Telangana Biodiversity

A Newsletter of Centre for Biodiversity and Conservation Studies, Osmania University

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Editorial

We are happy to present the newsletter of Centre for Biodiversity and Conservation Studies, Osmania University, that aims at sharing relevant information on the biodiversity of and conservation issues in Telangana State. The newsletter is formatted to appeal to all stakeholders and aims to cover many vital aspects that are of immediate concern. We aim to focus on threatened taxa of Telangana State, highlight contributions of people or organisations striving to study and conserve biodiversity and introduce one species each of flora and fauna in each of the four issues that will be published online for broader circulation.

In this first issue of Telangana Biodiversity newsletter, we present the news on the centre of excellence in Osmania University to study biodiversity and conservation issues; a feature on Amrabad Tiger Reserve; insights on two critically endangered species in Telangana State; about Ms. Tejdeep Kaur Menon's contribution to biodiversity; news on environmental education; the importance of ants; citizen science program on documenting biodiversity in Telangana State; information on state tree and state animal; and brief notes on international bat workshop, mobile biodiversity festival and COVID-19.

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Photo: Julissa Helmuth

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Briefly

Centre for Biodiversity and Conservation Studies

Osmania University has established the Centre for Biodiversity and Conservation Studies - A Centre of Excellence under the MHRD-RUSA 2.0, Government of India. The Centre has a global outlook with a local focus. It aims principally at documenting and mapping flora and fauna of Telangana State and take up research and studies on conservation issues both within and outside the Telangana State. The Centre will work in collaboration with the Government departments and agencies, including Forest Department, Fisheries Department, Animal Husbandry, Botanical Survey of India, Zoological Survey of India, and others.

The Centre will also focus on creating awareness on biodiversity conservation through activities and social media platforms, conduct training workshops to various stakeholders, and coordinate the citizen science initiation on documenting biodiversity.

Photo: C. Srinivasulu

Special Feature

Amrabad Tiger Reserve

A treasure trove of biodiversity, the Nallamala Hills in the Eastern Ghats have been attracting researchers and non-researchers alike due to its picturesque locales, biodiversity, tribals, and their culture, and religious places. Amrabad Tiger Reserve, once a part of Nagarjunasagar Srisailam Tiger Reserve - India's largest Tiger Reserve, is located in the northern Nallamala Hills, an area north of the river Krishna that forms the southern boundary of Telangana in the Ghats. It extends over an area of 2,611.39 sq km (2166.37 sq km core and 445.02 sq km buffer) in Nalgonda and Nagarkurnool districts of Telangana State.

Amrabad Tiger Reserve is home to rich biodiversity, including more than 650 species of plants, 50 species of fishes, 20 species of amphibians, 52 species of reptiles, 286 species of birds, and 50 species of mammals. A rich diversity of invertebrate diversity, including that of spiders, beetles, moths, butterflies, hemipterans, and odonates are also observed here. Significant flora includes *Anogeissus latifolia*, *Cleisthanthus collinus*, *Terminalia tomentosa*, *Terminalia arjuna*, *Pterocarpus marsupium*, *Hardwickia binata*, *Boswellia serrata*, *Tectona grandis*, *Albizzia lebbeck*, *Madhuca indica*, *Butea monosperma*, *Butea frondosa*, *Dendrocalamus strictus*, and others. Four species of endemic reptiles - Ashwamedh's Skink, Sharma's Mabuya, Nagarjuna Sagar Racer, and Nagarjuna Sagar Fan-throated Lizard are also known from here.

The endemic and vulnerable Yellow-throated Bulbul (*Pycnonotus xantholaemus*) is known from the Umamaheshwaram area. It is home to many endangered and protected species of mammals, including Tiger, Leopard, Dhole, Wolf, Jackal, Fox, Sloth Bear, Nilgai, Sambar, Chital, Four-horned Antelope, Chinkara, Blackbuck, Indian Giant Squirrel, Madras Tree Shrew, to name a few. Two species of bats - Blyth's Horseshoe Bat and Cantor's Roundleaf Bat, in Telangana are known from a single cave located in this Tiger Reserve.

Historically, black panther, Malabar Trogon, and Indian Pied Hornbill were also reported from this area. Over the years, the expansion of agriculture and human habitation and infrastructure development on Amrabad Plateau has impacted the biodiversity of this region.

Photo: Munna M.

Photo: Munna M.

Chenchus

Chenchus are perhaps the first inhabitants of mainland India. In Tribes of India: The Struggle for Survival, Christoph von Fürer-Haimendorf describes Chenchus: "They are short and slender in stature, with very dark skin, wavy or curly hair, broad faces, flat noses, and a trace of prognathism (extension or bulging out of the lower jaw), which is a sign of their connection with ancient human beings that roamed the Earth."

He adds: "There are no people in India poorer in material possessions than the jungle Chenchus; bows and arrows, a knife, an axe, a digging stick, some pots and baskets, and a few tattered rags constitute many a Chenchu's entire belongings. He usually owns a thatched hut in one of the small settlements where he lives during the monsoon rains and in the cold weather. But in the hot season, communities split up and individual family groups camp in the open, under overhanging rocks or in temporary leaf-shelters."

The basic unit of Chenchu society is the nuclear family, consisting of a man, his wife, and their children. Each such group holds hereditary rights to a tract of land, and within its boundaries, its members are free to hunt and collect edible roots and tubers. These used to be the Chenchus' staple food, though, in recent years, there has been a change in their diet and ways of subsistence.

- Imran Siddiqui

Photo: Fiore Longo

"Our ancestors taught us only one thing: Love and respect the forest and it will take care of you. Here we don't need money to eat and to live. This forest is our breath and our life."

Threatened Taxa

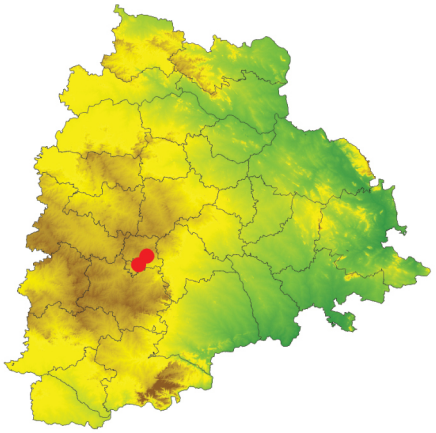
Plant - *Ledebouria hyderabadensis* M.V. Ramana, Prasanna & Venu

Photo: M.V. Ramana

Taxonomy Order Asparagales; Family Asparagaceae.
Geographic Range Endemic to India; found only in Telangana State.
State Distribution Very rare, known only from the Osmania University Campus in Hyderabad, and Dammaiguda hills in Medchal-Malkajigiri district.
Population Nothing is known about its population status or trends.
Habitat & Ecology Bulbous herb found on open fallow lands on gravelly soils, and between boulders in dense tufts, usually associated with *Striga asiatica*, *Kyllinga triceps*, *Cyperus meeboldii*, and *Ophioglossum costatum*.
Major Threats Threatened due to habitat loss and destruction, livestock grazing, and human encroachment.
Use & Trade The species is not in the trade.
Conservation Measures No species-specific conservation measures are in place.

Remarks
This species is found in fallow lands. It does not occur in any protected areas. It is threatened by habitat destruction, livestock grazing, and human encroachment. The estimated number of localities is two; the estimated extent of occurrence (EOO) in Telangana State is <100 km², and the area of occupancy (AOO) is <10 km². There is an inferred continuing decline in the area, extent, and quality of suitable habitat. This species is assessed as Critically Endangered.

Distribution in Telangana State



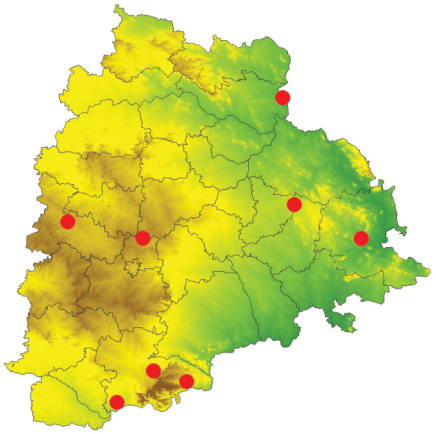
Animal - *Canis lupus* Linnaeus, 1758

Photo: Vijay Sirdesai

Taxonomy Class Mammalia; Order Carnivora; Family Canidae.
Geographic Range Widely distributed. In India, it is patchily distributed, absent in the Western Ghats, Northeast India, Himalayan foothills, and the Terai regions.
State Distribution Occasional; found in Mancherial, Sangareddy, Medchal-Malkajgiri, Nagarkurnool, Bhadradri Kothagudem, and Mahabubabad districts.
Population Nothing is known. The sightings are very few, scattered, and declined.
Habitat & Ecology Inhabits dry open areas, grasslands, and scrublands. Live in packs of 5-11 individuals. Births to 5-6 pups. It preys on small to large ungulates.
Major Threats Threatened due to depletion of prey base, habitat loss, degradation caused by encroachment, persecution, and human-animal conflicts.
Use & Trade The species is not in trade.
Conservation Measures Schedule I of the Wildlife (Protection) Act, 1972 and listed in Appendix I of CITES. It is known from a few protected areas.

Remarks
This species is found in dry open areas, grasslands, and scrublands. It occurs in Amrabad TR, Pranahita WLS, Pakhal WLS, and Kinnerasani WLS. It is threatened by depletion of prey base, habitat loss and degradation, persecution, and human-animal conflicts. It is known from eight localities, with an estimated extent of occurrence (EOO) in the State is <50000 km², and the area of occupancy (AOO) is <5000 km². Basing on the continuing decline in the area, extent and quality of suitable habitat, it is assessed as Endangered.

Distribution in Telangana State



Pioneers in Conservation

Tejdeep Kaur Menon IPS

Tejdeep Kaur Menon, an IPS officer of the 1983 cadre, has served in several capacities, beginning her career as an Assistant Superintendent of Police to rising to Director-General of Police with the Telangana State Special Protection Force (TSSPF). She is the first woman officer to be appointed as the DIG of Police of a range in the state.

A vocal advocate of women's rights, she has been particularly passionate about fighting crimes against women. Equally deft at wielding the pen, she has published four poetry anthologies with the core theme of women's empowerment and nature conservation. Passionate about social and environmental issues, her crusade to save the Ameenpur lake has now become the stuff of legend - Ameenpur lake has been declared a Biodiversity Heritage Site.

Image courtesy: Ajuli Tulsyan

She has motivated stakeholders, TSSPF personnel, members of the NGOs including Hyderabad Birding Pals (HBP) and Friends of Flora and Fauna (FoFF) Society, and locals to become eco volunteers to take up cleaning the surroundings of the lake and creating awareness about the biodiversity and ecosystem services. The Ameenpur Lake has now become a haven to birds, and many bird- and nature-lovers throng to this place to enjoy serenity and beauty of nature. Following the success of this activity, she has started activities that aim at creating awareness amongst school children too and has been instrumental in initiating clean-up campaigns in many places in Hyderabad and nearby areas, including Fox Sagar lake, Himmayat Sagar lake, Osman Sagar lake, and Ananthagiri Hills.

A true spirited lady has excelled and achieved many laurels and continues to give back to society and nature.

Environment Education

Bat Appreciation Walk

The bat biologists of Department of Zoology, Osmania University along with the staff of the Centre for Biodiversity and Conservation Studies, Osmania University and colleagues from University of Bristol, UK have conducted a Bat Appreciation Walk on 16th January 2020 at Golconda Fort, Hyderabad wherein the general public and maintenance staff of the Golconda Fort were made aware of the diversity, types, ecological importance of bats roosting within the fort premises. A total of 8 species of bats are known to roost withing the fort, with the largest known roost of Leschenault's Fruit Bat in Telangana. Other important bats species roosting here include Indian Roundleaf Bat, Naked-rumped Tomb Bat, and Indian False Vampire.

Photo: Chelmala Srinivasulu

Nature for Kids

Ants are our friends

Ants are among the planet's most abundant insects. The total ant population is estimated at one quadrillion (1,000,000,000,000,000). One insect out of a thousand is an ant! Their numbers compensate for their small size. Their presence in nature and their actions towards the environment are essential to the well-being of the habitats in which they live.

Efficient cleaners!

Ants act as decomposers by feeding on organic waste, insects, or other dead animals. They help keep the environment clean. Carpenter ants, which make their nests in dead or diseased wood, considerably accelerate the decomposition process of timber. After the ants leave, fungi and bacteria grow in the galleries and break down the lignin and cellulose on large surfaces.

Photo: Michael Willinger

Ants eat and are eaten

Ants are predators of other insects and their eggs. In their natural habitat, they are a source of food for many invertebrates and vertebrates, including woodpeckers and other insectivorous insects. Bears attack the trees where carpenter ants live to eat ant larvae and pupae.

Front line workers

By digging galleries and tunnels, ants help to aerate and improve drainage of the soil. They till the soil by bringing pebbles and particles to the top. They redistribute nutrients as they move the soil particles from place to place.

Disperse Seeds

Ants provide an invaluable service to plants by transporting their seeds to safer, more nutrient-rich habitats. Ants usually carry seeds to their nests, where some seeds will take root in the fertile soil. The seeds carted off by ants are also better protected from seed-eating animals and less likely to succumb to drought. Myrmecochory, the dispersal of seeds by ants, is particularly useful to plants in tough or competitive environments, such as arid deserts or habitats with frequent fires.

Our Biodiversity

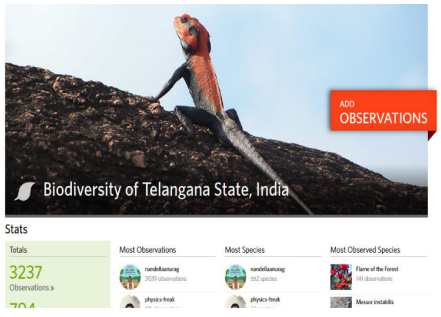
Documenting Biodiversity of Telangana

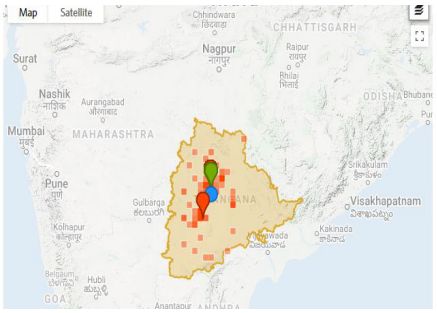
Since 2007, a team of researchers from Osmania University had been compiling the list of flora and fauna present in Telangana State based on published literature, field surveys, and personal observations, and museum-based records. This attempt has resulted in a compilation of 4000 plus species records for Telangana State.

Through a 'Citizen Science Project' on iNaturalist, the Centre for Biodiversity and Conservation Studies, Osmania University aims to add to this database through documentation of flora and fauna present in Telangana State through citizen partnership, collaboration, and contribution.

This database can help stakeholders know about the biodiversity in their areas and also help them document the diversity. So far, the database has 3,238 observations of about 700 species, but as the map indicates, the observation records are not well spread throughout the State.

You too can contribute to documenting the biodiversity of Telangana State by visiting and uploading your observations here: *https://www.inaturalist.org/projects/biodiversity-of-telangana-state-india*

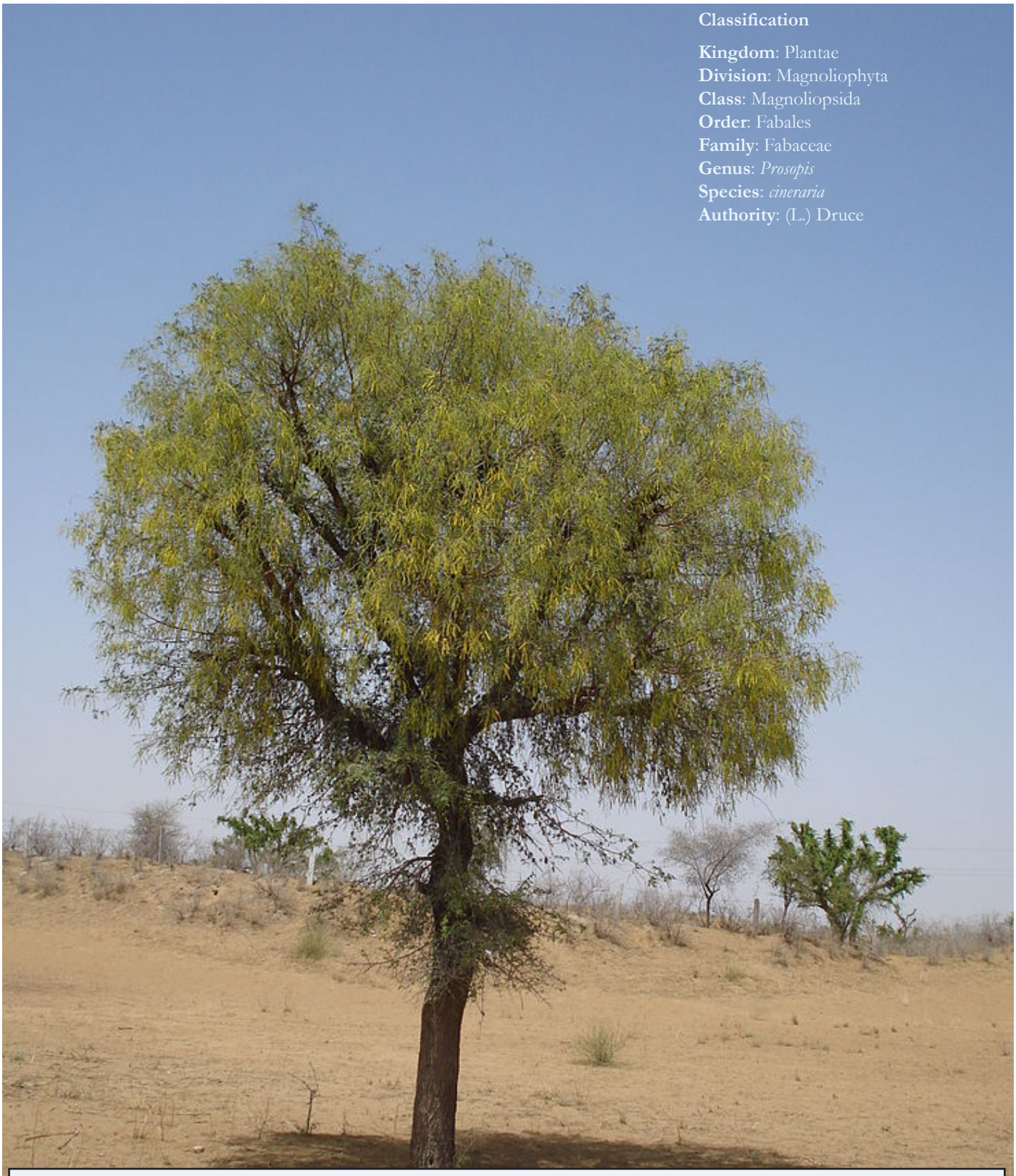




Courtesy: Contributors to BoTS iNaturalist database

Feature - Flora

Jammi - *Prosopis cineraria*



Classification

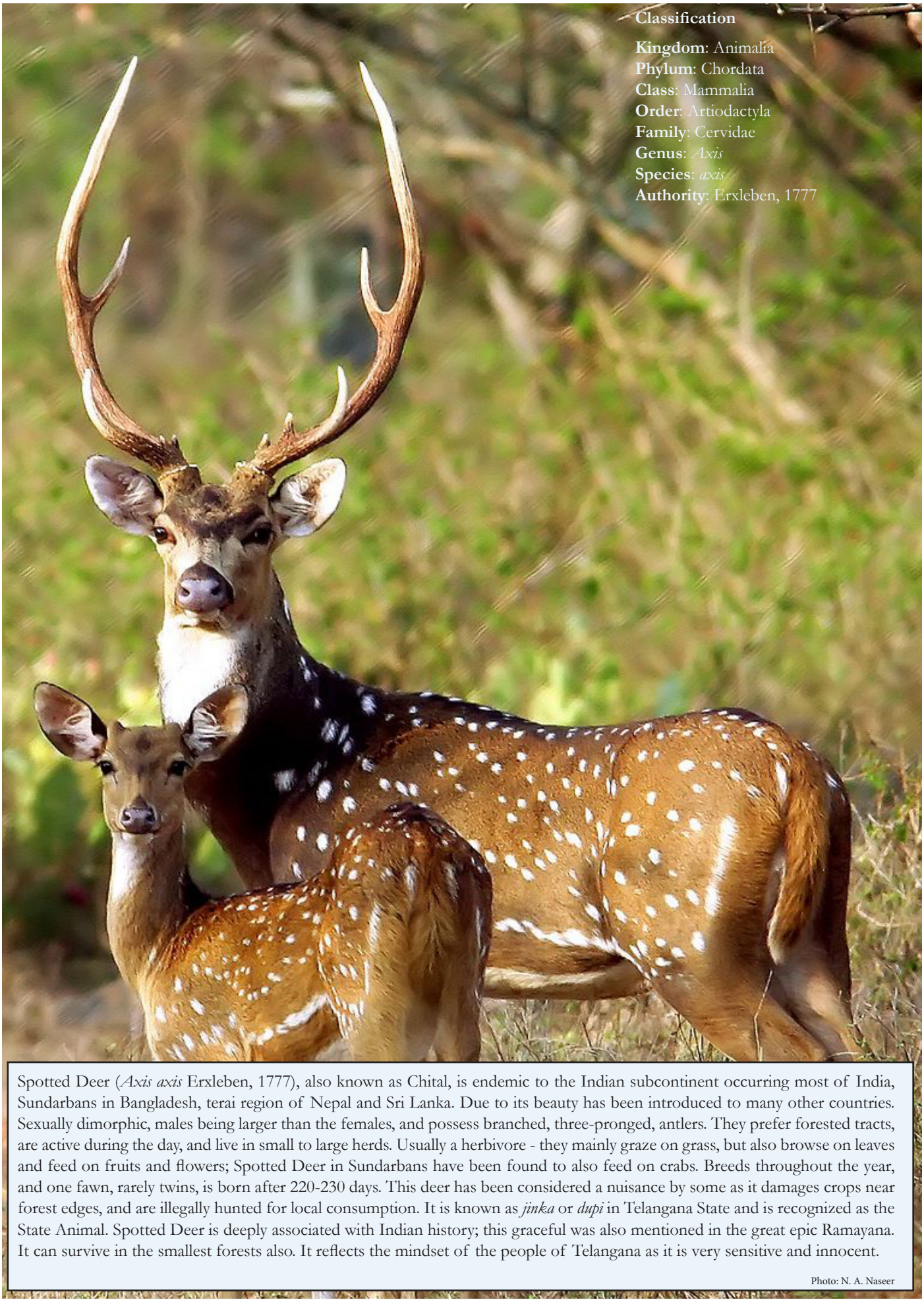
Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Fabales
Family: Fabaceae
Genus: *Prosopis*
Species: *cineraria*
Authority: (L.) Druce

Prosopis cineraria (L.) Druce is a deep-rooted, perennial, and multipurpose tree found in India to the Arabian Peninsula. It is a small tree, ranging in height from 3–5 m (9.8–16.4 ft). Leaves are bipinnate, with seven to fourteen leaflets on each of one to three pinnae. Branches are thorned along the internodes. Flowers are small and creamy-yellow and followed by seeds in pods. Its bark may be ground into flour and used as food during famines. It provides a wide range of environmental services and is much valued in ethnomedicine. It is used traditionally for the treatment of various ailments like leprosy, dysentery, asthma, leucoderma, etc. It is known as *jammi* or *shammi chettu* in Telangana State and is recognized as the State Tree. According to mythology, the Pandavas while in exile (*agnathavasam*) had safely kept their arms on a *jammi* tree and on completion the exile, they had offered prayers to the tree, collected their arms, and defeated the Kauravas in the Mahabharata war. To this date, on Dusshera, local offer prayers to *jammi chettu* and exchange *jammi* leaves with each while greeting on this auspices day marking the victory of good over evil.

Photo: L.R. Burdak

Feature - Fauna

Spotted Deer - *Axis axis*



Classification

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Artiodactyla
Family: Cervidae
Genus: *Axis*
Species: *axis*
Authority: Erxleben, 1777

Spotted Deer (*Axis axis* Erxleben, 1777), also known as Chital, is endemic to the Indian subcontinent occurring most of India, Sundarbans in Bangladesh, terai region of Nepal and Sri Lanka. Due to its beauty has been introduced to many other countries. Sexually dimorphic, males being larger than the females, and possess branched, three-pronged, antlers. They prefer forested tracts, are active during the day, and live in small to large herds. Usually a herbivore - they mainly graze on grass, but also browse on leaves and feed on fruits and flowers; Spotted Deer in Sundarbans have been found to also feed on crabs. Breeds throughout the year, and one fawn, rarely twins, is born after 220-230 days. This deer has been considered a nuisance by some as it damages crops near forest edges, and are illegally hunted for local consumption. It is known as *jinka* or *dupi* in Telangana State and is recognized as the State Animal. Spotted Deer is deeply associated with Indian history; this graceful was also mentioned in the great epic Ramayana. It can survive in the smallest forests also. It reflects the mindset of the people of Telangana as it is very sensitive and innocent.

Photo: N. A. Naseer

Events

Workshop on Bat Studies

Photo: S. Dihora

Osmania University, Hyderabad, and the University of Bristol, Bristol has jointly organized a 5-day international workshop on techniques for bat taxonomy, ecology, and conservation at Osmania University between 13th to 17th January 2020. The workshop was attended by 43 participants from India, Nepal, and the United Kingdom. Dr. Chelmala Srinivasulu and Prof. Gareth Jones, India, and UK lead of the DST-UKIERI collaborative project being executed by them to understand the impact of climate change on bats in central and western India, led the workshop.

News

Mobile Biodiversity Festival

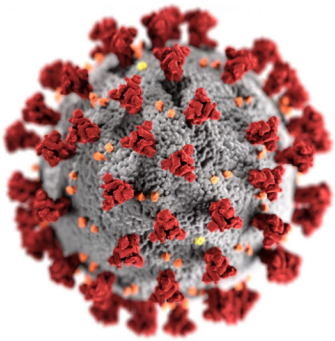
Courtesy: DDS

Deccan Development Society (DDS) has spearheaded and conducted a month-long Mobile Biodiversity Festival between the 14th of January and 15th of February 2020, covering 28 villages of the Zaheerabad region in western part Telangana State. This festival involves the exhibition of agrobiodiversity through the display of seeds of hundreds of local and traditional variety of crops taken from village to village on bullock carts accompanied by folk singers, dancers, and farmers who share information and experiences about traditional varieties, their importance, and conservation, and also empower women and young.

Signing Off

COVID-19 : A pandemic in waiting?

On December 31, 2019, the WHO's People's Republic of China Country Office recognized and notified the WHO Regional Office about 'viral pneumonia' cases reported in Wuhan. On January 9, 2020, the Chinese authorities have determined that the outbreak is caused by a novel coronavirus - SARS-CoV II. On January 13, the first case outside Wuhan, China, was reported from Thailand. By January 21, it was established that the transmission on SARS-CoV II is through "human-to-human transmission" mode. On February 11, WHO announced that the disease caused by the novel coronavirus would be named COVID-19. Following best practices, the name of the disease was chosen to avoid inaccuracy and stigma and therefore did not refer to a geographical location, an animal, an individual, or a group of people. On February 29 WHO published considerations for the quarantine of individuals in the context of containment for COVID-19. This was in anticipation of the infectious nature of the SARS-CoV II virus and the spread of COVID-19 through asymptomatic carriers. There is a pandemic in waiting.



Courtesy: CDC/Alissa Eckert, MS

We hope you have enjoyed this issue... If you wish to share information, do not hesitate to contact us.

Centre for Biodiversity and Conservation Studies

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