identity and no need to search for type material… For many species described in the eighteenth and early nineteenth century, no type material was preserved. Nevertheless, even some of those for which the name was based on an illustration alone, or an illustration plus an inadequate written description, may be identifiable from that original description…Anyone working on a species that resembles one in a questionable illustration or an unclear old description would do better to describe the species as new, making a note of the early name as a possibility. Should the original specimens someday be discovered, restudy might result in your name becoming a junior synonym, but at least the history of your name and decision would be clear.'

Going by Winston[6], there is little scope for the drastic step that Dinesh *et al.*[1] have taken. First, Krishnamurthy *et al.*[3] have provided good quality photographs to support their description. The common English name and a photograph and illustrations of the species have also been provided by me[2], with the following remarks: 'This species was first collected in 1990 from a private estate in Dakshina Kannada. The two adults obtained were wrongly identified as *N. major* and *N. humayuni*. It was only in the year 2001 that the species was described as a distinct species. This species apparently also occurs in northern Kerala and the northwestern hills of Tamil Nadu'. To invalidate the species due to lack of adequate supporting material[1] is therefore far from what the standard taxonomic procedures have recommended[6].

Second, there is evidence that the species is not endemic to Karnataka[7] and as such, to name it after the State is unwarranted. Third, Dinesh *et al.*[1] have accused the reviewer of Krishnamurthy *et al.*[3] saying, 'At the same time, the reviewers of the paper in the journal, as qualified taxonomists of amphibians, are also equally responsible for overlooking the error'. I do not know who reviewed the manuscript submitted by Krishnamurthy *et al.*[3]. But I do know that it was forwarded to *Current Science* by me and it was not published by oversight. It is also not clear as to what Dinesh *et al.*[1] mean by 'qualified taxonomists'. Finally, what is most shameful about the communication in focus[1] is that two of the authors had also co-authored the earlier paper[3]. It is unfortunate that Manjunatha Reddy and Gururaja are caught in a state of self-contradiction, unable to vouch for the species[3] that they had collected and described in 2001. Obviously, both have not had the necessary 'qualification' to understand and apply the standard taxonomic procedures while dealing with new descriptions. The fact that the senior authors of the publication under focus[1] are from the Zoological Survey of India, makes it appear all the more ironical unless, of course, the entire purpose is to vandalise an earlier taxonomic contribution. Thus in light of the above discussion and for all practical purposes, it remains that *N. hussaini* is the valid scientific name of the giant wrinkled frog. And instead of more appropriately redescribing a species based on a neotype, Dinesh *et al.*[1] have vainly created a junior synonym in *N. karnatakaensis*.

Serious efforts to conserve the endemic amphibians of the Western Ghats are being slowed down as many a young biologist is driven by a desire to collect (kill) and describe species. In this context, I wish to draw attention to a publication of mine[8] that Dinesh *et al.*[1] have cited. While it is critical that the correct identity of a species be established in conservation planning, 'recycling' of species names comes in the way as a treadmill. If the giant wrinkled frog can keep amphibian biologists on the treadmill for 17 years, it is hard to predict how long it will take before the 'treadmill syndrome' ends. The sooner it ends, the better will it be for the continued survival of more than a 100 species of precariously surviving amphibians in the Western Ghats.

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3. Krishnamurthy, S. V., Manjunatha Reddy, A. H. and Gururaja, K. V., *Curr. Sci.*, 2001, **80**, 887–891.
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No reply was received from Dinesh et al.

—Editors

Formation of mini warm pool in the Arabian Sea

Deepa *et al.*[1] examine the plausible reasons for the formation of onset vortex in the presence of Arabian Sea mini warm pool (MWP) based on data for the period 2000–05. Deepa *et al.*[1] have concluded that the MWP was absent during 2000 and 2004, and all the descriptions were based on this assumption. Definitely, the statements ('It can be seen from Figure 2…', p. 796, para 4, line 1; 'MWP is absent in 2000 and 2004…', p. 798, para 3, last sentence; 'MWP was absent…', p. 798, para 7, last but one sentence; 'In the present study…', p. 799, para 3, first sentence; 'Absence of MWP…', p. 799, para 5, first sentence; 'Examination of weekly…', p. 800, para 2, first sentence) convey a message that the MWPs were not even formed in the Arabian Sea and were completely absent in those two years. In fact, MWPs (sea surface temperature (SST) > 30.5°C) were present in the southern Arabian Sea during both the years (i.e. during 2000 and 2004). However, they dissipated at an early date. In May 2000, an exclusive survey was made on-board *INS Sagardhwani* to study the

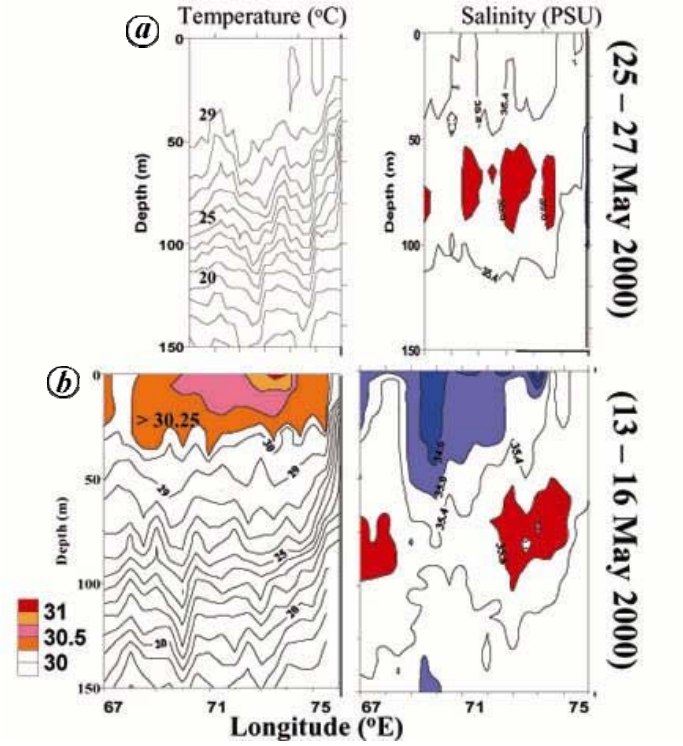

Figure 1. Temperature and salinity sections along 9°N (***a***) before and (***b***) after dissipation of the mini warm pool (MWP). The core of the MWP can be seen at 74°E near the surface.

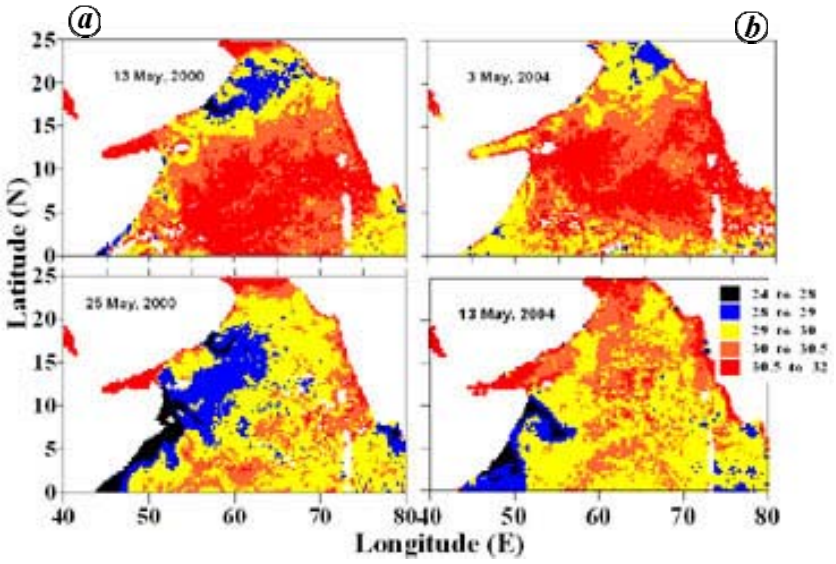

Figure 2. TMI SST (°C) on (***a***) 13 and 25 May 2000, and (***b***) 3 and 13 May 2004. Red patches are the areas of MWPs, which are clearly seen in the southern Arabian Sea on 13 May 2000 and 3 May 2004.

characteristics of the MWP (Figure 1 *a*; Sanilkumar and Kumar[2]) along two transects (i.e. along 9°N and 10.5°N) extending from 76°E to 67°E. In 2000, the MWP was present up to 15 May and moreover, the core of the MWP showed SST more than 31.2°C. Indications of an early dissipation of this MWP due to the commencement of strong winds, overcast sky and occasional rains were evident during this survey. Therefore, the survey was repeated during 23–27 May 2000 along the same transects and complete disappearance (Figure 1 *b*) of this MWP was found[3].

Utilizing the data on SST measured by the Tropical Rainfall Measuring Mission (TRMM) Microwave Imager (TMI) at 0.25° × 0.25° grids, two typical cases of each of the MWPs during May 2000 (Figure 2 *a*) and May 2004 (Figure 2 *b*) are presented to show their existence (SST > 30.5°C) and disappearance. In 2000, the MWP was found well developed on 13 May, but was absent on 25 May. However, in 2004, the MWP disappeared on 13 May, but the same was clear on 3 May. Therefore, conclusion of the absence of MWP by Deepa *et al.*[1] is wrong. Similarly, the sentence, 'It can be seen from Figure 2 *a* that in 2000, MWP has not formed one week prior to MOK' (p. 796, para 4, first sentence) implies that the MWP forms one week prior to MOK. This is a wrong concept as the growth of MWP is a continuous process, which begins in December itself and takes a few months to develop into a mature system[4].

1. Deepa, R. *et al.*, *Curr. Sci.*, 2007, **92**, 794–800.
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3. Sanilkumar, K. V., Kumar, P. V. H. and Prasada Rao, C. V. K., In International Workshop on Role of Indian Ocean in Climate Variability over India, IITM, Pune, February 2004.
4. Rao, R. R. and Sivakumar, R., *Q. J. R. Meteorol. Soc.*, 1999, **125**, 787–809.

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Response:

We thank Sanilkumar and Hareesh Kumar (SH) for their comments. Although the comments seem to be harsh, they have paved a way for better explanation on the evolution of mini warm pool (MWP) over East Central Arabian Sea (ECAS) and its influence on Onset Vortex (OV) formation, in the wake of

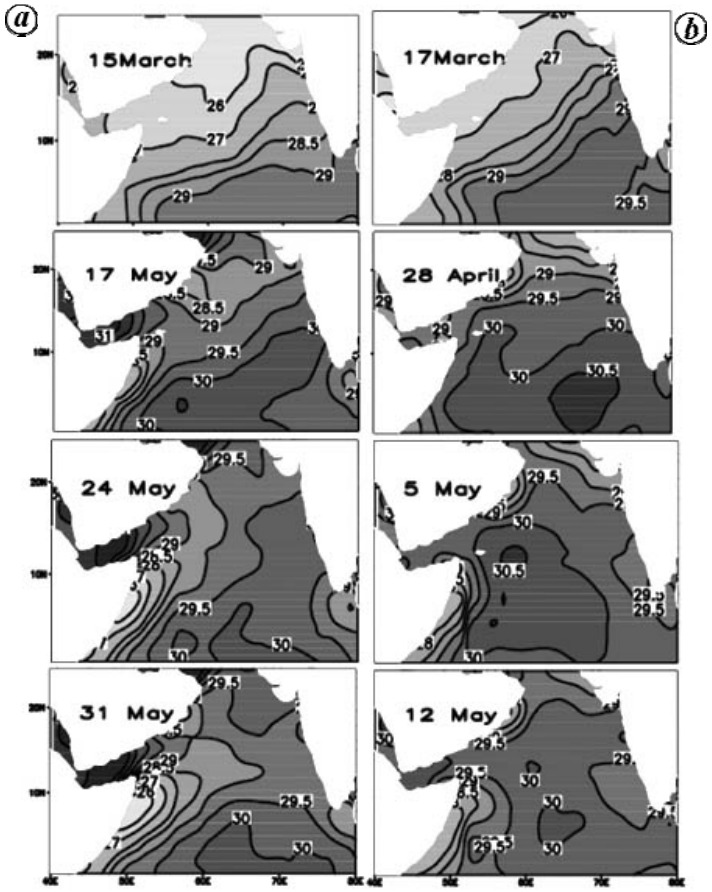

Figure 1. Weekly mean SST distribution for (***a***) the year 2000 (week-centred on 15 March, 17 May, 24 May and 31 May) and (***b***) the year 2004 (17 March, 28 April, 5 May and 12 May).

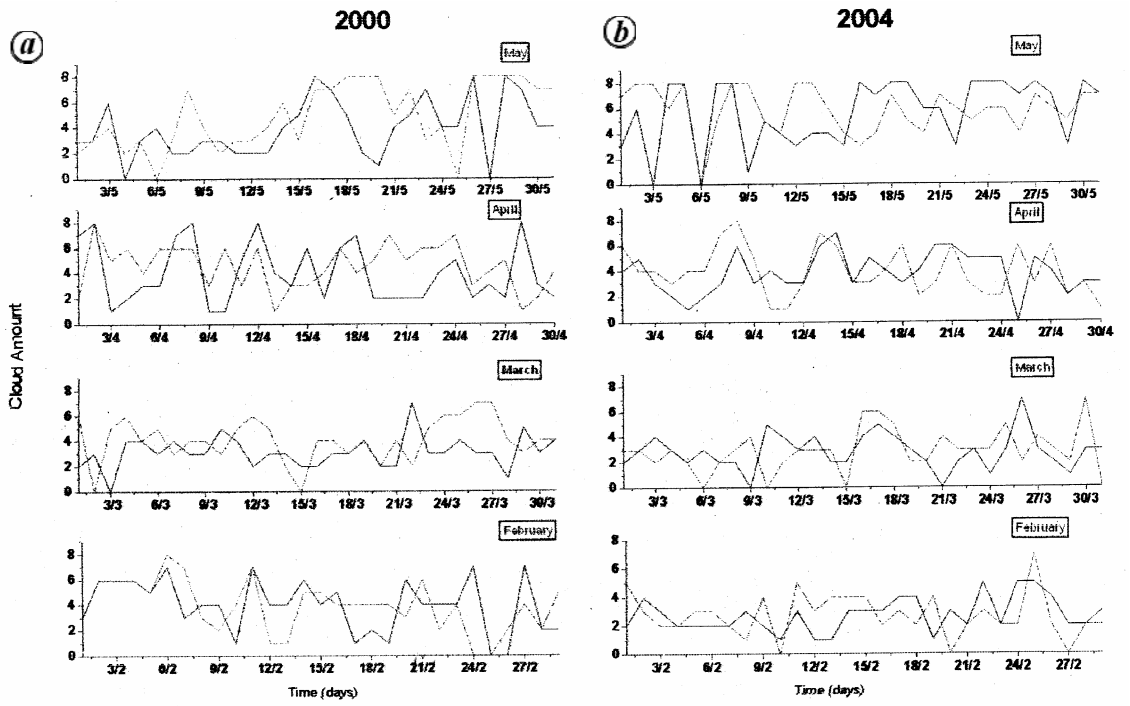

Figure 2. Daily cloud amount in octa from February to May for Aminidivi (solid line) and Minicoy (dotted line). Low (16 May), depression (17 May), cyclonic storm (18 May), severe cyclonic storm (19 May) during 2004.

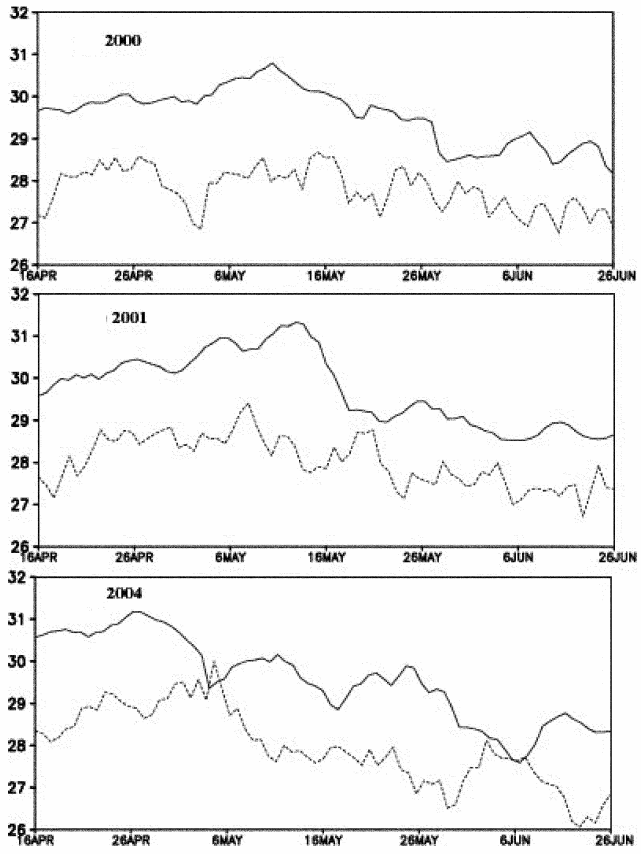

Figure 3. Daily TMI SST (solid line) and NCEP air temperature (dotted line) during 2000, 2001 and 2004.

which southwest monsoon current advances along the west coast of India.

Taking into account the comments of SH, the examples given thereof and the reference cited for the growth of MWP, we do not agree with SH. All the statements made by us at relevant places in our communication are reliable and proof-oriented. The words 'absent' and not 'formed', that we have used are intentional and not involuntary. We addressed a sustainable 'SST' distribution and not a temporary warming as shown by SH[1], wherein the depicted initial warming (13 May 2000) ceased by 25 May 2000, with a mixed layer temperature drop of 1.5°C. This scenario was also the same in 2004 (3 May vs 13 May 2004). Sustainable warmth of the sea must persist for a long time. The symptoms of warming would not perish even due to a short atmospheric disturbance, if the SST warming is rooted deeply. The seasonal mixed layer (isothermal layer) must be deep enough for maintaining a sustainable warm SST, so that it interacts with its neighbouring atmospheric boundary layer in such a way that both oceanic and atmospheric boundary layers maintain an equilibrium condition without abrupt variation from their initial boundary heights. A temporary warming of the top surface layer may be removed by a small synoptic atmospheric disturbance within a few days of its formation.

Although the southeastern Arabian Sea (SEAS) and ECAS warm up a little from March to May (Figure 1), the SST subdued below the threshold value 30.5°C in 2000 and 2004. Figure 2 illustrates the daily total cloud cover in octa from 1 February to 31 May for 2000, and in 2004 at two stations, Aminidivi and Minicoy. The inhibition and progressive warming in 2000 may be attributed to the prevailing cloud cover (Figure 2 *a*). The rapid cooling in 2004 was mainly due to a tropical disturbance that formed in the first week of May 2004 (Figure 2 *b*).

Figure 3 illustrates the area-averaged (over 10–15°N, 68–75°E) daily mean SST and air-temperature distribution (26 April to 30 June) for 2000, 2001 (OV year) and 2004. The warmer waters (at 30.5°C) are short-lived in 2000 and 2004, whereas they persisted for a longer period (nearly one month) in 2001. The SST in ECAS showed cooling far ahead of monsoon onset over Kerala (on 1 June) in 2000 and (18 May) in 2004, whereas warming persisted up to the onset (on 23 May) in 2001 with maximum difference between SST and air temperature, which is essential for active air–sea interactions and genesis of the weather system. SH may refer to Varadachari and Sharma[2] for better insight into SEAS warming (February to May).

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