

## In this issue

### Cleaning up Clinical Trials

Across the world, medicines approved by the Food and Drugs Administration of the USA get legal sanctity and are confidently prescribed by physicians. The rise in iatrogenic diseases and unearthing of scams in clinical trials have increased the clamour for more transparency, higher ethical standards and changes in regulations involved in the process of bringing medicines to market.

From the experimental infecting of people in Guatemala with syphilis to study the course of the disease in the late 1940s, we have come a long way. However, despite huge effort, ensuring that all trials are registered and their results reported in a timely, comprehensive and accurate manner has proven more difficult than one would have imagined. Moreover, badly designed trials and unethical recruitment of patients for trials continue. Meanwhile, even the apparently pro-patient move to have a 'right to try' an experimental drug is not as straightforward an issue as it may seem.

In a General Article on **page 1648** in this issue, Gayatri Saberwal, Institute of Bioinformatics and Applied Biotechnology, Bengaluru, examines the issues that plague the West and impact the rest.

### The Case of Missing Women

#### *Sex ratio of Indian scientists*

37% of PhDs awarded in India presently go to women. But women in the academies of science go down to less than 10%, informs Charu Malhotra, Uttarakhand State Council for Science and Technology in a Review Article in this issue. The review covers all the papers, on the subject of women and science in India, that have appeared in your favourite journal from its inception.

The first article on women in science appeared in *Current Science* only in 1990. Since then, the number of articles has been increasing every decade. The review examines the suggestions made by Indian scientists based on research and personal experiences from a

historical perspective to draw conclusions based on the discourse.

While reflecting on the evolution of the perspective of the Indian scientific community on this issue, the review brings out the sea change that has shifted the demography and raises hope and optimism. The review also has important pointers to improve the situation further. Read on from **page 1714**.

### Saving Brow-antlered Deer

#### *Hydrological modelling*

Loktak Lake, a Ramsar wetland, has floating vegetation. With increase in water levels, the vegetation floats up. In the lean season, it touches the ground and draws nutrition, only to float up again when it rains. These vegetative masses provide sustenance to the endemic and endangered species, brow-antlered deer, *Rucervus eldii*, during the lean season. The Government declared forty square kilometres of the area as Keibul Lamjao National Park; it is the only floating wildlife sanctuary in the world.

But then along comes a hydel project, providing enough water, even in the lean season. Great news for human beings, but bad for the deer, cut off from its feed. Kh. Eliza and team from the IIT Delhi examined the problem. They used MIKE SHE, a system capable of modelling precipitation, evapotranspiration, channel flow, overland flow, unsaturated and saturated flows as well as their interactions. They used the soil and water assessment tool, SWAT, which divides the basin into sub-basins and further into hydrological response units. The researchers hybridised SWAT with MIKE SHE to simulate the monthly water balance for the Loktak Lake for two different time periods: June 1999–May 2003 and 2015–2016.

The hybrid is now a comprehensive system to simulate discharge and can help in designing the management plan of the lake, say the researchers in a Research Communication on **page 1793** in this issue. It can help vary water levels such that it is suitable for Sangai

deer and prevent inundation of surrounding areas. Good news for farmers in nearby villages and conservationists. And a relief for the hydel power project managers.

### Asian Forum for Polar Sciences

#### *Special section*

The Asian Forum for Polar Sciences (AFoPS) is one and a half decades old with its current six members – China, Japan, The Republic of Korea, India, Malaysia and Thailand, representing national Polar research institutions. In this issue, we give you a special section on the progress by the Asian Forum for Polar Sciences – an update after the Special issues in December 2013 and December 2015.

The special section this time brings observations of neutral atmosphere and ionosphere in the polar region, the mechanism for strong wind events in parts of the Antarctica, a palaeolimnological record from a lake which shows that it was marine earlier and became isolated as a result of glacial isostatic uplift less than 5000 years ago.

Besides the responses of Arctic soil bacterial community to warming temperatures, the special section has a paper that documents the bacterial communities of King George and Deception Islands, Antarctica, another that looks into the genome sequences of two cold-adapted *Cryobacterium* spp. and yet another paper that provides us a draft genome sequence of a novel actinobacterium from the family *Intrasporangiaceae*.

The special section deals with the marine environment also. Marine heat flow measurements in the subsea permafrost degradation area, coupling between bacterioplankton and phytoplankton in water and the microbial eukaryotic diversity under the sea ice of the central Arctic Ocean in summer are also topics of discussion in the special section on **pages 1668–1713** in this issue.

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