Current Affairs 31st January 2024 by Saurabh Pandey

Northern kangaroo lizard

- The biodiverse forests of the Western Ghats have thrown up yet another marvel of evolution a new species of tiny lizards, which researchers have described as “diminutive dragon”.
- Agasthyagama edge or northern kangaroo lizard, which belongs to the Agamidae family, is known to have a maximum snout-vent length of 4.3 cm.
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- The species is the second one of the Agasthya Gama genus after A. beddomii or Indian kangaroo lizard that has been previously reported from the Sivagiri hills in Tamil Nadu.
- A reduced fifth toe makes these reptiles poor climbers and hence do not climb trees like other lizards.
- Instead, they are mostly terrestrial and found in areas with dense leaf litter cover.
- While they feed on small insects, this variety of kangaroo lizard runs fast and hides within dry leaves to evade predators.
- The findings have been reported in Vertebrate Zoology, a scientific journal published by the Senckenberg Museum in Germany.

Snow Leopard

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- India has an estimated 718 snow leopards in the wild, according to a first of its kind, four yearlong estimation exercise, the results of which were made public.
- The snow leopard is known to be an elusive cat and located in mountainous terrain that is hard to access, and the exercise for the first time marks a base threshold for the animal’s numbers in India.
- The highest number of cats was estimated to be in Ladakh (477), followed by Uttarakhand (124), Himachal Pradesh (51), Arunachal Pradesh (36), Sikkim (21), and Jammu and Kashmir (nine).

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- The current estimate puts the number of Indian snow leopards between 10% and 15% of the global population.

About snow leopard

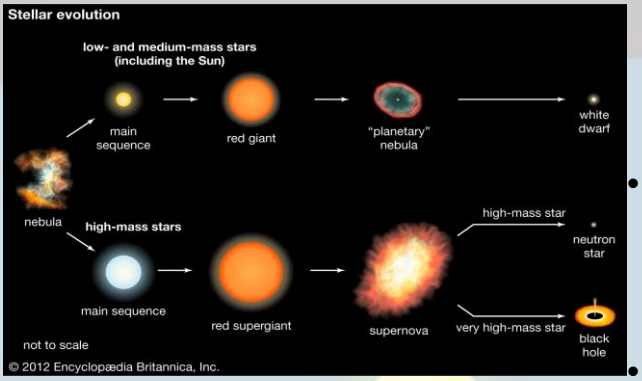
- The snow leopard's powerful build allows it to scale great steep slopes with ease. Its hind legs give the snow leopard the ability to leap six times the length of its body.
- A long tail enables agility, provides balance and wraps around the resting snow leopard as protection from the cold.
- For millennia, this magnificent cat was the king of the mountains. The mountains were rich with their prey such as blue sheep, Argali wild sheep, ibex, marmots, pikas, and hares.
- The snow leopard's habitat range extends across the mountainous regions of 12 countries across Asia: Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan.
- The total range covers an area of close to 772,204 square miles, with 60% of the habitat found in China. It is listed as Vulnerable on the IUCN Red List .
- The Hindu

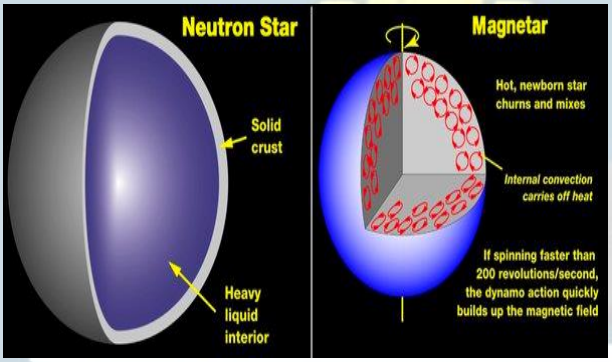
Maratha Military Landscapes

- India has nominated the "Maratha Military Landscapes", a network of forts that showcase the strategic military powers of Maratha rule, for inclusion on the UNESCO World Heritage List for 202425.
- The 12 forts included in this nomination are the forts of Salher, Shivneri, Lohagad, Khanderi, Raigad, Rajgad, Pratapgad, Suvarnadurg, Panhala, Vijaydurg and Sindhudurg in Maharashtra and Gingee in Tamil Nadu.
- The "Maratha Military Landscapes", which developed between the 17th and 19th centuries, represent an extraordinary fortification and military system envisioned by the Maratha rulers.
- This extraordinary network of forts, varying in hierarchies, scales and typological features, is a result of integrating the landscape, terrain and physiographic characteristics distinctive to the Sahyadri mountain ranges, Konkan Coast, Deccan Plateau and Eastern Ghats in the Indian Peninsula.
- They are distributed across diverse geographical and physiographic regions and showcase the strategic military powers of the Maratha rule, the Union Culture Ministry said on Monday.
- The inception of the Maratha military ideology dates back to 17th century during the reign of the Shivaji Maharaj from 1670 and continued through subsequent rules until the Peshwa rule till 1818 CE.

The Hindu

Mass gap

- 

- 

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- **Star cluster NGC 1851 that spotted what appears to be a pair of stars offering a new view into the extremes of matter in the universe.**

- **The system is composed of a millisecond pulsar, a type of rapidly spinning neutron star that sweeps beams of radio light across the cosmos as it spins, and a massive, hidden object of unknown nature.**

- **The massive object is dark, meaning it is invisible at all frequencies of light from the radio to the optical, X ray and gamma ray bands.**

- **In other circumstances this would make it impossible to study, but it is here that the millisecond pulsar comes to our aid. Millisecond pulsars are akin to cosmic atomic clocks.**

- **Their spins are incredibly stable and can be precisely measured by detecting the regular radio pulse they create.**

- **Although intrinsically stable, the observed spin changes when the pulsar is in motion or when its signal is affected by a strong gravitational field.**

- **By observing these changes, we can measure the properties of bodies in orbits with pulsars.**

- **The NGC 1851E system weighs almost four times as much as our Sun, and that the dark companion was, like the pulsar, a compact object much denser than a normal star.**

- **The most massive neutron stars weigh in at around two solar masses, so if this were a double neutron star system (systems that are well known and studied) then it would have to contain two of the heaviest neutron stars ever found.**

- **To uncover the nature of the companion, we would need to understand how the**

mass in the system was distributed between the stars.

- Again using Einstein's general relativity, we could model the system in detail, finding the mass of the companion to lie between 2.09 and 2.71 times the mass of the Sun.
- The companion's mass falls within the "black hole mass gap" that lies between heaviest possible neutron stars, thought to be around 2.2 solar masses, and the lightest black holes that can be formed from stellar collapse, around 5 solar masses.
- At the boundary between neutron stars and black holes there is always the possibility that some new, as yet unknown, astrophysical object might exist.

The Hindu

Water drops formation

- Many windblown drops can be forced together to form what weather reporters call 'sheeting rain', but rain is always born as minuscule drops of condensed water vapour, according to the book Clouds and Weather by John A. Day and Vincent J. Schaefer.
- The formation of these droplets depends on the right amount of water vapor at the right pressure and temperature, but it also requires the presence of tiny solid particles of matter in the air on which the water vapour can gather and condense.
- These bits of dust and salt are called cloud condensation nuclei.
- Salt starts collecting vapor at about 80% relative humidity, while bits of clay begin to take on water molecules at 100% relative humidity.
- As the water molecules slowly collect and condense on the particles, cloud droplets form.
- They are a million times the volume of the original particle but are still very tiny.
- It takes perhaps 3,000 droplets to form a small raindrop.
- The drops in a heavy shower are the size of around 6,000 droplets, according to The New York Times.
- The droplets can grow into drops by several processes.
- First, they can slowly continue to attract vapour. Second, larger droplets fall faster than small ones and collide with them, sometimes joining into larger drops.
- Finally, evaporating droplets may collect on ice crystals in clouds.
- The crystals may warm and melt into rain drops or they may grow 'branches' and fall as snowflakes.

BIG SHOT

The spiral galaxy NGC 1512, located 30 million light-years away from the earth, is seen in this image captured by the James Webb Space Telescope. The images were made public on Monday by scientists in a project called Physics at High Angular resolution in Nearby GalaxieS (PHANGS). The new images came from Webb's Near-Infrared Camera and Mid-infrared Instrument. They show roughly 100,000 star-clusters and millions of individual stars. NASA, ESA, CSA, STScI, PHANGS

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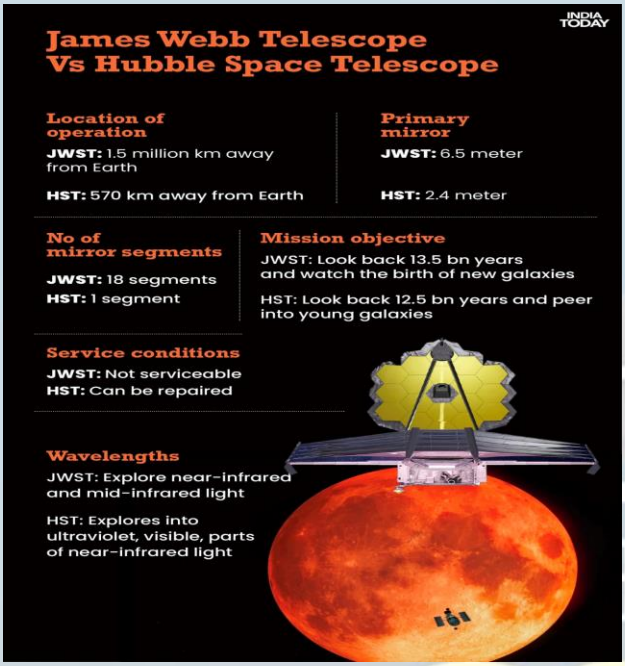

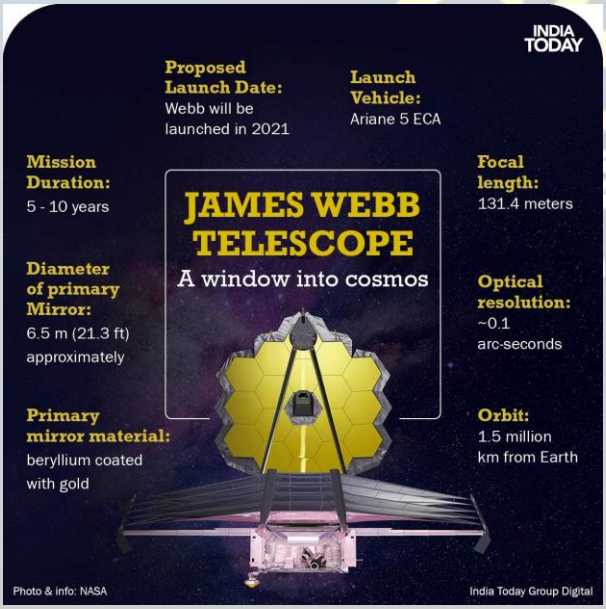

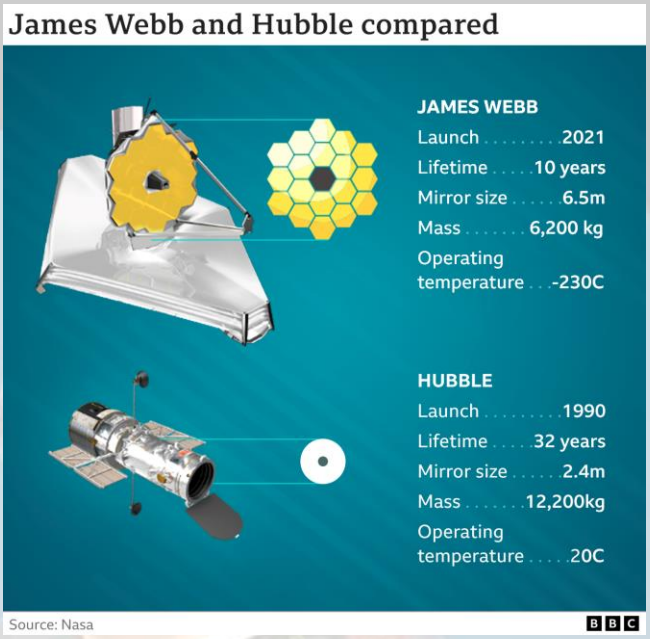

- **The Hindu**

Kangla fort

- **The *Kangla*, officially known as the Kangla Fort, is an old fortified palace at Imphal in the Manipur state of India.**
- **It was formerly situated on both sides (western and eastern) of the bank of the Imphal River, now remaining only on the western side in ruined conditions.**
- **Kangla means "the prominent part of the dry land" in old Meetei.**
- **It was the traditional seat of the past Meetei rulers of Manipur.**
- **Kangla (Imphal) was the ancient capital of pre-modern Manipur.**
- **The Kangla is a revered spot for the people of Manipur, reminding them of the days of their independence. It is a sacred place to the Meiteis.**

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Iran vs Pakistan

- Sri Lanka needs sustained economic growth of 5-6% in the medium term to escape from indebtedness.
- But its outlook is vulnerable to external and internal risks.
- The first is geopolitical competition between the U.S. and China.
- For instance, an intensified U.S. China trade war following the possible victory of Donald Trump in the U.S. presidential elections could be devastating for inward FDI and trade in Sri Lanka.
- The second is debt restructuring.
- In November 2023, Sri Lanka concluded an initial agreement with key bilateral creditors, including India and the Paris Club, to restructure $5.9 billion in external debt.
- This was important for reducing interest payments and unlocking IMF financing in 2024.
- This deal followed China's separate debt restructuring agreement with Sri Lanka.
- These agreements are on similar terms, extending deadlines and lowering interest rates.

The Hindu

Tigray region

- On 16 January, a day after its strikes in Iraq and Syria, Iran targeted Pakistan's Balochistan province, with missiles, killing two.
- On 17 January, condemning the attacks as "unprovoked" and a breach of sovereignty, Pakistan recalled its Ambassador from Tehran and expelled the Iranian Ambassador. Pakistan also suspended all high profile bilateral visits ongoing and planned.
- On 18 January, Pakistan retaliated by targeting "individuals" and "terrorist groups" in Iran's Sistan Baluchestan province, killing nine.
- Pakistan's Foreign Ministry claimed Iran as a close friend, with great respect and affection for the Iranian people.
- On 19 January, the National Security Council meeting decided to "address each other's security concerns in the larger interest of regional peace and stability" as Iran is a "neighborly and brotherly Muslim country."
- On 22 January, a joint statement issued by the two Foreign Ministries agreed on the return of ambassadors.
- Subsequently, on 26 January, the Ambassadors returned to their offices in Tehran and Islamabad.
- On 28 January, Iran's Foreign Minister arrived in Islamabad to discuss economic and security issues between the two countries.

What challenges lie ahead for Pakistan and Iran?

- Though Tehran was one of the first to recognise Pakistan, since the 1979 Iranian revolution, the two countries had a troubled relationship.

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- **Iran's revolution in 1979 and Muhammad ZiaulHaq's regime in Pakistan during the 1980s brought the SunniShia sectarian divide to the fore between the two.**
- **Though both refer to the "brotherly Muslim countries" rhetoric, the sectarian factor was too strong to patch the divide.**
- **Globally, Iran saw Pakistan under the American sphere of influence during the Cold War and post 9/11, especially in Afghanistan. Pakistan and Iran remained in opposite groups; only in recent years has China tried to bring Islamabad and Tehran together.**
- **And regionally, the struggle for supremacy, within the West Asia, pitches Iran and Saudi Arabia on opposite camps, with Pakistan aligned with the latter.**
- **On Afghanistan and the Taliban, both countries have differed on objectives and strategies.**
- **Until recently, Pakistan viewed Tehran as closer to New Delhi than Islamabad.**
- **Pakistan's nuclear bomb is seen as a Sunni one, pushing Tehran to have its own for the Shia world.**

The Hindu