

In this issue

Lion-tailed Macaques

In the rainforests of Nelliampathy and Valparai in the Western Ghats, there are no lions. The lion-tailed macaque is the king of the jungle, surveying his kingdom from the evergreen tree tops.

As fit for a king, a retinue of other animals follow in his wake. The Indian giant squirrel, the three-striped squirrel, the racket-tailed drongo, the barking deer and the sambar. These animals feed on the food dropped by his group.

He likes to keep a safe distance from the elephant herds and occasional leopards. Though he is king of the jungle, the little ones in his group are quite often carried away by the Crested-serpent eagle and the Mountain hawk-eagle. The barking deer, sambar and Indian giant squirrel are useful to him: they alert him about such impending dangers. But the racket-tailed drongos? They are no use. He tolerates them. And, at times, they need to be kept in their place.



The picture that scientists from Mysuru, Bengaluru and Coimbatore paint for us in a Research Communication in this issue, is enchanting. They spent nearly 1700 hours observing lion-tailed macaques in the fragmented patches of forests among the human dwellings of Valparai in the late 90s. And then added another 700 hours of observations in the forests of Nelliampathy. Just to study

their interactions with other species, especially other primates. Read on from **page 2129**.

Microfluidics

The physical factors governing fluid behaviour at microscale are not the same as those at macroscale: the flow has a low Reynolds number and so it is completely laminar. No chance of any turbulence. This allows different fluids to flow without chaotic mixing in a microchannel. The mixing is limited to the liquid-liquid interface. This allows for the predictable transport of molecules through the microchannels. Thus the inkjet printer of the eighties was born.

But microfluidics has other interesting properties. The large surface area to volume ratios of the microchannels allow macromolecules to quickly diffuse and adsorb to the channel surfaces. Surface tension, interfacial tension and capillary forces become predominant at the microscale. Thus the applications of microfluidics grew manifold. And today it is the basis of various technologies including those for genomics, transcriptomics, diagnostics and detection of pathogens. Its use in basic research on developmental biology, microbiology and cell biology has become significant. It has also become a tool for drug discovery.

Easy methods of fabrication of complex devices, very low consumption of reagents and possibilities of automation have helped make the lab on a chip concept a reality. A Review Article by scientists from the Indian Institute of Science and the M.S. Ramaiah Institute of Technology, Bengaluru gives us an overview of the developments in the field on **page 2021** in this issue.

Communicating Research

English as second language

For most researchers in the world, English is second language. Yet they have to learn to communicate their research in English if it has to be noticed by the international community.

Academic writing in English has evolved and now there are deep-rooted traditions that cannot easily be broken. So besides learning English, PhD students have to master accepted and expected styles and norms.

Mastery over the subject matter itself is yet another challenge that a young researcher has to encounter.

Researchers in the Babeş-Bolyai University, Romania, tackled the problem by developing a questionnaire to elicit the needs and problems of PhD scholars. And then followed it up with the design of a course with the specific objective of overcoming them.

The course consists of an intervention programme for academic writing in English, integrating formal writing within the discipline. It also tackles writing for a non-specialist readership. There were modules on informal writing skills, and writing and publishing for career development.

Hundreds of doctoral candidates in natural sciences, humanities and socio-economic studies took this course. The data generated over three consecutive years is presented on **page 1997** in this issue. The case study presented by the researchers may have potential for adoption, adaptation or replication in other universities in most other parts of the world.

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