

In this issue

Science and Social Media

Indian engagement

Mention and coverage of research in social media is growing worldwide. But India lags behind the world average, says a General Article on **page 753**.

From 91,106 records with at least one Indian as author in the Web of Science for 2016, the researchers extracted 88,259 unique records. Of these, only 76,621 had a DOI.

They also downloaded the Altmetrics data – alternative metrics of research as reflected in Twitter, Facebook, online news, as well as academic networks like Mendeley from altmetric.com.

The analysis shows that only 28.5% of WoS records for India were mentioned in social media – way below the world average of about 47%. Since there is a correlation between social media coverage and citations, this lack of engagement of Indian researchers in social media may be an indirect indicator of impact citations that they may receive.

There is a wide variation in social media engagement of researchers from different disciplines, say the researchers. To find out how your research area fares, read on from **page 753**.

Inversion Polymorphism

Chromosomal evolution

Even before DNA was confirmed as genetic material, geneticists have been intrigued by changes in chromosomes. Besides gross changes such as gain or loss of chromosomes, chromosome doubling, inversions of parts of chromosomes were noticed in the early days of genetics. A Review Article examines one of these intriguing phenomena – inversions that tend to suppress crossover between chromosomes derived from male and female parents.

What causes inversions? What are the advantages and disadvantages of chromosomal inversions? Are there differences between inversions that occur near the centromere that aligns the chromosomes for crossover and those that occur towards the distal end

of chromosomes? How do inversions impact evolution and speciation?

In spite of the growth of DNA technologies, the insights required to answer such questions are limited. B. N. Singh from the BHU summarises the research of the last hundred years on inversion polymorphism in *Drosophila* to set the stage for future research. See **page 761**.

Landslides in Western Ghats

August 2018 rainfall

From 11th to 17th August 2018, there were incessant heavy rains in the south-west parts of India. Besides flooding, this led to many landslides. The Geosciences Group at NRSC, ISRO, Hyderabad examined high-resolution images from various satellites. By analysing the images before and after the extreme rainfall event, they prepared an inventory of landslides.

A total of 6970 landslides were mapped in the southern parts of the Western Ghats. More than 5000 were in Kerala. Karnataka and Tamil Nadu also had a large number of landslides.

The researchers provide the details of the districts affected in each of the three states in a Research Article in this issue. Interestingly, besides the intensity of rainfall and slope of landforms, there are other factors that increase the chances of landslides. For insights on the issue, read on from **page 804**.

Indian Monsoon 2019

Peeping into performance

By the end of June 2019, anxieties about the deficiency of the monsoon in India skyrocketed. By the end of July, the tension abated. And by the middle of August, worries shifted from deficiency of rains to floods in different parts of India. Sulochana Gadgil, P. A. Francis and P. N. Vinayachandran attack the problem of identifying the factors responsible for the large fluctuation in the rainfall in a Research Article in this issue.

There are two major parameters that determine the year-to-year fluctuations of the Indian summer monsoon, which together explain more than 50 per cent

of the variance, they say. These are the El Niño-Southern Oscillation over the Pacific and the Equatorial Indian Ocean Oscillation, which create the see-saw in the cloudiness over the western and eastern equatorial Indian Ocean.

They explain the interplay of these two factors in creating deficient, normal and excess rainfall through the years with analysis of Indian rainfall data and global datasets of sea-surface temperature, winds, satellite derived cloudiness and data from a moored buoy in the equatorial Indian Ocean.

After explaining the deficient rain in June and the processes that led to a revival later that overcame the deficit in most areas to even create excess rainfall in some others, the researchers go on to speculate on the performance of the monsoon for the remaining part of the monsoon season. To get some idea of how the monsoon is likely to fare this year, flip to **page 783** in this issue.

Meteorology and Agriculture

Peanut productivity in Bundelkhand

Indian agriculture is heavily dependent on rains. So it is easy to imagine that, since India is witnessing a monsoon revival, agricultural productivity should also increase. However, while precipitation has indeed increased in some regions, it has actually decreased in others. And while heavy rains that lead to floods have increased, light and moderate rain, useful for agriculture, has decreased.

This gross pattern is repeated at a lower, regional scale. While there is increasing trend of rainfall in some parts of the Bundelkhand region, in others it is decreasing. A Research Communication on **page 794** in this issue examines the relationship between this meteorological phenomenon and peanut productivity. While moderate rain throughout the rainy season means high productivity, late start of monsoon or heavier rains spell gloom for peanut farmers in the region, point out the authors.

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