

REPORT ON MELTING

- Scientists report that the seven worst years for polar ice sheets melting and losing ice have occurred during the past decade, with 2019 being the worst year on record.
- Combining 50 satellite surveys of Antarctica and Greenland taken between 1992 and 2020, the international team of researchers has found that the melting ice sheets now account for a quarter of all sea level rise, a fivefold increase since the 1990s.
- In their study, the researchers found that the earth's polar ice sheets lost 7,560 billion tonnes of ice between 1992 and 2020, which is equivalent to an ice cube that would be 20 km in height.
- They also found that the polar ice sheets have together lost ice in every year of the satellite record, and the seven highest melting years have occurred in the past decade.
- The loss, driven by an Arctic summer heatwave, led to record melting from Greenland peaking at 444 billion tonnes that year. Antarctica was found to have lost 168 billion tonnes of ice, the sixth highest on record, due to the continued speedup of glaciers in West

Antarctica and record melting from the Antarctic Peninsula.

- The East Antarctic ice sheet was found to remain close to a state of balance, as it had throughout the satellite era.
- Melting of the polar ice sheets has been found to cause a rise of 21 millimeters (mm) in global sea level since 1992, almost two-thirds, or 13.5 mm, of which has originated from Greenland and one-third, or 7.4 mm, from Antarctica.

THE HINDU

ABC PROGRAM

- The Animal Birth Control (ABC) Rules that were first introduced in 2001 by the Ministry of Culture, and are now replaced by even more absurd ABC Rules, 2023.
- The policy aims to implement a technique called 'catch-neuter-vaccinate-release' to control populations of free-ranging dogs and cats.
- The ABC program does not seem to have any benchmarks or targets.
- The other major problem is that the ABC Rules, 2023, bizarrely require people to feed dogs, wherever they may be the kindest cut of all is that the ABC Rules ban the euthanasia of rabid animals, making India the only

country in the world to follow such a cruel practice.

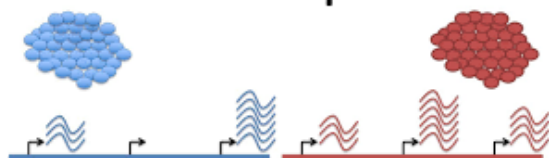
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SOUTH COL and RNA sequencing

RNA SEQUENCING

- RNA-Seq (named as an abbreviation of RNA sequencing) is a sequencing technique that uses next-generation sequencing (NGS) to reveal the presence and quantity of RNA in a biological sample at a given moment, analyzing the continuously changing cellular transcriptome.
- The transcriptome is the set of all RNA transcripts, including coding and non-coding, in an individual or a population of cells.
- The term can also sometimes be used to refer to all RNAs or just mRNA, depending on the particular experiment.

A Gentle Introduction To: RNA-Seq!!!!



THE HINDU

Melanocyte stem cells

- Melanocyte stem cells (McSCs). During normal hair growth, the melanocyte stem cells continually move back and forth on the maturity axis as they transit between compartments of the developing hair follicle.
- Melanocytes are specialized neural crest-derived cells.
- They are responsible for hair, skin, and eye pigmentation, so they are specialized pigment-producing cells.
- Melanins are pigments that are synthesized in melanosomes.

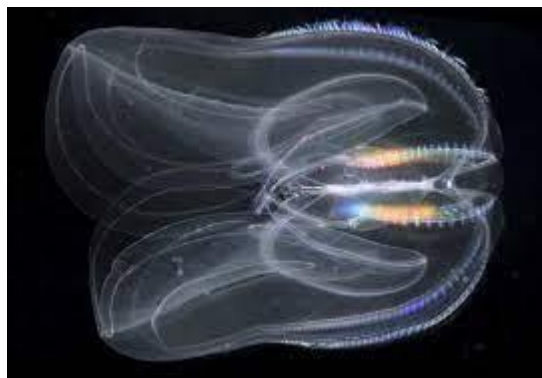


THE HINDU

Ctenophora

- The evolution of the nervous system may have followed multiple paths and risen independently in two early lineages of animals, as per a study of ctenophores marine invertebrates that contain an elaborate nerve net nervous system, commonly known as comb jellies.

- The findings (Science) show that the nerve net of ctenophores is different from nerve nets found in species from other lineages of animals, providing new insights into the complex origins of the nervous system.



- The Cerrado is a vast ecoregion of tropical savanna in eastern Brazil, being present in the states of Goiás, Mato Grosso do Sul, Mato Grosso, Tocantins, Maranhão, Piauí, Bahia, Minas Gerais, São Paulo, Paraná, and the Federal District.
- The core areas of the Cerrado biome are the Brazilian highlands and the Planalto.
- The main habitat types of the Cerrado consist of forest-savanna, wooded savanna, park savanna, and gramineous-woody savanna.
- **THE HINDU**

THE HINDU

Cerrado

- Areas set aside for conservation within private lands could play a valuable role in protecting the biodiversity of the Brazilian Cerrado (Science).
- The analysis in this region, where private agricultural land use often conflicts with conventional conservation approaches, suggests that sharing the responsibility for protecting biodiversity with the private sector can increase international commitments to avoid biodiversity loss. Private protected areas accommodate up to 14.5% of threatened vertebrate species' ranges.

Microbes

- The South Col is the ridge that separates Mt. Everest from Lhotse the fourth-highest mountain on Earth. The two peaks are only three kilometers apart.
- Microbes keep arriving, carried by either birds, animals, or winds. Up to about 6,000 msl, dust particles, less than 20 micrometers in diameter, are blown in by the winds.
- Using sophisticated methods such as 16S and 18S rRNA sequencing, the microbe hunters were able to identify the bacteria and other microorganisms found on the South Col.
- The South Col is a sharp-edged col between Mount Everest and Lhotse,

the highest and fourth-highest mountains in the world, respectively. The South Col is typically swept by high winds, leaving it free of significant snow accumulation.

THE HINDU



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Elephant Seals

- Elephant seal, also called sea elephant, either of the two largest pinnipeds (aquatic mammals of the suborder Pinnipedia): the northern elephant seal (species *Mirounga angustirostris*), now found mainly on coastal islands off California and Baja California; or the southern elephant seal (*M. leonina*), found throughout sub-Antarctic regions.
- Rivaling the record for least sleep among mammals, northern elephant seals sleep a mere two hours a day, split into a series of nap-like “sleeping dives” at depths not typically occupied by predators.
- The findings (Science), which leveraged a new tool to detect sleep at sea, provide insights into the sleeping behavior of animals who must sleep while avoiding predation