

NEWSPAPER HIGHLIGHT

The government introduced the 'Antarctica Bill' in the Lok Sabha that envisages regulating visits and activities to Antarctica as well potential disputes that may arise among those present on the continent. The Bill also prescribes penal provisions for certain serious violations. The text of the Bill, which was introduced by Science Minister, Jitendra Singh, on Friday says that it seeks to "... prohibit Indian expedition to Antarctica or carrying of certain activities in Antarctica without a permit or the written authorisation of another party to the protocol...provide for inspection in India by an officer designated by the Central government as an Inspector and to constitute an inspection team to carry out inspections in Antarctica."

As a record number of 4.92 lakh Olive Ridley turtles have crawled to the Rushikulya coast in Odisha, scientists have tagged more than 6,000 turtles to gather more information about their breeding behaviour and migration.

India's gross Goods and Services Tax (GST) collections hit a record ₹1,42,095 crore in March, surpassing the January high of ₹1,40,986 crore and lifting the Centre's projected gross tax revenues for 2021-22 significantly above the government's revised estimates. The March GST revenues, for transactions undertaken in February, were 15% higher than a year earlier and 46% higher than in March 2020. Revenues from import of goods were 25% higher and the revenues from domestic transactions, including import of services, were 11% higher than a year earlier.

Russia and India are looking at ways to "bypass" the sanctions imposed by the United States, European Union and partners, visiting Russian Foreign Minister Sergey Lavrov said on Friday after talks with External Affairs Minister S. Jaishankar. Mr. Lavrov, who flew into Delhi from Beijing a week after Chinese Foreign Minister Wang Yi visited, met Prime Minister Narendra Modi before his departure.

Chief Justice of India N.V. Ramana on Friday said that with the passage of time, like every other institution of repute, the Central Bureau of Investigation (CBI) had also come under deep public scrutiny. Its actions and inactions had raised

MICROPLASTIC

1.A new study has found Microplastic particles in the blood samples of 17 out of the 22 persons, half of these were polyethylene tetrathalate (PET) plastics. It is not yet clear if these microplastics can cross over from the blood stream to deposit in organs and cause diseases.

2.**Microplastics are tiny bits of various types of plastic found in various places - the oceans, the environment, and now in human blood. They are ubiquitous pollutants found almost everywhere on earth.** The name is used to differentiate them from "macroplastics" such as bottles and bags made of plastic.

3.There is no universal agreement on the size that fits this bill. However, the U.S. National Oceanic and Atmospheric Administration (NOAA) and the European Chemical Agency define microplastic as less than 5mm in length.

GENOME EDITING TECHNOLOGY

1.The Central Government paved the way for easy introduction of genome edited crops. The genome-edited crops are different from genetically-modified crops. A decade ago, scientists in Germany and the US discovered a technique which allowed them to 'cut' DNA strands and edit genes.

2.**For agriculture scientists this process allowed them to bring about desired changes in the genome by using Site Directed Nuclease (SDN) or Sequence Specific Nuclease (SSN).** Nuclease is an enzyme which cleaves through nucleic acid - the building block of genetic material. The highly effective clustered regularly interspaced palindromic repeat (CRISPR)-associated proteins based systems allow for targeted intervention at the genome sequence.

3.This tool has opened up various possibilities in plant breeding. This tool can now edit genome to insert specific traits in the gene sequence. Categories - Depending on the nature of the edit that is carried out, the process is divided into three categories - SDN 1, SDN 2 and SDN 3. SDN1 introduces changes in the host genome's DNA through small insertions/deletions without introduction of foreign genetic material.

4.In the case of SDN 2, the edit involves using a small DNA template to generate specific changes. Both these processes do not involve alien genetic material and the end result is indistinguishable from conventionally bred crop varieties. But, the SDN3 process involves larger DNA elements or full length genes of foreign origin which makes it similar to Genetically-modified organisms (GMO) development.

DIFFERENCE BETWEEN GENE-EDITED ORGANISMS AND GMO

1.Genetically-modified Organisms involves modification of the genetic material of the host by introduction of a foreign genetic material. In the case of agriculture, soil bacteria is the best mining source for such genes which are then inserted into the host genome using genetic engineering.

2.**The basic difference between genome editing and genetic engineering is that while the former does not involve the introduction of foreign genetic material, the latter does.** In the case of agriculture, both the techniques aim to generate variants which are better yielding and more resistant to biotic and abiotic stress.

3.Before the advent of genetic engineering, such variety improvement was done through selective breeding which involved carefully crossing plants with specific traits to produce the desired trait in the offspring. Genetic engineering has not only made this work more accurate but has also allowed scientists to have greater control on trait development.

CORAL REEFS AND CORAL BLEACHING

1.The management authority of Australia's Great Barrier Reef confirmed that the reef is experiencing a mass coral bleaching event. Australia's Great Barrier Reef is the world's largest reef

questions regarding its credibility, in some cases. Delivering the 19th D.P. Kohli Memorial Lecture, organised by the CBI, he said there was an immediate need for the creation of an independent umbrella institution, so as to bring various central agencies like the CBI, Enforcement Directorate and the Serious Fraud Investigation Office under one roof.

India's fuel sales surged past pre-pandemic levels in March on twin impact of the economy rebounding from the lifting of pandemic related restrictions and anticipation of price increases leading to stocking. Petrol sales by state owned fuel retailers at 2.69 million tonnes during March were almost 8.7% higher than the same period last year and 14.2% higher than the period in 2019, preliminary industry data showed.

European buyers of Russian gas faced a deadline to start paying in roubles on Friday, while negotiations aimed at ending the five week war were set to resume even as Ukraine braced for further attacks in the south and east.

Solomon Islands Prime Minister Manasseh Sogavare said his government would not allow a Chinese military base to be built in his country "under its watch" as he defended a pending security agreement with Beijing.

Beginning his three day visit to India, Nepal Prime Minister Sher Bahadur Deuba on Friday met with External Affairs Minister S. Jaishankar and BJP President J.P. Nadda. In a public reception hosted by the Embassy of Nepal, Mr. Deuba referred to the ancient cultural relationship between the two countries and said Nepal had reemerged to engage its important neighbours following the COVID19 pandemic.

President Gotabaya Rajapaksa declared a state of Emergency in crisis-hit Sri Lanka, a day after angry citizens converged in front of his residence demanding his immediate resignation.

Seeking to provide for social, political and economic rehabilitation of Kashmiri Pandits, Rajya Sabha member Vivek K. Tankha on Friday moved a private member's Bill in the Upper House, which, he said, was the first of its kind in 32 years. The Kashmiri Pandits (Recourse, Restitution, Rehabilitation and Resettlement) Bill, 2022 also seeks for Kashmiri Pandits' protection of their property, restoration of their cultural heritage, ensuring their

system stretching across 2,300 km. It hosts 400 different types of coral, gives shelter to 1,500 species of fish and 4,000 types of mollusc. Coral reefs are the largest living structures on the planet.

2.They are large underwater ecosystem composed of the skeletons of colonial marine invertebrates called coral. Each coral is called a polyp and thousands of such polyps live together to form a colony, which grows when polyps multiply to make copies of themselves. Types - Corals are of two types - hard corals and soft corals. Hard corals (hermatypic or 'reef building' corals) extract calcium carbonate from the seawater to build hard, white coral exoskeletons.

3.Soft coral polyps, however, borrow their appearance from plants; attach themselves to such skeletons and older skeletons built by their ancestors. They also add their own skeletons to the hard structure over the years and these growing multiplying structures gradually form coral reefs. Symbiotic relationship - Corals share a symbiotic relationship with single-celled algae called zooxanthellae. Zooxanthellae provide the coral with food and nutrients, which they make through photosynthesis, using the sun's light. In turn, the corals give the algae a home and key nutrients.

4.The zooxanthellae also give corals their bright colour. Significance - Coral reefs support over 25% of marine biodiversity; even as they only take up 1% of the seafloor. The marine life supported by reefs further fuels global fishing industries.

5.Besides, coral reef systems generate \$2.7 trillion in annual economic value through goods and service trade and tourism. Coral reefs also provide protection from storm waves. Dead reefs can revive over time if there are enough fish species that can graze off the weeds that settle on dead corals, but it takes almost a decade for the reef to start setting up again.

CORAL BLEACHING

1.Bleaching happens when corals experience stress in their environment due to changes in temperature, pollution or high levels of ocean acidity. Under the stressed conditions, the zooxanthellae start producing reactive oxygen species, which are not beneficial to the corals. So, the corals expel the colour-giving zooxanthellae from their polyps, which expose their pale white exoskeleton, giving the corals a bleached appearance.

2.This also ends the symbiotic relationship that helps the corals to survive and grow. A 2021 study by the UN-supported Global Coral Reef Monitoring Network (GCRMN) showed that 14% of the world's coral on reefs had been lost between 2009 and 2018, with most of the loss attributed to coral bleaching. Recovery - Bleached corals can survive depending on the levels of bleaching and the recovery of sea temperatures to normal levels.

3.If heat-pollutions subside in time, over a few weeks, the zooxanthellae can come back to the corals and restart the partnership. But severe bleaching and prolonged stress in the external environment can lead to coral death. Previous events - The first mass bleaching event had occurred in 1998 and the second one in 2002.

4.However, in the past decade, mass bleaching occurrences have become more closely spaced in time, with the longest and most damaging bleaching event taking place from 2014 to 2017. This is due to the fact that climate change and increased global warming owing to rising carbon emissions and other greenhouse gases have made seas warmer than usual.

NEW INVESTMENT POLICY-2012

1.The Cabinet Committee on Economic Affairs has approved the proposal of the Department of Fertilizers for extension of applicability of New Investment Policy (NIP)-2012 for the three units of Hindustan Urvarak & Rasayan Ltd.

2.The New Investment Policy of 2012 was proposed by the Department of Fertilisers, Ministry of Chemical & Fertilizers. In 2013, the Government of India approved this policy to facilitate fresh investments in urea sector and to make India self-sufficient. The policy lays down guidelines to fix gas prices and also other roadmaps for attracting investment in the urea sector. It provides a structure of a floor price and a ceiling price for the amount payable to Urea units, which will be calculated based on the delivered gas price (inclusive of charges & taxes) to respective urea units.

3.The floor and ceiling price of each urea unit shall be operative

safety and security, provision of rehabilitation and resettlement package.

Union Agriculture Minister Narendra Singh Tomar said in the Rajya Sabha that the government would form a committee on minimum support price (MSP) as promised by Prime Minister Narendra Modi in November 2021 as soon as it received names of representatives from the Samyukt Kisan Morcha (SKM).

with respect to the computed Import Parity Price (IPP). IPP defined for urea under the investment policy of 2008 is the average C&F price without any applicable custom duties and handling and bagging charges at the port.

4.If the computed IPP (payable) is between the floor and the ceiling price for that gas cost, it is the IPP (payable) which will be used. If the IPP is above or below the ceiling or the floor respectively, it is the ceiling or floor price that will be acceptable as the case may be.