

An aerial photograph of a winding asphalt road that curves through a dense, lush green forest. Several cars are visible on the road, including a white car, a blue car, and a dark car. The road has white dashed lines in the center and solid lines on the edges. The text is overlaid on the left side of the image.

www.upschacks.com

DAILY NEWS DECODE

13.10.21

River Lukha



- Recently, the state government of Meghalaya has claimed that a detoxing pilot project has brought the Lukha river back from the dead.
- The Meghalaya Pollution Control Board had in its 2012 investigative report blamed the contamination on acid mine drainage and run-off from the coal mines.
- The pilot project was undertaken under the District Mineral Fund after reports of low pH levels affecting the aquatic life in the river.
- The pilot project to rejuvenate the Lukha by using algae to remove toxic contents from the water has become a success.

- **The Lukha river is in the East Jaintia Hills district where most of Meghalaya's rat-hole coal mines are located.**
- **The Lukha, "reservoir of fish" in the local Pnar language was considered toxic beyond redemption a decade ago.**
- **The Lukha, draining the southern part of East Jaintia Hills, is fed by the Lunar river, its main tributary and numerous streams from the hills of the Narpuh Reserve Forest.**
- **The river flows into Bangladesh.**

www.upschacks.com

New cicada species in Nagaland needs conservation



 UPSCHACKS

- A professor of zoology at the North-Eastern Hill University, Shillong has stressed on the need for the conservation of a newly found cicada species *Platylabus kohimaensis*.
- It was found in the Naga Hills, Nagaland.
- The species was found near the village of Mitelphe within the Kohima district.
- Naga hills, which lie within the Indo-Burma biodiversity hotspot.
- The emergence of this cicada occurs more in areas around undisturbed bamboo groves.

- The collection site of *Platyomia kohimaensis* was a semi-disturbed forest patch, with human activities as evident nearby in the form of farming and agriculture land.
- The newly discovered cicada sings only in the dusk for a few hours.
- The sound is like a continuous cackling...like kok..kok..kok..kok.
- Most cicadas call during the day. But this one calls only for a few hours' window around dusk.
- No new cicada was discovered after those found by British entomologists in the Naga hills in the early 1900s.
- As of now, it's not recognised as a taxa of significance.
- Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs.
- The generic diversity of cicadas in India and Bangladesh ranks the highest in the world, followed by China.
- Most cicadas are canopy dwellers and are found in natural forests with large trees.
- Cicadas, with their acoustic signatures, act as indicators of a healthy forest ecosystem.
- They are in the suborder Auchenorrhyncha, along with smaller jumping bugs such as leafhoppers and froghoppers.

- **Some cicadas like *Savazana mirabilis* and *Salvazana imperialis* they discovered in Meghalaya prefer only certain tree species found in undisturbed forests.**
- **The periodical cicada *Chremistica ribhoi* (locally called niangtaser and popular as 'world cup cicada') described in 2013 is confined to areas surrounding the Nongkhyllem Wildlife Sanctuary in Meghalaya, extending north up to Jirang block in Ri Bhoi district bordering Assam.**
- **Earlier, the species had a much wider range, up to areas near Byrnihat and Orlong Hada in the east, bordering Assam.**
- **However their emergence is now confined to only areas adjoining Nongkyllem Wildlife Sanctuary**

Indian meteorite helped study Earth's formation



 UPSCHACKS

- A meteor shower near Nagpur in 2012 helped scientists unravel the composition of Earth's lower mantle.
- A large meteor shower occurred in 2012 near the town of Katol in Nagpur.
- The shower caused sonic booms or thunder-like noises, initially spreading rumours that an aircraft had crashed.
- The researchers from the Geological Survey of India collected about 30 meteorite fragments with the largest weighing around a kilogram.
- Initial studies revealed that the host rock was mainly composed of olivine, an olive-green mineral.

- **Olivine is the most abundant phase in our Earth's upper mantle.**
- **Now, by studying the composition of these meteorite fragments, researchers have unravelled the composition expected to be present in the Earth's lower mantle which is at about 660 km deep.**
- **They also say that studying the meteorite could also tell us more about how our Earth evolved from being a magma ocean to a rocky planet.**
- **The researchers took a small sample of the meteorite and examined it using special microscopy techniques.**
- **The mineralogy was determined using a laser micro-Raman spectrometer.**
- **These techniques helped the team identify, characterise the crystal structure of the meteorite and determine its chemical composition and texture**
- **The international team of scientists examined a section of the highly-shocked meteorite from Katol.**
- **The paper published this month in PNAS reports the first natural occurrence of a mineral called bridgmanite.**
- **The mineral was named in 2014 after Prof. Percy W. Bridgman, recipient of the 1946 Nobel Prize in Physics.**

- **Various computational and experimental studies have shown that about 80% of the Earth's lower mantle is made up of bridgmanite.**
- **By studying this meteorite sample, scientists can decode how bridgmanite crystallized during the final stages of our Earth's formation.**

www.upschacks.com

Wild dog or Dhole



- A recent study has identified 114 priority talukas / tehsils where habitats can be consolidated to enhance population connectivity for the dhole or Asiatic Wild Dog (*Cuon alpinus*).
- The dhole or Asiatic Wild Dog is found in three clusters across India namely the Western and Eastern Ghats, central Indian landscape and North East India.
- The Western and Eastern Ghats is a stronghold region for dholes, according to the scientists who carried out the study.
- The dhole is a canid native to Central, South, East, and Southeast Asia.
- It is also called by names- Indian wild dog, whistling dog, red dog, and mountain wolf.

- **It is a highly social animal, living in large clans without rigid dominance hierarchies and containing multiple breeding females.**
- **IUCN status- Endangered**
- **Factors contributing to this decline include habitat loss, loss of prey, competition with other species, persecution due to livestock predation, and disease transfer from domestic dogs.**
- **It is protected under Schedule 2 of the Wildlife Protection Act, 1972.**
- **The creation of reserves under Project Tiger provided some protection for dhole populations sympatric with tigers.**
- **In 2014, the Indian government sanctioned first dhole conservation breeding centre at the Indira Gandhi Zoological Park (IGZP) in Visakhapatnam.**

Germany launches World's First Self-Driving Train



- German rail operator, Deutsche Bahn and industrial group, Siemens launched the first automated & driverless train of the world.
- The self-driving train was launched in the city of Hamburg. This project is being developed by 'Siemens and Deutsche Bahn'.
- It is being dubbed as "world-first". The project is part of a 60-million-euro modernisation of the rapid urban rail system of Hamburg.
- These automated trains will offer a reliable service without laying a single kilometre of new track.

IEA invites India to become full-time member



- **International Energy Agency (IEA) has invited India to become its full-time member.**
- **This membership invitation was given in the light that, India is the world's third-largest energy consumer.**
- **If this proposal is accepted, it will require India to increase its strategic oil reserved to 90 days requirement.**
- **Oil Minister Hardeep Singh Puri held discussions with IEA Executive Director Fatih Birol. During the discussion, IEA executive director invited India to deepen its cooperation with IEA by becoming its full member.**

IEA warns world's clean energy transition is 'too slow'



- **Investment in renewable energy will need to triple by the end of this decade if the world's climate pledges are to be met, the International Energy Agency (IEA) said.**
- **It noted that demand for renewables continues to grow, however, "this clean energy progress is still far too slow to put global emissions into sustained decline towards net zero" by 2050.**