In this issue

Equatorial waves over Indian zone

In the dynamics of the equatorial middle atmosphere, equatorial waves, namely, Kelvin and Rossby Gravity (RG) waves play an important role. Starting with the Indian Middle Atmosphere Programme (IMAP) in the 1980s, a series of well-coordinated scientific campaigns have been conducted to delineate the characteristics of these waves in the Indian zone. With the establishment of MST radar and Rayleigh Lidar at Gadanki in the eighties, it has been possible in the later campaigns, to estimate the vertical flux of the horizontal momentum of the equatorial waves, a key parameter of these waves. M. N. Sasi *et al.* (**page 475**) review and discuss the main results of the campaigns in the light of existing literature on the equatorial waves. It emerges from this that the equatorial waves exhibit strong longitudinal differences including variation of seasonal dependence on longitude.

Physical map of drought stress responsive genes of rice

Drought tolerance in plants is a complex trait controlled by many dispersed genes across genome. Particularly, genetics of drought stress response in rice is under an intense focus in view of its importance as the most important food crop and also a model crop plant. Most importantly, the availability of extensive DNA sequence information and high density molecular maps offers unique advantage in deciphering the complex molecular genetic mechanisms of drought stress response in rice. Markandeya *et al.* (**page 496**) describe the genomic approach to identify and physically map putative candidate genes of drought stress response in rice. They identified a large number of genes using their extensive EST data from drought-stressed seedlings of an *indica* rice, and a unigene set of 2094 transcripts has been mapped onto the rice physical maps. Transcriptome mapping with functional annotations allowed them to dissect a few target QTLs for drought tolerance in rice.

Whither earthquakes?

In addition to intense seismicity along the plate boundaries e.g. Himalaya, Andaman–Sumatra arc, the Indian subcontinent also experiences significant intraplate (or mid-continental) earthquakes. Occurrence of stable continental region (SCR) earthquakes is intriguing and deserves detailed analysis, due to tremendous losses as evidenced at Bhuj, Koyna and Killari. K. Veeraswamy and U. Raval (**page 522**) propose a tectonic framework, to constrain the spatial locations of the midcontinental seismicity. The subcontinent consists of Archaean cratonic nuclei sutured (or amalgamated) along palaeo-orogenic belts, termed tectonic boundaries (TBs) or mobile belts (MBs). Clearly these sutures represent intrinsically weak/vulnerable zones and may get remobilized due to thermal (say, a mantle plume) or tectonic (compressional/extensional) stresses leading the associated faults to criticality where addition of a little stress (or strain) buildup may nucleate an earthquake. This is supported by the observations as (a) 80–85% earthquakes occur along MBs, and (b) most major intra-plate earthquakes (M ~ 5.5–7.8) appear to lie in the Deccan trap covered region which contains corridors like Kutch, Narmada–Tapi and Cambay graben. The Reunion plume activity may have reactivated these weak corridors. Existing geophysical results indicate that even the Archaean TBs, e.g. shear zones of Dharwar craton appear to have been remobilized. The Koyna and Killari SCR earthquakes seem to fall close to such TBs, which are partly hidden under the Deccan trap cover. Detailed characterization of along-the-strike heterogeneity of these MBs (or TBs) is emphasized for future hazard assessment.

Detection of submerged reef banks

P. Chauhan and S. Nayak (**page 557**) demonstrate the usefulness of ocean-colour satellite data from IRS-P4 satellite for the detection of submerged coral reefs in the Lakshadweep Sea. The region around Lakshadweep Islands is characterized by shallow submerged reef banks. The authors report the use of IRS-P4 OCM satellite data in deciphering new information about the extent of submerged reef banks north of Lakshadweep Islands. The short wavelength OCM spectral bands have been useful in detecting submerged reef banks as deep as 50–60 m below the ocean surface. This information is useful for updating navigational charts and to minimize the ecological losses for the reefs of this region.

The Indian rock lizard

India is known for its vast and varied faunal diversity that still needs systematic documentation. Studies on the behavioural ecology of different species in wild and status surveys provide a means for evolving management and conservation strategies for any desired species. Unfortunately, the studies on the behaviour, population density and activity patterns of Indian lizards are scanty. Among the Indian Agamids, the genus *Psammophilus* is represented by two species, the *Psammophilus dorsalis* and *Psammophilus blanfordanus*. R. S. Raddar *et al.* (**page 560**) describe population density, sex ratio, microhabitat use and activity pattern in

the Indian rock lizard, *P. dorsalis* with reference to sex and season. The baseline data generated on the demography of the rock lizards will allow future monitoring and evaluation of their population size. They report a skewed sex ratio that is female-biased, a marked sexual dimorphism (size and coloration) and interesting differences in the perch selection among the sexes. They also attempt to explain why males perch very high while the females generally perch on small stones and on the ground. The study opens avenues for testing new hypotheses fundamental to social behaviour, evolution of sex-specific behavioural patterns and better understanding of behavioural ecology of lizards. Besides generating much needed information, the study demonstrates how important contribution can be made without much sophisticated technology or funds.