

## In this issue

### Excavation and application of soil micromorphology

Badhreenath *et al.* (page 1071) attempt to understand weather changes on coastal sites due to vagaries of nature using a multidisciplinary approach.

Application of micromorphology technique (thin-section studies under the optical polarized microscope) to soils, sediment layers, soils from archaeological sites can be used to infer and arrange the hierarchical processes of soil formation. It is a relative geochronological tool for supplementing the existing knowledge on both immature and mature fossil soil horizons, sediment layers



that can be identified and distinguished from man-made deposits such as occupation layers, ditch and post-hole infillings, and microclimate to disturbances associated. In an historical site of Saluvankuppam (Pallava temple complex) near Mamallapuram, sedimentary layers, potsherds, laterite and ancient bricks were buried due to coastal aeolian processes. This site was exposed partially because of the 2004 tsunami and further excavations were carried out by the Archaeological Survey of India, Chennai Circle, since 2005 to expose the temple complex.

Excavation data and application of  $^{14}\text{C}$  date, micromorphology of sediment layers, potsherds, well rims, laterite and ancient bricks indicate that the temple complex was built in phases and used continuously since

the early Pallava period. The bricks have been cemented using lime by pulverizing shells collected from the nearby inlet of sea near Muttukadu. The pots and the ancient bricks were burnt at high temperature indicated by the diffused quartz grains. The study indicates that the materials used in the temple construction are from the nearby sources.

### Macaques in the Mountain

The Highway Mountains in the southern Western Ghats holds a wide variety of forested habitats that abodes rich mammalian species. All of the endangered mammalian species in the peninsular India were recorded from this area. Very less is known about the status of the primate species except decades old occurrence information. The lack of baseline data makes this area ignorable for conservation. H. N. Kumara *et al.* (page 1063) address this problem by studying the primate species with a focus on the endemic and endangered lion-tailed macaque (LTM). The evergreen and other biotopes of the Highway Mountains were surveyed with volunteers in a coordinated effort. Primate troops identified in the synchronous surveys were later followed for further observations. Five primate species including Nilgiri langur, Hanuman langur, bonnet macaque, LTM and slender loris were recorded during the surveys. A total number of 15 LTM troops were recorded with a mean troop size of 33.25. The presence of higher number of LTM indicates the significance of this habitat. The LTM population in the Highway Mountains seems to be viable and is the third largest population in Tamil Nadu. Most of the macaque troops are recorded from the fringes of the coffee and cardamom plantations. The newly declared 'Megamalai Wildlife Sanctuary' completely excludes the evergreen biotopes of Highway Mountains which is the prime LTM habitat. The study calls for the inclusion of these areas into the sanctuary for the conservation of LTM and discusses the local management issues.

This paper also stresses the need for similar studies in the adjacent forests of Periyar–Srivilliputhur–Varusanad landscape for the better understanding and management of the primates and evergreen habitats.

### Epidemiology of the 2009 swine flu outbreak

One need not refresh the memory to recollect the swine flu outbreak of 2009. People wearing face masks on streets, media reportage of the pandemic and health checks at international airports are all etched in the mind. In this issue, Jesan *et al.* (page 1051) report the epidemiological dynamics of influenza A (H1N1)v outbreak in India. The first confirmed case, as is known, was diagnosed in Hyderabad on 16 May 2009, of a passenger traveling from the US. Later, the virus spread to the population residing in the country, among those not even traveling abroad. In technical terms, the single primary infection led to several secondary infections. The average number of secondary infections from the primary is termed as reproduction rate ( $R$ ).

As this new influenza strain is the pre-dominant virus circulating worldwide and strategies against its spread need to be devised, Jesan *et al.* consider it relevant to study the transmissibility of the disease. A variation of the reproduction rate,  $R_0$ , the basic reproduction number, which varies from country-to-country, has been determined for India from the time-series data calculated for the onset of pandemic, spanning a period of June–September 2009.

From the additional data analysed for places where the endemic occurred, it was found that Pune had a large number of infections, possibly because of the cool climate and crowding at the testing centres. This study concludes that the basic reproduction number for the pandemic in India is less than that reported in other countries. It also indicates that seasonal and country-wise variations need to be studied for devising strategies to control the spread of disease.