

## In this issue

### Designing Digital Databases *Himalayan Floral Resources*

If digital communication technologies set the tone for the information explosion of the last century, digital databases will be the mainstay for the knowledge explosion expected for this century. Databases bring together vast amounts of information on a narrow area of interest. When such resources are shared, they tend to facilitate the creation of new knowledge by delineating interconnections between discrete datasets.

On **page 808** in this issue, a General Article describes the process adopted for the creation of a digital database of the floral resources of Himachal Pradesh. From designing, to linking the various tables, to making the data secure and the setting up of a website that allows visitors to search from various viewpoints and perspectives – the experience of creating the database is presented by scientists in the CSIR-Institute of Himalayan Bioresource Technology, Palampur.

The database now covers about 1500 plant species. But since the design is already available, enthusiasts can contribute to extend the database to cover more and, hopefully, in the future, cover the rest of the Himalayan region that is so rich in biodiversity hotspots. After all, crowd sourcing is the key to extending the reach of researchers. Researchers aspire to increase the depth of coverage too, since many of the species are entitled to their own individual databases. If an amoeba, like *Dicystelium*, merits a database, the Asteraceae family that boasts so many flowering plants can surely reserve an exclusive database of its own.

### Karnataka Cries for Respite *Chronic electricity crunch*

Thermal energy pollutes. Hydropower displaces people. Nuclear energy generates fear. But what people hate the most is power cuts and load shedding. So we are left with renewable energy sources such as wind and solar, to make up for energy shortage. But then, wind and sunlight are inconsistent. Seasonal and daily variations are huge.

And so are the demands for power. Unless we can store the energy derived from the sun and wind, we cannot meet the fluctuating demands. But that will turn out to be costly.

For states like Karnataka, electricity shortage is equivalent to holding back its potential for development. So scientists in the National Institute of Advanced Studies, Bengaluru, collaborated with the Power System Operation Corporation Limited, to find a solution. They studied the wind and solar energy variations over a year with month to month variations as well as daily variations. The growth in demand for power over the last few years was projected to 2022, the last year of the 13th Five Year Plan. And they worked out the need for solar and wind energy installations to meet future electricity demands.

On **page 796** in this issue, they present their calculations under different scenarios so that the target output of energy meets most of the projected demand with and without the need for storage facilities. The General Article gives insights that may reduce unnecessary expenditures on unplanned installations of renewable energy sources in Karnataka.

### Protecting Wild Herbivores *Protecting farmers' interests*

Protecting wild life comes at the cost of farmers' interests at times. Farmers start cutting down the agricultural inputs due to the insecurities caused by the threat of attack on crops by herbivores. Even protective measures, such as fencing, may fail to reduce the damage done by wild herbivores under certain conditions, say the scientists.

A Research Article in this issue explains why, using a theoretical model. While farmers optimize their agricultural activities using benefits minus costs, herbivores tend to use the cost to benefit ratio to optimize their activities. A lack of clarity about when to use ratio and when to use difference has led to quite a bit of confusion in the past, both in economics and ecology.

The theoretical model presented by Milind Watve and others at IISER

Pune and the Pondicherry University is generic and can easily be adapted to the specific situations existing in protected areas. The insights that are derived from the model, however, are quite specific and will be useful to reduce the conflicts between wild life and local people. A path breaking paper that wild life enthusiasts and ecologists cannot afford to miss. Turn to **page 861**.

### Impact Factor Revisited *Factoring in prestige and popularity*

Ever since the concept of impact factor of journals was formulated more than 50 years ago by Eugene Garfield, it has been used, misused, criticized and cursed by many. The attempts to remove the limitations of the index have also not succeeded so far. Google Page-Rank that uses a variation of impact factor has also come under criticism.

In a Research Communication on **page 876** in this issue, Gangan Prathap and others revisit the earliest formulation of the concept and the attempts to revise it, to point out the limitations and then propose a solution that overcomes the problems. They use insights from network theory to plug the loop holes in the existing formulations of impact factor. Both Web of Science and Google will benefit from this new formulation.

### Rumen Microbiome *Viruses gain visibility*

Microbiome research has taken a big leap in the recent years because of the tools that we now have to identify bacterial and fungal species. However, viruses have been left out in many such investigations.

Now, a Research Communication on **page 919** in this issue, presents the details of viruses found in the forestomach of a buffalo. The protocols used by scientists in the Anand Agricultural University may inspire other researchers to include viruses in the investigations on microbiomes.

K. P. Madhu  
Science Writing Consultant  
[kp.madhu2000@gmail.com](mailto:kp.madhu2000@gmail.com)