In this issue

Kerala Deluge 2018
Digital dividend in disasters

When disasters strike, usually one disregards minor enmities and squabbles to help local people manage and mitigate the problems. This indeed was the case in Kerala when large areas got flooded in August 2018. But today's communication technologies added another dimension to alleviate problems by eliciting help from afar to reach out to the near and dear in need.

Anamika Ajay from the National Institute of Advanced Studies unravels the complex sequence of events of the 2018 Kerala floods to understand how communication technologies aided management and mitigation efforts in a General Article in this issue. She analyses the role of different actors at local, district, state, national and international levels and divides the action on the ground into three distinct stages, which has the potential to form a model that will help synergise and synchronise activities when disaster strikes elsewhere.

From the lessons learned, she also calls for capacity building for better disaster preparedness and decentralisation of disaster management, as well as for the formation of response teams at the panchayat level. Technologies help only when people use them effectively. So one needs to even foresee power failure during disasters and have provision for power banks for technologies to work. Read on from **page 913**.

Applications Add-up or Multiply?
75 years of Microemulsion

Oil and water don't mix. Add an emulsifier and whisk them around. And, hey presto, you get an emulsion. People have been making mayonnaise with oil and eggs (which contain water and lecithin, an emulsifier) for at least more than 200 years. To progress from emulsion to microemulsion – inverse of a micelle – it took hundreds of years. But, once the properties of microemulsions were recognised 75 years ago, within decades a large number of applications popped up: solubilisation, cleaning, fuels, tertiary oil recovery, cosmetics, pharmaceutics, corrosion inhibitors, drug encapsulation and delivery, templates for nano material preparation, membrane filtration, detoxification...

In a Review Article on **page 898** in this issue, researchers from the Jadavpur University and the University of Calcutta pay tribute to the properties of this highly stable material form and to the strategies for preparing it based on its phase behaviour, its micro structure, and its multifarious applications.

Limonene and Lifespan
Experiment with elegans

Extreme stress can be killing, they say. Though not literally true, stress does reduce joy in life. And it may even reduce life span. So anti-oxidants are now marketed as stress busters and anti-aging agents.

But it is not easy to experiment for testing this notion. Thankfully there are model organisms such as *Caenorhabditis elegans* to check the veracity. Scientists from the CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow set out not only to test the hypothesis but also to find a solution. They took limonene as the stress buster. Even the smell of the rind of lemon and other citrus fruits breathes freshness into one's life. Limonene is the purified form of the molecule that gives that smell; it is a monocyclic terpene, a relatively simple molecule.

The experiment is not simple. You have to have worms of the same age – a synchronous population. And you have to test at different concentrations of limonene, making sure that it is not at a concentration that will work out to be toxic.

The scientists did more. They took different mutants of *C. elegans* to check where limonene might be acting and to understand the molecular mechanisms that can explain its action.

Read the results of their work on the anti-aging properties of limonene in a Research Article on **page 959** in this issue.

Wild Pig Woes
Ailing Agriculture in Almora

Forests cover more than 50% of the total area of the Almora district of Uttarakhand. Less than six and a half lakh people occupy the remaining area of a little more than 1500 square kilometres, mostly in scattered villages. The people eke out a living from cultivating whatever little cultivable land is available in the highly uneven terrain in this Himalayan region.

The forests adjoining the villages may house leopards, wild pigs, deer, fox, apes and monkeys. And just as humans foray into forests, they too wander into villages. The border between coexistence and conflict is a fuzzy line. While a large number of young people migrate from villages to towns and cities, wild animals have become more confident in raiding crops.

Researchers from the ICAR, New Delhi and the Gurukul Kangri Vishwavidyalaya, Haridwar set out to find the challenges that two sample villages in the area face. And they find that the biggest threat to agriculture in the region is wild pigs.

Villagers have been experimenting with changing their crops to respond to the conflict. But it appears that scientists need to step in to resolve the conflict by coming up with solutions. Read a Research Communication on this issue from **page 1015**.

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