

NEWSPAPER HIGHLIGHT

The Botanical Survey of India, in its new publication Plant Discoveries 2020 has added 267 new taxa/species to the country's flora. The 267 new discoveries include 119 angiosperms; 3 pteridophytes; 5 bryophytes, 44 lichens; 57 fungi, 21 algae and 18 microbes. In 2020, 202 new plant species were discovered across the country and 65 new records were added among the new discoveries this year, nine new species of balsam (*Impatiens*) and one species of wild banana (*Musa pradhanii*) were discovered from Darjeeling and one species each of wild jamun (*Syzygium anamalaianum*) from Coimbatore in Tamil Nadu and fern (*Selaginella odishana*) were recorded from Kandhamal in Odisha. There are 14 new macro and 31 new micro fungi species recorded from various parts of India.

Climate change and its impact is increasingly being acknowledged as a key risk driver for the financial system by governments, regulators and financial firms, said M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India (RBI). "Climate risks can impact the financial sector through two broad channels; first physical risks which mean economic costs and financial losses resulting from the increasing severity and frequency of extreme weather events and longterm climate change, and second transition risks which arise as we try to adjust towards a low carbon economy.

The Delhi government has finished installation of filters in the smog tower in Delhi, which was inaugurated last month. Also, a team from IIT Bombay has started a study on the impact of the tower on the air quality, officials said. The smog tower is a 24 metre high structure fitted with fans and air filters and it will draw in polluted air from the top and release purified air near the ground through fans fitted on sides. The tower has 40 big fans and 5,000 filters to clean the air and the fans suck in air, which will be cleaned as it passes through the filters.

India will resume the export of COVID19 vaccines under its 'Vaccine Maitri' programme to fulfil the commitment towards COVAX (COVID19 Vaccines Global Access), Union Health Minister Mansukh Mandaviya said on Monday. "We are resuming Vaccine Maitri next month

PARKER SOLAR PROBE

1.Scientists using data from NASA's Parker Solar Probe have assembled the most complete picture yet of the inner structure and behavior of the large cloud of space dust, known as the zodiacal cloud, that swirls throughout the solar system.

2.They found three dust populations in the cloud-Most of the grains are being slowly pulled in toward the Sun (alpha-meteoroids). The second population is generated as grains in the swirling cloud collide, creating fragments so small that they are pushed out of the solar system in all directions by pressure from sunlight (beta-meteoroids). A third group, probably created when a "tube" of cometary debris collides with grains from the first two populations, is scattered out in a distinctive wedge shape.

3.About the mission-NASA's historic Parker Solar Probe mission will revolutionize our understanding of the sun, where changing conditions can propagate out into the solar system, affecting Earth and other worlds. Parker Solar Probe will travel through the sun's atmosphere, closer to the surface than any spacecraft before it, facing brutal heat and radiation conditions — and ultimately providing humanity with the closest-ever observations of a star.

4.Journey- In order to unlock the mysteries of the sun's atmosphere, Parker Solar Probe will use Venus' gravity during seven flybys over nearly seven years to gradually bring its orbit closer to the sun. The spacecraft will fly through the sun's atmosphere as close as 3.9 million miles to our star's surface, well within the orbit of Mercury and more than seven times closer than any spacecraft has come before.

PAKISTAN EXPLOITING SCOPE OF URANIUM ENRICHMENT IN GILGIT BALTISTAN

1.In violation of international laws, Pakistan has been exploiting the scope of uranium enrichment in Pakistan-occupied Gilgit-Baltistan, confirmed locals and political activists from the occupied region.

2.India's concerns: Earlier, there were reports that Pakistan has given a free hand to Chinese mining companies to plunder natural resources in Gilgit Baltistan. There are reports that over 2,000 leases for mining of gold, uranium and molybdenum have been illegally awarded to Chinese firms by the Pakistan government in occupied Gilgit Baltistan and Khyber Pakhtunkhwa.

3.What exactly is uranium and what are its uses? Occurrence-occurs naturally in low concentrations in soil, rock and water and is commercially extracted from uranium-bearing minerals. Applications-Uranium that has a silvery grey metallic appearance is mainly used in nuclear power plants due to its unique nuclear properties. Depleted uranium is also used as a shield against radiation in medical processes using radiation therapy and also while transporting radioactive materials. Though itself radioactive, uranium's high density makes it effective in halting radiation.

4.What is the goal of uranium enrichment? Uranium contains a rare radioactive isotope, called U-235, that can be used to power nuclear reactors at low enrichment levels and to fuel nuclear bombs at much higher levels. The goal of uranium enrichment is to raise the percentage levels of U-235, which is often done through the use of centrifuges — machines that spin a form of unrefined uranium at high speeds.

NATIONAL TRUST

1.The Ministry of Social Justice & Empowerment had recently organised meetings with officials and other stakeholders of Jammu & Kashmir and Ladakh for implementation of National Trust Act, 1999. Background-This act looks into the welfare of people with autism, cerebral palsy, mental retardation and multiple disabilities. The Act also provides for the setting up of the National Trust.

2.About the National Trust-The National Trust is a statutory body of the Ministry of Social Justice and Empowerment,

in line with our motto 'Vasudhaiva Kutumbakam'," the Minister said. The surplus supply of vaccines would be used to fulfil India's commitment towards the world in the collective fight against the virus, he added. COVAX is coled by Gavi, the Coalition for Epidemic Preparedness Innovations (CEPI) and the World Health Organization.

The judiciary would not interfere with the States' decision on reopening schools, the Supreme Court said on Monday. The decision to open schools was entirely that of the States and the court would not "queer the pitch", a Bench of Justices D.Y. Chandrachud and B.V. Nagarathna stated. The judiciary had neither the data nor the expertise to pass "omnibus" directions to the States to open schools and resume physical classes, especially when the lives of children were at stake.

The Delhi government will start spraying biodecomposer for free in 4,000 acres of paddy fields in Delhi from October 5, to tackle stubble burning, Delhi Government said. Biodecomposer is a solution, which, if sprayed in fields, decomposes straw and stubble into manure. The government sees it as a solution to stubble burning and has also been urging other States to adopt it.

The September rainfall in India is 27% more than what is normal for the month. With a fresh rainbearing pressure system forming in the Bay of Bengal, it is also likely that the withdrawal of the monsoon, which normally starts by September 17, is expected to be delayed. Until Augustend, a crippling rainfall deficit had brought India dangerously close to a droughtlike situation with a nearly 9% deficit, but a resurgence of rain since September has narrowed the deficit to 3%.

Prime Minister Narendra Modi's emissary S. Jaishankar warned against passing the Constitution in 2015, former Nepalese Prime Minister K.P. Sharma Oli has said in documents submitted to his party. The Indian diplomat who arrived as a special emissary of the Prime Minister of India threatened the leaders of the political parties not to promulgate the Constitution and that it would not be accepted if it was done against India's suggestions," said the papers from Mr. Oli's collection. "He said the consequences would be negative," said the documents written in Nepali.

Government of India. It was set up under the "National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities" Act. Its mandate is to discharge two basic duties – legal and welfare.

3.Objectives-The objectives of the National Trust in particular are: To enable and empower persons with disability to live as independently and as fully as possible within and as close to their community as possible; To facilitate the realisation of equal opportunities, protection of rights and full participation of persons with disability; To extend support to its registered organisations to provide need-based services; and To evolve procedures for appointments of guardians and trustees for persons with disabilities.

4.Disabilities under NTA-The National Trust works for the welfare of persons with any of the following four disabilities-Autism, Cerebral Palsy, Mental Retardation, Multiple Disabilities.

GOVERNMENT RELIEF PACKAGE FOR TELECOM SECTOR

1.The Union Cabinet, last week, approved a crucial relief package for the cash-strapped telecom firms. What is the relief package? Package includes a four-year moratorium on payment of statutory dues by telecom companies as well as allowing 100% FDI through the automatic route. The wide set of measures proposed entail reforms for the ailing sector by way of granting moratorium on unpaid dues, redefining Adjusted Gross Revenue (AGR) prospectively and cutting in Spectrum Usage Charges.

2.How does the package help? It provided much needed relaxation to telecom companies Vodafone Idea, Reliance Jio and Bharti Airtel. These are expected to protect and generate employment opportunities, promote healthy competition, protect interests of consumers, infuse liquidity, encourage investment and reduce regulatory burden on Telecom Service Providers (TSPs). A moratorium on AGR-related dues will offer space to the cash-strapped firm to improve its business and clear dues over a longer period. The definition of AGR has been changed to exclude non-telecom revenue. All non-telecom revenue will be removed from AGR.

3.How did the financial condition of the telcos deteriorate? Let's understand this in three simple steps: **It started by and large with the differing legal interpretation of AGR. To understand this, one must go back to 1999, when the government decided to shift from a fixed to a revenue-sharing model for the telecom sector.** Telecom players would pay a certain percentage of their AGR, earned from telecom and non-telecom revenues, as licence and spectrum fee. In 2003, the Department of Telecom (DoT) raised the demand for AGR payments. It said all revenue earned by telcos as dividend from subsidiaries, interest on short-term investments, money deducted as trader discounts, discount for calls and others, which was over and above the revenue from telecom services, would be included for calculation of AGR.

4.The telcos approached the Telecom Disputes Settlement Appellate Tribunal (TDSAT), which in July 2006 ruled the matter must be sent back to the regulator TRAI for fresh consultation. TDSAT rejected the government's contention, and the Centre moved the Supreme Court. While the case was still ongoing, in 2012, the Supreme Court cancelled 122 telecom licences in the 2G scam case. This prompted a revamp, with spectrum now allocated through auctions.

5.What was the Supreme Court verdict? **In 2019, the Supreme Court gave the first verdict in the case, holding that DoT's definition of AGR was the correct one, and that the telcos must pay the AGR, interest and penalty on non-payment.**

ISOTHERMAL FORGING TECHNOLOGY

1.DRDO has developed Critical near Isothermal Forging Technology for aeroengines.

2.Isothermal forging-Isothermal forging is a closed-die process in which the dies and the workpieces are heated to the same temperature, so that forming can take place without loss of temperature in the workpiece. It's a preferred process for forming engineered parts, including jet-engine and other aerospace components in high-density lightweight alloys. In this process, the workpiece is formed to shape at a slow rate and at a temperature almost equal to that of the heated die. The long forging time, alongside forces exerted by the die, help to form an almost 'ready to use' component needing minimal supplementary

Prime Minister Narendra Modi and U.S. President Joe Biden will meet on Friday for their first in-person discussion, the White House announced. In a publicly released schedule, the bilateral was listed first, followed by a summit level meeting of Quad leaders.

machining.

3. Significance: This is a crucial technology for establishing self-reliance in aeroengine technology. With this development, India has joined the league of limited global engine developers to have the manufacturing capabilities of such critical aero engine components.