

KSG: NEWSPAPER CRUX

11ST SEPTEMBER 2022

NEWSPAPER HIGHLIGHT

While there are several drugs undergoing clinical trials for tackling obesity, many have already fallen through due to undesirable side effects in human patients. Over the past two decades, laboratory has been working on how the modifications of the gene rather than the gene sequence itself can regulate gene function. This branch of molecular biology is called epigenetics. The epigenetic changes are reversible and directly correlated with habits as well as social and environmental cues. Our genetic material DNA is wrapped around protein balls called histones to form the highly organised genome. Different chemical modifications of both DNA and histones can dictate the fate of genes in terms of them being switched on or remaining switched off. This on/off balance of gene expression is critical for health and disease.

Scientists from the Institute of Astrophysics of the Canary Islands decided to take a population level look at a group of planets that are seen around a star called an M-dwarf. They saw a surprising picture. The densities of a large percentage of the planets suggested that they were too light for their size to be made up of pure rock. Instead, these planets are probably something like half rock and half water, or lighter molecule. These planets are so close to their suns that any water on the surface would exist in a supercritical gaseous phase, which would enlarge their radius. That suggests the water is not in the form of surface ocean. Instead, the water could exist mixed into the rock or in pockets below the surface, which suggested that many planets form farther out in their solar systems and migrate inward over time.

Cloudburst events are often associated with cumulonimbus clouds that cause thunderstorms and occasionally due to monsoon wind surges and other weather phenomena. Cumulonimbus clouds can grow up to 1215 km in height through the entire troposphere (occasionally up to 21 km) and can hold huge amounts of water.

Smoke from Australia's extreme wildfires between December 2019 and February 2020 increased atmospheric temperatures and probably made the hole in the ozone layer bigger. The plumes of smoke that rose into the atmosphere

TARANTULA NEBULA

1. NASA's James Webb telescope has captured the stunning image of the Tarantula Nebula in detail. The Tarantula Nebula (or the 30 Doradus) is a stellar nursery situated in the Large Magellanic Cloud galaxy 161,000 light years away. The nebula stretches across 340 light years.

2. It is the largest and the brightest star-forming region in the Local group that includes our Milky Way galaxy. The Tarantula Nebula is named for its filaments of dust that looked like spider silk in previous images. The Tarantula Nebula has a cavity that has been hollowed out by the radiation emitted by a cluster of young stars. The powerful winds emitted by the young stars have blown away all but densest areas of the nebula, giving it the appearance of a burrowing tarantula's home.

3. The densest part of the nebula form pillars of dust and gives birth to massive protostars (very young stars). These protostars emerge from their "dusty cocoons" and help shape the nebula. It was previously thought the protostars were older stars.

4. Studying a nebula that is close enough to be observed gives scientists an opportunity to know more about the 'cosmic noon' - when the universe was only a few billion years old and producing stars at a rapid pace.

GOGRA-HOTSPRINGS AREA

1. India and China armies have begun to disengage from Patrolling Point-15 (PP-15) in the Gogra-Hotsprings area of Eastern Ladakh. The two armies are likely to set up a "buffer zone" or "no-patrolling" area at Patrolling Point 15 as they did in other friction points. This disengagement would mark a step forward to end the standoff ongoing since May 2020.

2. **Patrolling Points are certain locations along the LAC where the Indian Army troops patrol the area to assert their control over the territory.** They are decided by the China Study Group (CSG). Friction points - PP15 in Hot Springs and PP17A near Gogra Post were among the four friction points between India and China.

3. The other two friction points are PP14 in Galwan Valley and the north bank of Pangong Tso. Gogra-Hotsprings Area - Both PP-15 and PP17A are close to Chang Chenmo River in Galwan in eastern Ladakh. They are located north of Karakoram Range of mountains, and southeast of Galwan Valley.

THE GENDER SNAPSHOT 2022

1. The Progress on the Sustainable Development Goals (SDG): The Gender Snapshot 2022 was released recently. The Gender Snapshot 2022 report was launched by UN Women and the UN Department of Economic and Social Affairs (UN DESA). It displayed that Sustainable Development Goal 5 (SDG-5), or achieving gender equality, will not be met by 2030 at the current pace of progress.

2. **Highlights of report - 286 years will be needed to achieve full gender equality at current rate of progress. By end of 2022, around 383 million women and girls will live in extreme poverty (on less than \$1.90 a day) compared to 368 million men and boys.** The longer we take to reverse this trend, the more it will cost us all. Over 1.2 billion women and girls of reproductive age (15-49) live in countries and areas with some restrictions on access to safe abortion.

3. Women hold only 2 in every 10 science, engineering and information and communication technology jobs globally. Global challenges, such as the COVID-19 pandemic and its aftermath, climate change and the backlash against women's sexual and reproductive health and rights further exacerbate gender disparities.

4. **Recommendations - To eradicate child marriage by 2030, progress must be 17 times faster than progress of the last decade.** Long-term structural barriers to gender equality, laws and practices The report displays how cooperation, partnerships and investments in gender equality agenda are essential to put the world back on track. needs to be addressed and dismantled.

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caused temperatures to spike by 3°C over Australia.

With rivers breaking their banks glacial lakes bursting, Pakistan is experiencing its worst floods this century. At least one-third of the country is under water, some 33 million people have been displaced and more than 1,200 have died. Scientists say that heatwaves and a stronger monsoon led to floods.

Artificial Intelligence and machine learning can cause a veritable revolution in the working of the world today, yet their development is hindered by the fact that the present state of the art in electronics does not match up to what is needed. In a move towards developing devices that can mimic the workings of neurons in the brain, researchers from Indian Institute of Science, Bengaluru (IISc), have designed neuromorphic devices using organic materials that have not been used hitherto. Their work since 2014 aimed towards this. Organic materials had been considered the poorest of different material types in making computing components because they were fragile and unstable.

India stayed out of the joint declaration on the trade pillar of the U.S. led Indo-Pacific Economic Framework (IPEF) ministerial meet in Los Angeles, with Union Commerce Minister Piyush Goyal citing concerns over possible discrimination against developing economies. India was the only one of the 14 IPEF countries, which include South East Asian countries, Australia, New Zealand, South Korea and Japan, not to join the declaration on trade. However, a statement by the government said India had “engaged exhaustively” on all the four pillars, and was “comfortable” with the outcome statements on the other three pillars: supply chains, clean economy (clean energy) and fair economy (tax and anticorruption).

There is confusion over the implementation of new adoption rules that require transfer of adoption petitions from courts to District Magistrates, and parents, adoption agencies and activists are worried that this could lead to further delays in a long and arduous procedure.

Hong Kong jailed five speech therapists for sedition over a series

SHUMANG LEELA

- 1.The 50th All Manipur Shumang Leela Festival 2021-2022 kicked off at Iboyaima Shumang Leela Shanglen at Palace Compound in Imphal.
- 2.Shumang Leela (courtyard play) is a Manipuri theatrical art form developed in the 19th-20th century. It descended from Lai Haraoba, a ritual of the Meitei community.
- 3.Shumang leela is performed to live music by either an all-male cast (who play women’s roles too) or an all-women cast (who play men’s roles too) called nupi shumang leela, and occasionally transgenders too.

BPAL TREATMENT

- 1.The clinical trial led by the TB alliance has showed that the new therapy protocol BPAL treatment regimen remains effective against highly drug-resistant strains of tuberculosis (TB) with a reduced dosage. The BPAL is a 6-month, all-oral three-drug regimen that is used to treat people with highly drug-resistant forms of TB.
- 2.This regimen consists of three antibiotics - Pretomanid (newest anti-TB drug), Bedaquiline and Linezolid. The BPAL regimen has been developed by TB Alliance, a non-profit organization. Significance - With BPAL, it is likely to take just three daily tablets. A shorter regimen, which is all oral and requires lesser doses per day, makes it easier for a patient to adhere and complete treatment. BPAL will reduce the TB treatment time drastically from 18 months to 6 months.
- 3.**Facts - India has the world's highest TB burden: 2.6 million active cases. The total number of estimated deaths from all forms of TB, excluding HIV, for 2020 was 4.93 lakh (4.53-5.36 lakhs) in the country, 13% higher than the 2019 estimate.** India is also one of the top high-burden countries for MDR/RR-TB as estimated by the WHO for 2021-2025.
- 4.The Global TB Report 2021 stated that the mortality rate due to all forms of TB between 2019 and 2020 increased by 11% in India.

PRADHAN MANTRI TB MUKT BHARAT ABHIYAAN

- 1.Pradhan Mantri TB Mukta Bharat Abhiyaan is aimed at working towards elimination of TB from the country by 2025, by bringing together people from all backgrounds into a ‘Jan Andolan’. The ‘Abhiyaan’ has been envisioned to bring together all community stakeholders to support those on TB treatment and accelerate the country’s progress towards TB elimination.
- 2.The ‘Abhiyaan’ is a step towards garnering community support towards a patient-centric health system.
- 3.Objectives of the Initiative Provide additional patient support to improve treatment outcomes of TB patients. Augment community involvement in meeting India’s commitment to end TB by 2025. Leverage Corporate Social Responsibility (CSR) activities. It will be implemented by the Union Ministry of Health and Family Welfare (MoHFW).

EC’S MOVE TO WEED OUT SHADY POLITICAL PARTIES

- 1.Income Tax officials carried out pan-India raids on registered unrecognized political parties (RUPPs). Key Highlights: EC data showed there were 2,796 RUPPs a year ago, a 300% increase over two decades. In the 2019 Lok Sabha election, only 30% of RUPPs contested. RUPPs are entitled to 100% income tax exemption provided they meet conditions pertaining to furnishing tax returns.
- 2.**Registered Unrecognized Political Parties: Either newly registered parties or those which have not secured enough percentage of votes in the assembly or general elections to become a state party. OR**
- 3.Those which have never contested elections since being registered are considered unrecognized parties. They do not enjoy all the benefits extended to the recognised parties.

SETU

- 1.Supporting Entrepreneurs in Transformation and Upskilling (SETU) will connect start-ups in India with US-based investors, mentors and leaders.
- 2.Interactions can be done using the mentorship portal under

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of illustrated children's books that portrayed the city's democracy supporters as sheep defending their village from wolves. They join a growing list of residents jailed under a colonial era sedition offence which authorities have deployed alongside a national security law introduced by Beijing in 2020 to stamp out dissent.

A global, multicentric study with over 1.55 lakh participants has shown that risk factors for cardiovascular disease were similar in high, low and middle income countries, and largely among both men and women, with a few differences only, the results of a recent Lancet publication has shown. Done as part of the Prospective Urban Rural Epidemiological (PURE) study, ongoing in 21 nations, 1,55,724 (58.4% women 41.6% men). The study also found lipid markers (cholesterol) and depression are more strongly associated with the risk of cardiovascular disease in men than in women, whereas diet is more strongly associated with the same risk in women than in men.

the Startup India initiative MAARG (Mentorship, Advisory, Assistance, Resilience and Growth) Programme.

3. MAARG is a single-stop solutions finder for startups in India. Ministry: Commerce and Industry. India ranks globally 3rd in the startup ecosystem and also in terms of the number of Unicorns. As per the latest data, there are currently 105 unicorns.