygidae

Genus- Archaeopteryx

species- *Archaeopteryx lithographica*,

Archaeopteryx siemensii



Fossil of Archaeopteryx

➤ Quick Facts:-

- **Size** 50 cms in length
- **Weight** 1.8 to 2.2 pounds
- **Other Name** Urvogel; German word for 'first bird' or 'original bird.'
- **Diet** Omnivore.

➤ Habitat and Behavior:-

They lived in places where there were no big trees that were useful for gliding. The structure of their claws suggests that they did not climb often. Their flight may be in relation to their escape or hunting behavior.

➤ Distribution:-

They inhabited an area that is now Bavaria in Germany. During this time, Europe was closer to the equator than it is today, and it had a dry and warm climate.

➤ Physical features:-

1. The Archaeopteryx has the size of the modern day raven.
2. It had proportionately longer pair of wings. These could not be flapped in the fashion of modern birds. Hence, they could not have offered a strong flight to the Archaeopteryx.



3. Its eyes were large as compared to the dimensions its head.
4. The neck of the Archaeopteryx was moderately long. It lacked feathers. The head of the organism also was feather-less.
5. The body of the Archaeopteryx was compact and light. Yet it was not so light that it could have permitted the creature of ascend very high above the ground.
6. The Archaeopteryx had a long tail. This was covered by feathers as well.
7. The hind legs of the Archaeopteryx very long and slender. They possessed three digits directed forward and one digit directed backwards. 8. This was a characteristic feature of theropods

Archeopteryx is a connecting link (missing link) between reptiles and birds.

• **Reptilian characters:**

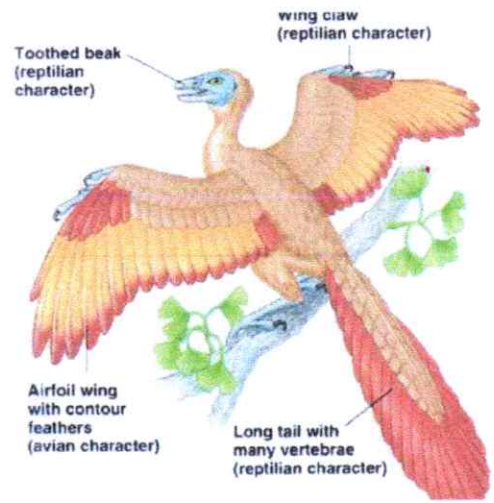
1. Jaws are provided with homodont teeth.
2. Long, lizard like tail with 20 free caudal vertebrae.
3. Bones are not pneumatic.
4. Cervical vertebrae are fewer, 9 to 19.
5. Amphicoelus vertebrae as in Sphenodon.
6. Cervical and abdominal ribs are present, in addition to thoracic ribs; Ribs are single headed and without uncinat process
7. Sternum is weak or absent.
8. Eyes are provided with sclerotic ossicles.
9. Scales are present.
10. Fore limbs are provided with threew free fingers tipped with claws. The phalangial formula is 2, 3, and 4 in the I, II, and III fingers.
11. Carpals and metacarpals are free; there is no carpometacarpus.
12. Pelvic girdle has an elongated ilium and a backwardly directed pubis.

• **Avian Characters:**

1. Presence of feathers. If the feathers of Archeopteryx were not preserved in the fossil. It would have been taken for some bipedal diapsid reptile.
2. Fore limbs are modified as wings.

3. Tail bears modified as wings.
4. Tail bears two rows of feathers.
5. Rounded brain case
6. Beaks are present.
7. Bones in the skull are intimately fused.
8. Bones of limbs and girdles are bird like.
9. A keel is present of the sternum.
10. Tibia and fibula are separate.
11. V shaped furcula is present.

Archeopteryx has both characters and a extinct one, So its called a missing link



How did Archaeopteryx die and become preserved?

Although Archaeopteryx lived on land, occasionally some would have been caught up in storms as they flew or glided over the water. Waterlogged and unable to take off again, they would have drowned and sunk to the floor of the lagoon.

All of the known specimens display various characteristics of immaturity, indicating that none of the specimens was fully adult. This may have been the reason for their inability to survive storm events.

The carcasses were quickly buried by fine lime muds deposited on the lagoon floors. It is thought that one metre of rock today represents 5,000 years of deposition. The fossils of Solnhofen are exceptionally preserved, due to the lack of disturbance from both predators and water movement. Within the fine grained limestones, delicate features such as dragonfly wings or the feathers of Archaeopteryx can be found.

Archaeopteryx siemensii

Submitted by: Snehasis Jana
 3rd sem, 2nd year, Zoology Honours
 Mugheriya Gangadhar Mahavidyalaya





THE GREAT LIZARD TREK

Hi, my name is frank and I'm a frilled neck lizard, but I can also be called a dragon lizard. I used to be famous back in the day, I was that beautiful creature on the Australian two cent coin but then they got rid of the two cent coin. Anyway today I'm going to tell you a bit about me.



Systematic Position :-

Kingdom - Animalia

Phylum - Chordata

Subphylum - Vertebrata

Class - Reptilia

Order - Squamata

Suborder - Iguania

Family - agamidae

Genus - Chlamydosaurus

Species - Chlamydosaurus kingii



Distribution :-

The frilled neck lizard is found in the northern regions of Australia and the Southern areas of New Guinea.

Defensive Behavior :-

When this unique Creature feels threatened it rises on its hind legs, opens its yellow colorful, pleated skin flap that encircles its head, and hisses. If an attacker is unimpressed by these antics, the lizard simply turns tail mouth and frill open, and holds, legs splaying left and right.



Habitat and lifestyle :-

These animals prefer the humid savanna woodland conditions of tropical areas . This arboreal lizard species mainly live on trees.

Size :-

These lizards grow up to 91.4 cm in length.

Weight :-

They Generally weight around 1.1 pounds.

Diet :-

They are insectivores.

Reproduction :-

Females lay 8 to 23 tiny eggs in an under ground nest and hatchlings emerge fully capable of hunting and utilizing their frill.



Life span :-

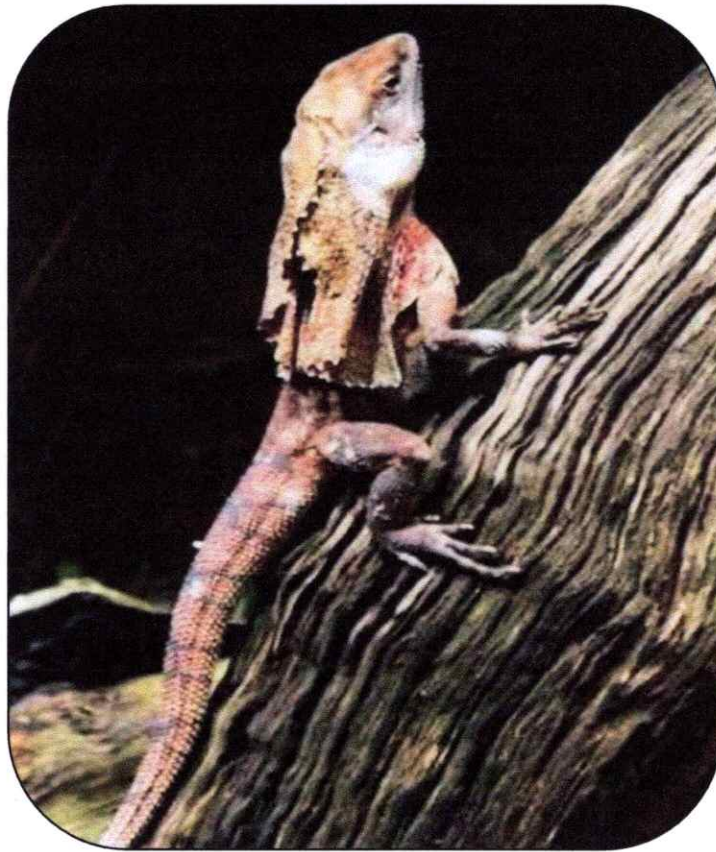
The lifespan of this species ranges between 10 and 20 years .

Fun facts about Frilled neck lizard :-

- * They are believed to use the frill in their regulation
- * Their bodies are covered in small scales to avoid water loss.



- * Researchers at ANU have found frill necked lizards have different colored frills , depending on where they live and what they eat.
- * The color of the frill on the lizards varies from red , orange , yellow and white.
- * They are one of the fastest running Reptiles on hind legs and can achieve speeds of 25 km/h.

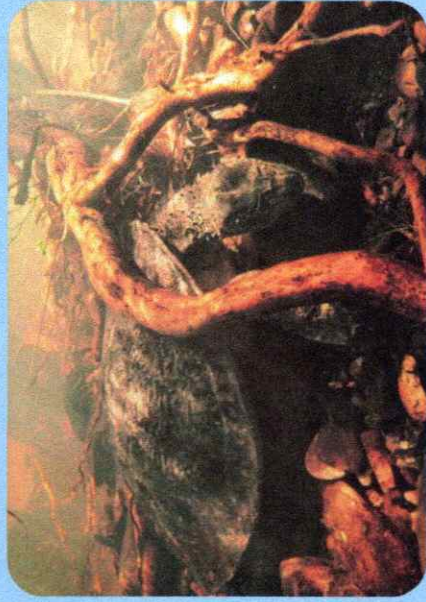


Submitted by :-

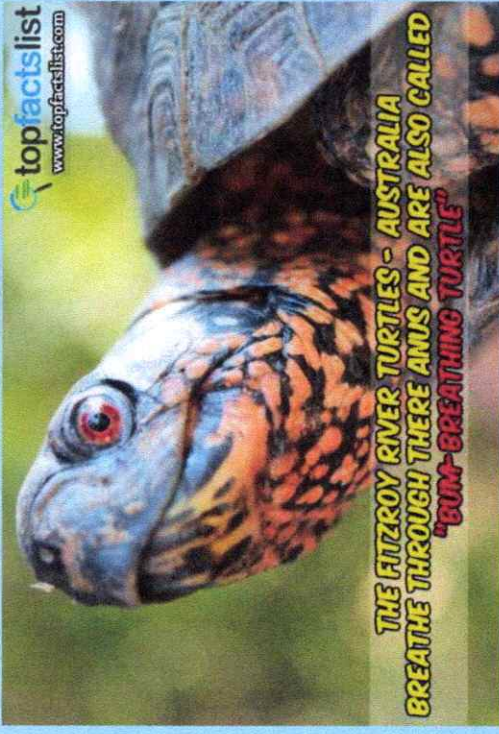
Name – Aparajita Maity
3rd year of Zoology (H) , 5th
Semester 2020-2021
Department of Zoology
Mugberia Gangadhar
Mahavidyalaya

THE FITZROY RIVER TURTLE

The Fitzroy River turtle is light to dark brown in color and grows to approximately 260 mm in carapace length. The plastron is lighter in color and tapers anteriorly and posteriorly. The carapace is highly reticulated to the naked eye. The plastron is smooth. The scutes are very thin and underlying sutures in both the carapace and plastron are visible through them in all but the darkest individuals. The species has a single pair of barbels on the lower jaw. The Fitzroy River turtle is capable of obtaining up to 70% of its oxygen needs from the water through its cloaca, in a process called cloacal respiration. This allows the Fitzroy River turtle to remain underwater for up to three weeks.



The Fitzroy River turtle is a species of freshwater turtle in the family chelidae. It is the only surviving member of the genus *Rheodytes*.



THE FITZROY RIVER TURTLES - AUSTRALIA
BREATHE THROUGH THERE ANUS AND ARE ALSO CALLED
"BUM-BREATHING TURTLE"



DIET

This turtle is an adept bottom feeder, preying on terrestrial and aquatic insects, macroinvertebrates, crustaceans, algae, aquatic snails, worms, freshwater sponges and aquatic plants such as ribbon weed (*Vallisneria* sp.). Stomach flushing has demonstrated that most of the diet was made up of macroinvertebrates with some freshwater sponges.

Kingdom:	Animalia
Phylum:	Chordata
Class:	Reptilia
Order:	Testudines
Suborder:	Pleurodira
Family:	Chelidae
Genus:	<i>Rheodytes</i>
Species:	<i>R. leukops</i>
Binomial name	<i>Rheodytes leukops</i>

THE CLOACAL RESPIRATION

The Fitzroy River turtle is sometimes called a “ bottom-breathing turtle” due to its highly unusual ability of absorbing oxygen under water through gills in their cloaca (the single opening under the tail used for passing of waste and reproductive materials).



HABITAT & DISTRIBUTION

This turtle was first described in 1989 and is only found in the Fitzroy River and its tributaries, around Rockhampton in eastern central Queensland. The species occurs within permanent large, isolated permanent freshwater riverine reaches and waterholes.

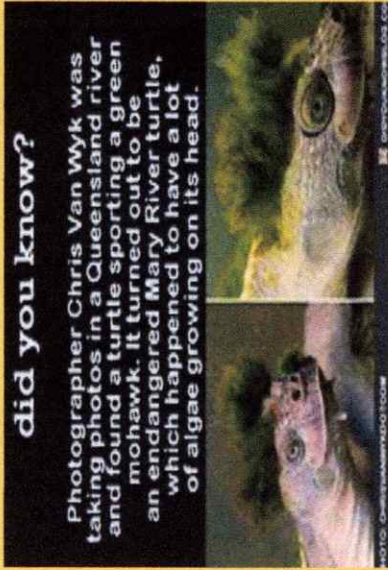
CONSERVATION STATUS

This species is listed as vulnerable in Queensland (Queensland Nature Conservation Act 1992) and nationally (Commonwealth Environment Protection and Biodiversity Conservation Act 1999).

Submitted by: Sayani Dash, Archita Das, 2nd year Zoology (Hons) Mugberia Gangadhar Mahavidyalaya



THE MARY RIVER TURTLE



The Mary River turtle is one of Australia's largest turtles. Specimens in excess of 50 cm in **carapace** length have been recorded. Hatchlings have a straight carapace length of 2.0–3.5 cm. Adult Mary River turtles have an elongated, streamlined carapace that can be plain in colour or intricately patterned. Overall colour can vary from rusty red to brown and almost black. The **plastron** varies from cream to pale pink. The skin colouration is similar to that of the shell and often has salmon pink present on the tail and limbs. The iris can be pale blue. Mary River turtles use bimodal respiration, and so are capable of absorbing oxygen via the **cloaca** whilst underwater. However, they do regularly come to the surface to breathe air in the usual way.

Red List Animals

Unfortunately, The mary river turtle is listed as Endangered by the IUCN Red list following precipitous declines since 1970. The Mary River turtle takes an exceptionally long time to reach sexual maturity, with individuals not breeding before the age of 25. The building of dams and collection of eggs for the pet trade have driven the declines in the species.

DISTRIBUTION

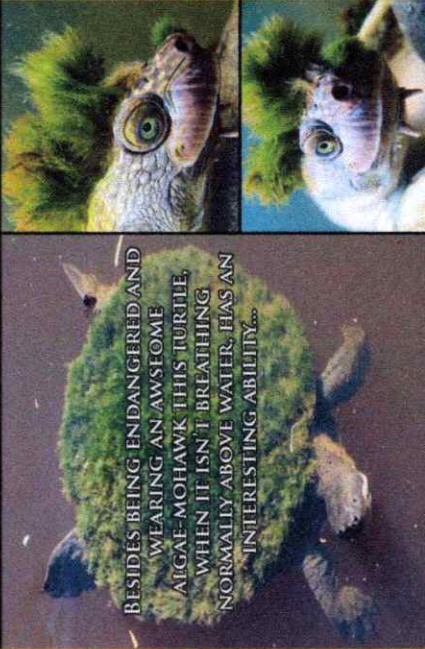
The Mary River Turtle is endemic to the Mary River in south-eastern Queensland.

HABITAT AND ECOLOGY

The Mary River Turtle lives in well-oxygenated, flowing sections of streams. Its habitat consists of riffles (parts of the river that are productive that are shallow, fast flowing and aerated) and shallow stretches alternating with deeper pools. It has terrestrial nest sites.

Kingdom:	Animalia
Phylum:	Chordata
Class:	Reptilia
Order:	Testudines
Suborder:	Pleurodira
Family:	Chelidae
Subfamily:	Chelodiniinae
Genus:	<i>Elusor</i> Cann and Legler, 1994
Species:	<i>E. macrurus</i>
Binomial name	
<i>Elusor macrurus</i>	
	Cann and Legler, 1994

MEET THE MARY RIVER TURTLE A BUM-BREATHER



SOME SPECIES OF TURTLES CAN BREATHE UNDERWATER USING GILL-LIKE STRUCTURES NEAR THEIR CLOACA. AN ORIFICE COMBINING INTESTINAL, REPRODUCTIVE AND URINARY TRACT OPENINGS. YEP, BUM-BREATHERS.

THE CLOACAL RESPIRATION

Mary River turtles use **bimodal respiration**, and so are capable of absorbing oxygen via the cloaca whilst underwater. However, they do regularly come to the surface to breathe air in the usual way. A unique feature of the male Mary River turtle is the tail, which can measure almost two-thirds of the carapace length.



THE IUCN RED LISTED SPECIES

This species is currently listed as endangered under Queensland's [Nature Conservation Act 1992](#), and under the federal [Environment Protection and Biodiversity Conservation Act 1999](#). The international conservation body IUCN lists it as [endangered](#) on the [IUCN Red List](#). It is also listed on the Zoological Society of London's Evolutionarily Distinct and Globally Endangered list, part of the [EDGE of Existence programme](#). It is Australia's second-most endangered freshwater turtle species, after the [western swamp turtle](#) (*Pseudemys umbrina*) of Western Australia. Mary River turtles were listed amongst the world's top 25 most endangered turtle species by the Turtle Conservation Fund in 2003.

Australia's first reptile-focused, nonprofit conservation organisation, the Australian Freshwater Turtle Conservation and Research Association, were the first to breed this species in captivity for release into the wild in 2007.



MADAGASCAR BIG-HEADED TURTLE (*Erymnochelys madagascariensis*)



Kingdom : Animalia

Phylum : Chordata

Order : Testudines

Class : Reptilia

Family : Podocnemididae

Genus : *Erymnochelys*

Species : *madagascariensis*

ABOUT

The Critically Endangered Madagascar big-headed turtle is the world's most Evolutionarily Distinct and Globally Endangered reptile. In fact, this species has the highest EDGE score of any terrestrial vertebrate!

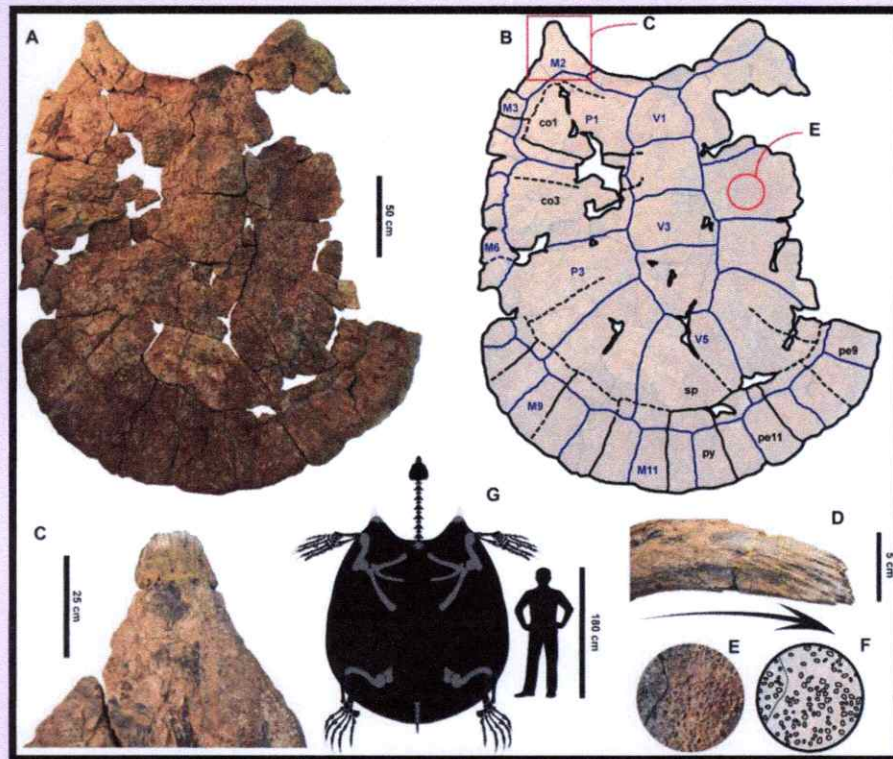
The Madagascan big-headed turtle is a unique and prehistoric reptile. The species is endemic to lowland waterways and wetlands of western Madagascar, where adults feeds upon molluscs and scavenges plants and dead animals. As its name suggests, this turtle has a particularly large head relative to its body. Due to its colouration, it can sometimes appear to have large plates of gold armouring its head and body.



This turtle, the sole surviving species in its genus, sits alone at the end of a branch of the tree of life which stretches back more than 80 million years to the age of the dinosaurs. To put that in perspective, our branch of the tree of life is a mere twig, stretching back only 7-10 million years before we meet our common ancestor with chimpanzees and bonobos.

However, the species is listed in CITES Appendix II and conservation efforts are underway. These include captive breeding, community education and population monitoring programmes.

DISTRIBUTION



The Madagascar big-headed turtle is found only in the western lowland river basins of Madagascar. Despite having an extent of occurrence of 20,000 km², the true area occupied by the species is thought to be as small as 500 km².

HABITAT AND ECOLOGY

The Madagascar big-headed turtle prefers slow-moving waterways and wetlands, where it can bask on exposed logs and rocks. Dietary analyses have shown the species to feed on aquatic invertebrates, molluscs, carrion and plants. Females nest between september and January, when they lay an average of 13 eggs. Females appear to breed once every two years.



Submitted By :

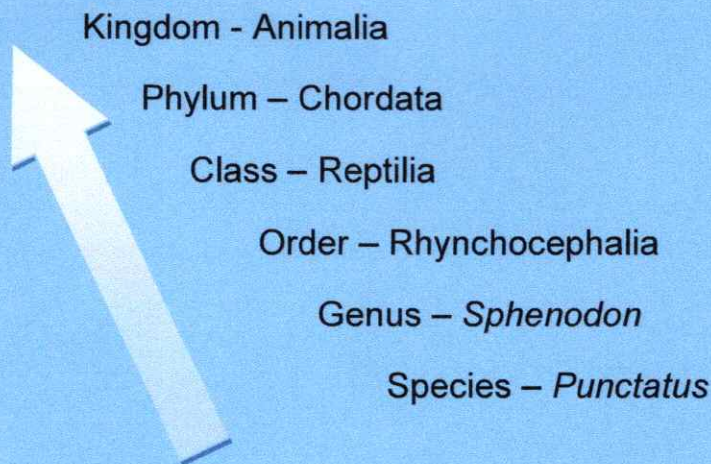
Susmita Giri(1st Sem)
Department Of Zoology(Hons.)
Mugheria Gangadhar Mahavidyalaya

TUATARA : A THIRD EYED ANIMAL

- + Tuatara is reptiles endemic to New Zealand. Although resembling most lizards, they are part of a distinct lineage.
- + Tuatara are of interest in the study of the evolution of lizards and snakes.
- + They are also unusual in having a pronounced photoreceptive eye, the third eye, which is thought to be involved in setting circadian and seasonal cycles.
- + Tuatara are sometimes referred to as "living fossils".

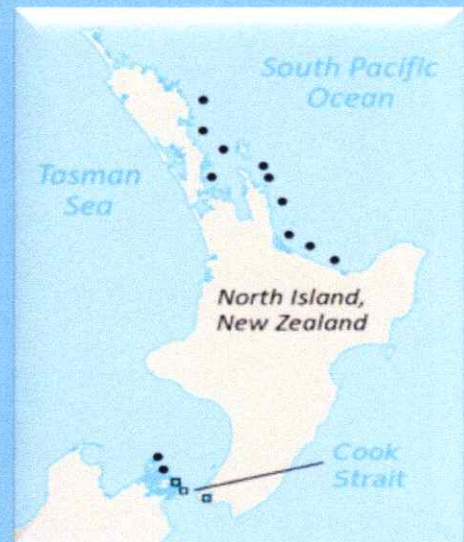


Systematic Position:



Distribution:

Tuatara were once widespread on New Zealand's main North and South Islands, where subfossil remains have been found in sand dunes, caves, and Māori middens. Wiped out from the main islands before European settlement, they were long confined to 32 offshore islands free of mammals. Additionally tuatara were much rarer on the rat-inhabited islands.



Current distribution of tuatara
 Circles represent the North Island tuatara, and squares the Brothers Island tuatara. Symbols may represent up to seven islands

Amazing Facts:

- **Third Eye.** The tuatara has a third eye on the top of its head which resembles a cornea,^[60] retina with rod-like structures called the parietal eye. It has, and degenerated nerve connection to the brain.



- **Hearing** :- Together with turtles, the tuatara has the most primitive hearing organs among the amniotes. There is no eardrum and no ear hole.

- **Life Span**:- It has survived for almost 200 million years. Tuatara can live up to 100 years. The male is much bigger than the female.

- **Feeding** Tuataras are carnivores. They eat weta, moths and beetles. Sometimes they eat small lizards and even the eggs and chicks of petrels. At the zoo we feed them baby mice, huhu grubs, worms, meal worms and insects. They are fed twice a month.



Extinction Report:

- ❖ Total estimated numbers are 50,000-60,000, but over half of those are on Stephens Island where numbers are exceptionally high.
- ❖ Tuataras were fully protected in 1895, referring only to *Sphenodon punctatus*.
- ❖ Tuatara are listed as rare in the 1992 IUCN Red Data Book.



Cultural Significance:

Tuatara feature in a number of indigenous legends, and are held as *ariki* (God forms). Tuatara are regarded as the messengers of Whiro, the god of death and disaster, and Māori women are forbidden to eat them.

Conservation

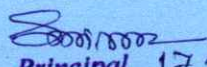
Unfortunately, the unique evolutionary history of NZ and the equally unique features of our native herpetofauna are what have left many species particularly vulnerable to predation by introduced mammals and the environmental change caused by humans. At present 29% of New Zealand's reptile species are classified as threatened, with another 45% identified as being at risk. Sadly, tuatara and 37% of our endemic lizard species are now relegated to offshore islands. The greatest threats to New Zealand's native herpetofauna continue to be habitat destruction and predation by introduced mammalian predators.

Submitted by :-

Anjali Das, B.Sc. 3rd Sem

Department of Zoology (Hons.)

Mugheria Gangadhar Mahavidyalaya


Principal 17/02/2020
Mugheria Gangadhar Mahavidyalaya