

In this issue

Status of *Embelia ribes*: a red listed medicinal plant species from Western Ghats

Embelia ribes Burm f. (family Myrsinaceae), commonly known as 'Vidanga', is one of the most important medicinal plant species used in 'Ayurveda', an Indian traditional system of medicine. The species is threatened due to immature and over harvest of its fruits. As a result, the population has declined by 50%. The



dioecious nature of the species further aggravated the problem. Mhaskar *et al.* (page 547) study the distribution of this species from northern Western Ghats of Maharashtra. Issues regarding misidentification, adulteration and the status of its trade with respect to its population decline have been critically discussed.

Nectar dynamics and pollination in Lamiaceae

Nectar is the most common form of floral reward furnished by animal-pollinated plants to their mutualistic partners. Pollination rewards differ in their composition, amount and accessibility, and are highly associated with specific functional groups of pollinations. Considerable correlative evidences link the broad variation in energetic and nutritional content and chemical composition of angiosperm nectars to differences in the identity of pollinators and their energetic and nutritional needs. The

most common sugars in nectar are the disaccharides, sucrose and the hexose monosaccharides, glucose and fructose. Data on the chemical composition of nectar may give significant clues to ascertain the principal pollinator groups. Kulloli *et al.* (page 509) studied the nectar dynamics and pollination studies in Lamiaceae of three species, viz. *Leonotis nepetifolia* (L.) R. Br., *Leucas aspera* (Willd.) Link and *Orthosiphon thymiflorus* (Roth) Sleesen in their natural habitat. Observations were made on a day-to-day basis on flowering phenology. The nectar sugar concentration was measured using handheld sugar refractometer. Standing-crop nectar volume measurements were taken primarily from unbagged flowers in the field. Pollinators and rewards collected by them were observed by close observation in day period and night pollinators were observed with the aid of a portable night-vision device. Nectar sugar was assessed using *n*-butanol, acetic acid and water (4:5:1) as solvent. The authors propose that,



there is wide array of floral foragers comprising honey bees, butterflies, flies, ants, birds and hawk moths. The nectar is dominated by sucrose-glucose and fructose in all species. Insects accounted for a majority of the visits (96%). Their nectar shows marked temporal fluctuations in volume and concentration of total sugars. These changes are interrupted in terms of removal by visitors and evaporation or condensation. Foraging behaviour of most of the insects and birds indicated that they are genuine pollen-transferring agents. However, infrequent visits by butter-

flies and sunbirds show that they use these plants only as a transient source of food. Honey bees accounted for ~66% visits in all three species and thus could be the major pollinator of these species.

Geomorphic evidence of glaciations around Mount Kailash

One of the direct manifestations of glacier advancement is the deposition of moraines (terminal and lateral). Their distribution in the valley determines the past glacial extent and can be interpreted in terms of past precipitation and temperature changes. Juyal *et al.* (page 535) have used the moraine stratigraphy preserved in the Inner Kora (inner circumambulation) of Mount Kailash region to reconstruct the history of valley glaciations and their climatic implications. The study identifies three distinct events of glaciations with decreasing magnitude named from oldest to youngest as KS-I, KS-II and KS-III. In addition to this, push moraines and glacially polished bed rock in the vicinity of Mount Kailash have been identified. The study assigned the timing of individual glacial stages by comparing the equilibrium line altitude depression estimated based on the highest elevation of lateral moraines and comparing them with the climatically identical and geographically proximal Nyalam valley (southwest Tibet). The timing of KS-I glaciation is suggested to pre date the Last Glacial Maximum (LGM), KS-II is assigned the LGM age, whereas the KS-III seems to occur during the post LGM (Holocene?). The exposed glaciated bed rock and the push moraines are the geomorphic expression of recent or sub recent increase in the temperature after the Little Ice Age (LIA). A decrease in glacier ice volume after KS-III glaciation is attributed to the decrease in monsoon and an increase in the summer temperature after LIA. Glaciers in southern Kailash region are on receding trend which probably would have begun around the beginning of the nineteenth century.