In this issue

Bird fossils from the Eocene of India

Very few pre-Oligocene fossil birds have been discovered in Asia, and most of these come from China and the area of the former Soviet Union. In this issue, Mayr et al. describe (page 1266) the oldest fossil avian remains of the Indian subcontinental plate. The specimens come from the early Eocene of the Vastan Lignite Mine in Gujarat, a fossil locality which has also yielded abundant remains of mammals and other vertebrates. The avian remains are assigned to the new taxon *Vastanavis eo-caena*, gen. et sp. nov. Although a reliable phylogenetic assignment of this species is not possible without additional bones, the fossils are of potential biogeographic significance because similar taxa are unknown from the well-studied Palaeogene avifaunas of Europe and North America.

Drug discovery from plants

Many traditional medicine systems throughout the world utilize plants as significant sources of medicines for thousands of years and plants continue to provide mankind with new remedies. In India, Ayurveda also used several medicinal plants for the preparation of medicines. The use of plants as medicines has involved the isolation of active compounds, beginning with the isolation of morphine from opium in the early 19th century and many more have been isolated thereafter during the process of drug discovery from plants. The potential for finding new chemical entities from plants is enormous as only about 1% of 125,000 tropical plant species have been evaluated for their pharmaceutical potential. Drug discovery from plants is a multi-dimensional process and requires efforts from various interdisciplinary fields like chemistry, pharmacology, molecular biology and botany. The rich knowledge of traditional systems of medicine coupled with two of the 18 world’s hotspots of plant biodiversity in India, offers unique opportunity to scientists to undertake the plant-based drug discovery programmes. In India there are about 17,500 species of higher plants and 8000 of these are medicinal plant species. Jachak and Saklani discuss (page 1251) the process of drug discovery from plants along with the challenges and opportunities from Indian perspective and the Indian initiatives on plant bioprospecting.

Tracing straying routes of rhinoceroses

The conservation of *Rhinoceros unicornis* in Assam has been regarded as the epitome of wildlife conservation initiative with the fact that from a dozen of rhinoceroses estimated to be available in Kaziranga area at the beginning of the 19th century, the rhino population in Assam has gone to 2006 in the year 2006 for intense conservation measures adopted so far. The Pabitora Wildlife Sanctuary in Morigaon district of central Assam has the proud legacy of harbouring highest density of rhino in the world. The sanctuary is surrounded by villages and as such there is little scope to expand the area of the sanctuary to provide more habitats to the increasing number of rhinos. Currently, Pabitora has 81 rhino and due to constant grazing pressure leading to shortage of palatable grasses, rhinos often stray out of the sanctuary for feeding outside the protected area wherein they are more vulnerable to be killed by poachers for their horn. Talukdar et al. attempt (page 1303) mapping of stray out rhinos using GPS and GIS tools to assist the conservation authorities to take appropriate measures to protect the stray out rhinos from being poached by organized poachers.

Rainwater harvesting technology

Northeast region of India receives the highest rainfall. But, the water availability is less during dry season (November to March) because little attention has been paid for proper harvesting measures, contributing only 0.88 Mha m out of 42.0 Mha m water available for crop cultivation. Watershed approach for rainwater harvesting for a valley and flat land has come up in a big way. But, this approach is not useful for hilltop and terrace condition of this region. A simple and low-cost rainwater harvesting structure has been developed using mostly locally available raw materials for storing rainwater in upper terrace condition of this region. The farmers are convinced about its benefit, particularly because of its low preparation cost and negligible maintenance cost. This method of rainwater harvesting is cost effective and useful for homestead farming. See page 1258.