

In this issue

Restoring Mangrove Forests

Revising forestry strategies

From the end of the 18th century, there was large scale felling of mangrove forests by the British in India, first to expand land under agriculture and, then, for firewood to run railways and steamers. Even after independence, the importance of the mangrove ecosystem was not appreciated. And, by the time we realised that clear felling, or even rotational felling of annual coupes, did not result in the regeneration of mangroves as expected, there was an ecological crisis in the offing. Areas, where mangroves were felled, subsided. The depressions accumulated the salty waters of the tide which evaporated and made the depressions more saline than surrounding areas...

By the late 1980s, the M. S. Swaminathan Research Foundation stepped in to restore the mangrove ecosystem. Scientific investigations to understand the reasons for the non-regeneration of felled mangroves and the changes in topography, and devising ways to restore the ecosystem by simple interventions, were only a part of the solution. The other part was facilitating a community-centred joint mangrove management system where foresters and local villagers, especially fishers and farmers, played important roles to restore mangroves.

Starting from the Pichavaram mangrove forest in Tamil Nadu in 1990, the project went on to cover other degraded mangroves along the east and west coast of India, demonstrating again and again, that it is possible to restore mangroves. A Research Account in this issue explains the processes and provides the insights required to restore the ecosystem and its services. The authors call upon younger foresters to join the efforts to protect the coastal green belts of the nation. Turn to **page 1288** to see what you can do to help.

Notch and Crumbs

Pick up the sugars

Notch proteins on cell membranes mediate communication between cells. And

Crumbs, another membrane bound protein, is responsible for retaining the polarity of the cells. Together, these two types of proteins keep the population of cells and tissue integrity under check. If this restraint is removed cells proliferate in an uncontrolled manner and even separate from the tissue. In other words, the cells develop into tumours or even turn cancerous.

A Review Article by researchers from the Central University of Haryana examines the known functions of Notch and Crumbs and their relationships. Besides the similarities expected for proteins that straddle cell membranes, there are other structural similarities that signal a possible common evolutionary origin. Both are glycoproteins. Crumbs regulate the localisation of Notch proteins on the membrane. And the molecular interactions between them are probably regulated by the addition or subtraction of sugars or the glycosylation of the proteins.

The Review Article spells out the gaps in our knowledge about the dynamics between Crumbs and Notch, which, if filled, might lead us to treatments for cancers. Turn to **page 1297** for insightful details.

Gender Disparity

In science communication too?

Gender disparity among those doing scientific research in India is a well recognised fact. But does this tendency extend to science communication?

Biju Dharmapalan and G. Mahesh from CSIR-NIScPR and Phuldeep Kumar from DRDO-DESIDOC analysed the gender dimension among those who contributed to *Science Reporter* between 2010 and 2020. In a Research Article on **page 1302** in this issue, they provide their analysis of the data of more than 2000 authors who contributed to the popular science monthly magazine over eleven years.

The disparity was as high as 124 male authors to only 28 female authors in 2010. Though the gap has been closing slowly in time, even in 2018, when the gap was least, male authors outnumbered

female authors by 94 to 60. And then, by 2020, the gap widened again.

Curiously, the data on articles written by more than one author suggests that there is a higher tendency among female rather than male authors to write collaboratively. And even more curiously, the number of authors from Delhi and West Bengal is greater than those from Tamil Nadu or Maharashtra.

The article signals the need for a wider study, including other publications in English as well as in regional languages, on the issue of gender disparity in science communication to inform policy making in the country.

Flycatchers of the Western Ghats

Climate and Conservation

The endemic birds of the Western Ghats, such as the Black-and-orange Flycatcher, *Ficedula nigrorufa* and the Nilgiri Flycatcher, *Eumyias albicaudatus* prefer the shola and evergreen forests at high altitudes on the Western Ghats. What are the environmental variables that determine the distribution of these species? What is the extent of suitable area available for these birds in the Western Ghats? How will the populations of these two species fare when the climate changes?

To answer these questions, researchers from the Kerala Agricultural University developed distribution models for these species, using the maxent algorithm. They used presence-only bird occurrence data from eBird and Kerala Bird Atlas and climate data from CHELSA to develop the models. And they simulated predictions about the species suitability for the 2050s by using different representative concentration pathways.

The Research Article in this issue provides a map of the Western Ghats where we should expect to find the flycatchers. It also provides clues on action to be taken to conserve the two bird species. Turn to **page 1335**.

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