

In this issue

Parasitic Plants

On postal stamps

Some plants extend haustoria, special structures in their roots, into the roots of other plants, to extract water and nutrients from phloem. Some others tap into xylem also to reduce the burden of synthesising carbohydrates. Since all this happens under the soil, such parasitic plants are not easily recognised.

But scientists have dug into the matter and find that parasitism has evolved independently at least 12 times in plants. Most of these lineages have evolved to tap into both xylem and phloem. The sandalwood order is the most diverse with about 20 families of parasitic plants.

A General Article in this issue unearths postal stamps issued by various countries to highlight parasitic plants and brings to light the various roles that parasitic plants play in the ecosystem, their uses and aesthetic values. The article also lists plants that have not, so far, adorned postage stamps.

Turn to **page 1538** for details.

Cultural Heritage Monuments

Protecting from fungal damage

India has a rich diversity of cultural monuments. And a richer diversity of fungi. Fungal damage to plaster, stone, metal, wood and even glass can disfigure and make monuments look ugly.

A Review Article in this issue, by scientists from the CSIR-Central Building Research Institute, Roorkee provides a perspective on the varieties of fungi that degrade different materials used in heritage monuments. The article also spells out the methods available for protecting and preserving the tangible heritage.

The conservation and protective measures suggested are not merely for archeologically important sites,

but also for modern buildings. So, even home owners are invited to home in on the article on **page 1553** in this issue.

Linking Ken and Betwa

Sinking tiger habitats

The rivers, Ken and Betwa, start from the Vindhyas in Madhya Pradesh and flow north towards Uttar Pradesh to eventually meet the Yamuna. While the Ken flows through the Panna district, the Betwa flows through the Vidisha district of Madhya Pradesh. Interlinking the two will minimise water problems in the drought-prone Bundelkhand area of Uttar Pradesh.

But this will involve the submergence of a considerable part of the Panna Tiger Reserve, points out a Research Article in this issue. The Panna Tiger Reserve had faced local extinction of tigers and, after their reintroduction in 2009, the tiger population has slowly managed to grow to more than 50. Besides tigers, there is a large variety of other predators. To maintain a balance, there are a number of prey species, as well as many species of reptiles, fish... The rich animal and plant diversity has earned fame for the reserve and it has been declared a Biosphere Reserve under UNESCO's Man and the Biosphere Programme.

The river interlinking project will mean a loss of a hundred square kilometres of the critical tiger habitat and two million trees. About 7000 people will be displaced. Though the project can help irrigate 6 lakh hectares and benefit 70 lakh people far away, do the costs balance the benefits?

Should we not, instead, emulate the case study of Jakhni village in Bundelkhand which, through indigenous efforts at water conservation, overcame the threat of drought-pro-

ness? Is sinking the tiger reserve the only way to make Bundelkhand self-sufficient in water?

The Research Article on **page 1572** provides food for thought.

Brown Planthopper Distribution

Meteorology and climate

The brown planthopper is a major pest of rice causing billions of rupees of loss every year. A Research Article in this issue examines the distribution of the insect in India and, using the maximum entropy model, identifies the meteorological factors that influence its distribution. Annual mean temperature, precipitation and mean diurnal temperature range emerged as the main predictive factors.

Since annual mean temperature was found to be the most crucial factor, the researchers probed the potential distribution under the climate change scenario. They find that high risk areas for brown planthopper damage will increase from the current 7.5% to somewhere between 15% and 27%. Interestingly, all four climate models used show that low and mild suitability areas for the brown planthopper will have reduced infestation when the climate changes. But moderately and highly suitable areas will be even more prone to the infestation.

Read on from **page 1600**.

Seedless Jamun

Seedless jamun is rare. But it is not too difficult to make the seeded varieties yield seedless fruits, says a Research Communication in this issue.

Curious? Turn to **page 1619**.

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