range of characters falls within the range of variation in that particular genus[3].

It has also been noticed that many a time due care has not been taken while coining species epithets for these fossils; for example, *Amoora palaeowallichii* (resembles extant *Amoora wallichii*, Meliaceae), *Hydnocarpus palaeokurzii* (resembles extant *H. kurzii*, Flacourtiaceae), *Macarangaephyllum palaeomonadrum* (modern compared taxon *Macaranga monadra*, Euphorbiaceae), *Malottophyllum palaeomiquelianum* (compared with extant *Malottus miquelianum*, Euphorbiaceae), *Milletia miobrandisiana* (resembles extant *M. brandisiana*, Fabaceae), *Randia miowallichii* (resembles extant *R. wallichii*, Rubiaceae), *Swintonia palaeoschwenckii* (resembles extant *S. schwenckii*, Anacardiaceae), etc. The extant species obviously are named in honour of certain persons; for example, Wallich, Kurz, Miquel, Brandis and Schwenck, but can one derive the names for fossil morphospecies, which apparently resemble extant species, by prefixing personal name-based species epithets of the latter with 'palaeo-' or 'mio-'? Obviously not! One does not expect the existence of Palaeocene (65.5 ± 0.3–55.8 ± 0.2 m.y. BP) or Miocene (23.03–5.33 m.y. BP) clones or namesakes of these dignitaries. Further, the prefix 'palaeo' is derived from Greek παλαιός (*palaios*), which means old(er), and the prefix 'mio' is derived from Greek μείων (*meioon*), which means less. So combining these Greek epithets with personal names makes little sense. Such species epithets, and many others like, *palaeohirsutum* (old hairy?), *palaeoreticulatum*, *palaeoalba* (= old white?) or *preaureum* (= before golden?) for fossil morphospecies could have been better avoided, though not specifically forbidden under provisions of the International Code of Botanical Nomenclature[4] [Article 23.2. 'The epithet in the name of a species may be taken from any source whatsoever, and may even be composed arbitrarily', but Recommendation 23A.1 states 'Names of persons and also of countries and localities used in specific epithets should take the form of nouns in the genitive (*clusii*, *porsildiorum*, *saharae*) or of adjectives (*clusianus*, *dahuricus*)'].

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Non-persistent mudbanks off Kerala coast

The mudbanks found along Kerala coast can be classified into persistent and non-persistent types based on their activity and sustenance. The persistent mudbanks occurring off Alleppey coast are active during monsoon and are sustained throughout the year with decreasing intensity. These are formed due to the presence of zaherite in the muddy sediments present in shallow waters[1], together with other physical conditions such as bathymetry, waves and sediments which favour their formation. On the contrary, mudbanks formed at several places such as Narakkal, Chetuwa and Quilandi during the monsoon period disappear after a short span of time. These are called non-persistent mudbanks, which are characterized by their non-periodicity and inconsistency. Their recurrence in the same area sometimes takes several years.

In order to understand the nature of formation of non-persistent mudbanks, six marine surface-sediment samples were collected during pre-monsoon, five south off Narakkal and one off Chetuwa. XRD results of all the samples have shown montmorillonite as the major clay mineral with minor amount of kaolinite, gibbsite and quartz. The striking feature of this study is the omnipresence of gibbsite both in persistent and non-persistent mudbanks[1].

Like zaherite, gibbsite ($Al(OH)_3$) is also bipolar with a positive aluminium end and a negative hydroxyl end. When gibbsite is present in the sediments, the negatively charged clay minerals get attracted towards its positive end, than towards the less active univalent sodium and potassium ions or the bivalent magnesium or calcium ions available in sea water. This clustering of clay minerals around gibbsite leads to their flocculation, resulting in quick settling. The individual clusters, due to its irregular shape, cannot come closer and the sediments remain loosely packed. This enables them to carry a large quantity of pore water. Hence, the volume of mudbank sediments is much higher than that of the adjoining sediments. This increase in volume is responsible for the mudbank area to stand out as an elevated wedge-shaped platform above the seafloor[2].

While logging a vibro-core sample collected south off Narakkal, slurry-type sediments embedded between moderately compact silty-clay were observed between core depths 150–158 cm and 163–170 cm. These zones have water content of 260% and 210% respectively, which is a rare feature at such depths. These samples were studied using XRD to identify, the various mineral phases present. The results have shown the minor presence of both gibbsite and gypsum in the zone between 150 and 158 cm, and gibbsite between 163 and 170 cm, other than montmorillonite, kaolinite and quartz. In order to understand the role of gibbsite and gypsum in the formation of mudbanks, experiments were conducted using settling jars, with two sets of clay sediments of equal weight collected from a non-mudbank area. About 5% gibbsite–gypsum powder was added to one set of the above sediments. The results show that the volume of the samples with gibbsite–gypsum mixture was about 25% more than the samples without these two minerals.

The present study suggests that non-persistent mudbanks are formed due to the presence of gibbsite which is further facilitated by the presence of gypsum, whereas persistent mudbanks are formed

due to the presence of more active zaherite along with gibbsite. It also indicates that mudbanks can be created artificially by introducing about 3–5% of zaherite–gibbsite–gypsum mixture into the nearshore clayey sediments, where waves exert maximum pressure on the bottom sediments. If the coasts are protected by creating mudbanks artificially, the cost for coastal protection and its subsequent maintenance could be reduced. Moreover, this will not affect the aesthetic view of the beaches and will help to increase fish productivity.

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Mangroves of Maharashtra: a fast disappearing asset

Mangroves are typical group of plants which are adopted for survival in sheltered brackish-water habitats along coasts of tropical and sub-tropical regions. They are known to be the primary producers, shoreline protectors, nursery grounds and habitat for a variety of animals, bridging components and unique biological resources. They provide erosion control and shoreline stabilization. The recent tsunami has proved the importance of mangroves as shoreline protectors. In today's biotechnological research they are used as a source of salt-tolerant genes.

Maharashtra is one of the important coastal state's of India with unique mangrove diversity spread all along the 720 km coastline, distributed in about 55 estuaries in five districts. Studies have revealed that there are about 24 typical mangroves along with ten halophytes, 12 borderline species and 15 associates in Ratnagiri and Sindhudurg districts alone[1]. The rest of the districts show more or less similar composition. All these species play an important role in maintaining this fragile ecosystem.

Figure 1. Typical mangrove *Rhizophora mucronata* with prop roots.

Besides this mangrove diversity of Maharashtra, field studies[1] have revealed that the mangroves of this region are being threatened to a great extent. Several species have been recorded as 'Endangered' (EN) and 'Critically Endangered' (CR). Loss of habitat, human interference, pollution, Kharland bunding, aquaculture, grazing, commercial use, etc. are some of the threats affecting the mangrove forests. Due to these factors several thousand hectares of mangrove have been cleared. NRSA has recorded a decline of 7000 ha of mangrove from India during the period 1975–81.

Government initiatives like Kharland bunding are also responsible for the elimination of many sensitive species. It is also interesting to note that since the last many years though several projects, seminars, workshops and conferences devoted to mangroves are being organized in the state, the practical outcome regarding their conservation is in question. The major problem is the lack of participation of local people and awareness about mangroves. The policy makers hardly interact with the local people while deciding the conservation programmes.

The following conservation strategies are suggested: germplasm preservation, sustainable use, protection and preservation of value-added species, land-use pattern, etc.

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Background radiation: no evidence of ill effects

Saroja and Roy[1] have made the following statements: 'Ionizing radiations are a grave threat around the high background regions of the globe. Selected pockets of Brazil, China and India are reportedly under the grip of high background radiation. Presence of monazite sand along the beaches of these regions, among other factors, has contributed to these dreaded radiations'. '. . . The incomparably high values are certainly a major threat, affecting the region populated by the fishermen community'. The authors do not indicate why high background radiation is a 'grave threat', and why they qualify radiations as 'dreaded'.

They have measured uranium, and thorium from ten sampling stations in Kanyakumari District, Tamil Nadu and obtained relatively high values. They refer to other similar studies, but do not refer to any of the health studies carried out in the high background radiation areas (HBRAs).