

Arabian Sea tephra

The research communication by Jayaprakash *et al.*¹ is of interest. However, it contains no additional information on Arabian Sea tephra than that published by us several years ago in the *Journal of Geological Society of India*². Our area of study covered the Arabian Sea in the Exclusive Economic Zone (EEZ) of India between 8°N and 14°N, from where a large number of sediment cores were examined. However, the present study is restricted to seven gravity cores collected along three transects between 13°10'N and 13°50'N off Mangalore within the area we had already studied. We had described in detail the nature and mode of occurrence of tephra in the Arabian Sea sediments and their mineralogy, morphology and grain-specific chemistry of glass shards, their correlation with Youngest Toba Tuff (YTT) based on chemistry and morphology of glass shards. We had also discussed the dispersal of Toba ash based on its distribution known till then.

The present report does not cite our publication on Arabian Sea tephra, although almost all other references on Toba tephra in the Bay of Bengal, Arabian Sea, Indian Ocean and the Indian subcontinent starting from 1979 (ref. 3) to 2002 (refs 4 and 5) are cited. We believe that this is not an inadvertent omission, but a deliberate effort to suppress published information, a trend often seen among younger scientists of not recognizing earlier works. Correlation of Western Lakshadweep Tephra (WLT) with YTT has mainly been made on the basis of major element chemistry of only two glass-shard samples. The methodology followed in analysis may not reflect the true composition of the glass shards. Space precludes elaborating many factual and interpretational errors in the communication. Science progresses on the foundations laid by earlier work. This recognition contributes to the advancement of science.

1. Jayaprakash, C., Jayakumar, R., Dinesh, A. C., Maran, N. and Shareef, N. M., *Curr. Sci.*, 2009, **97**, 1670–1674.
2. Nambiar, A. R. and Sukumaran, P. V., *J. Geol. Soc. India*, 2002, **59**, 79–88.
3. Ninkovich, D., Shackleton, N. J., Abdel-Monem, A. A., Obradovich, J. D. and Izett, G. K., *Nature*, **1978**, 276, 574–577.
4. Pattan, J. N., Pearce, N. J. G., Banakar, V. K. and Parthiban, G., *Curr. Sci.*, 2002, **83**, 889–893.
5. Von Rad, U., Burgath, K. P., Pervaz, M. and Schulz, H., *Geol. Soc. London, Spec. Publ.*, 2002, **195**, 445–461.

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Nectar robbery in mangroves

Nagarajan *et al.*¹ report nectar robbery in two species of *Bruguiera* by *Apis dorsata*, *Nomia* and ants. I feel that the authors have not shown categorically that bees rob the nectar without effecting pollination on the basis of the following reasons:

(1) The flowers of both the species of *Bruguiera* remain fresh for 15–20 days. Even if bees are incapable of anther tripping, birds are likely to visit these flowers during their long lifespan and bring about explosive release of pollen. If the bees visit the flowers after pollen release, they can still bring about pollination while foraging the nectar. The figures indicate that the body of the bee does come in contact with the stigma.

(2) Presence or absence of pollen sac is not an indicator of pollination ability of bees. Many bees which do not collect pollen can still bring about pollination and those containing pollen sacs may not be pollinators. For example, in *Amomum subulatum*², *Apis cerana* visits flowers regularly and collects pollen to form conspicuous pollen baskets; but still it is a pollen robber and not a pollinator. In fact, it appears that in figure 2, a lump of pollen seems to have been deposited on the hind femur of *Nomia* between the junction of thorax and abdomen. Further, *Nomia* is a short-tongued bee and is unlikely to have access to the nectar of *Bruguiera gym-norrhiza*.

In summary, the evidences presented indicate that bees act as nectar robbers and not as pollinators need to be studied more critically.

1. Nagarajan, *et al.*, *Curr. Sci.*, 2010, **98**, 603–604.
2. Sinu, P. A. and Shivanna, K. R., *Curr. Sci.*, 2007, **93**, 548–552.

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