sand grain composition were restored to the typical beach values', as typical beach salinity and DO values are in the range 34 to 35‰ and 6 to 7 mg/l. Therefore, re-colonization of meiofauna cannot be co-related to physico-chemical parameters, as values of DO and salinity have not reached typical coastal water values.

Thus, possible errors in estimation of DO and subsequent wrong interpretation have been reported by the authors.

1. Altaff, K. *et al.*, *Curr. Sci.*, 2005, **89**, 34–38.

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Response:

We regret that we have not mentioned the unit of DO; it is mg/l. We would like to state that the DO values mentioned by us, prior to and after the tsunami are the true state of this parameter to the best of our knowledge, in the intertidal zone of Marina Beach. The Marina Beach receives large quantum of untreated domestic sewage and industrial effluents through the Coovum River. Probably, this might be the reason for low DO content. We had not discussed these aspects as the correspondence dealt with the impact of tsunami on meiofauna. Further, our interpretations are restricted to the conditions on the Marina Beach.

Further, we would like to point out that we have not studied the fish populations in this region. Nevertheless, the meiofauna shows rich diversity and density with the DO level mentioned by us. With regard to silt deposition, we have provided detailed data on sand grain analysis, from which silt level can be inferred and scientific interpretation can be suggested.

Thus we hope there is no confusion or inappropriateness with regard to our data or interpretations.

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Does homeopathic treatment work?

A recent research paper in the British medical journal, *The Lancet* (2005, **366**, 726) has raised serious doubts about the homeopathic system of medicine. The study claims that there is no understandable biological mechanism underlying this system. The authors say that homeopathic medicines have simple placebo effect only. This paper has caused grave resentment amongst the homeopathic practitioners, and according to media reports, some of their associations intend to move to the courts of law. They maintain that this study is essentially a well-planned move on the part of the manufacturers of modern medicines to defame homeopathy and to strengthen their own position.

Homeopathic system is based on the belief that 'like cures like'. One of the most interesting aspects of homeopathy is that the efficacy of a drug increases with dilution. This is something completely inconsistent with our scientific understanding of biochemical reactions. Therefore, from a scientific point of view, this system cannot be accepted and supported. But it is difficult to ignore that homeopathy has gained noticeable popularity amongst a significant number of patients who maintain that they have benefitted a lot from it. That homeopathic drugs are far less costly than modern medicines is their indisputable plus point.

A question that deserves an answer is which of the two is more important: to have an academic understanding of the mechanism of how a system of treating ailments works, or the simple fact that people feel assured of being cured by and are generally satisfied with a given system. The first would undoubtedly draw the attention of a scientist, but a patient only expects that the system works. These days yoga and meditation are also gaining popularity, even though it is not clear how they really work. Perhaps 'mind over matter' works in many cases, which perhaps is outside the realm of the present-day science as we know it.

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Can Habur limestone curdle milk? – a myth or reality

Ranawat's[1] endeavour to suggest solutions to geo-myths is worth appreciating. The scientific community should come forward to eradicate myths spread in the society. If we make efforts to unveil the truth behind such myths, it is a wonderful service to the society. But if our endeavour is incomplete and conclusions are not based on proper scientific investigations, then it may mislead the society.

Habur limestone of Lower Cretaceous age in Jaisalmer district, western Rajasthan has enough porosity between the fossil fragments to hold curd-forming microorganisms if soaked in curd and used repeatedly for curdling process. But a fresh piece of Habur limestone should not cause curdling of milk, if curdling is due

to the curd-forming microorganisms transported in the form of particles occupying the pore spaces of the limestone.

According to popular belief in Rajastan, if a piece of Habur limestone is dipped in lukewarm (+40°C) milk or if lukewarm milk is poured in a stoneware made of Habur limestone and allowed to remain in it for 4 to 6 h, depending upon the season and atmospheric temperature, the milk will curdle.

It is interesting to note that porosity is of a higher order in other stones of the region like many types of sandstones. commonly used for carving stoneware. But no such curdling property has been reported from these sandstones or the stoneware carved out of them. Even stoneware carved out of marble (with calcium carbonate composition) do not exhibit any such phenomenon.

As far as porosity is concerned, earthen pots used in curdling in Mewar region of Rajasthan also show a higher degree of porosity, but in that case one has to add a small quantity of curd as a catalyst for curd formation.

To verify the popular belief, one litre fresh milk was first boiled and then cooled. The lukewarm milk was put in four separate beakers. In the first beaker (beaker-A) a freshly broken piece of Habur limestone was dipped. Another freshly broken piece of Habur limestone was kept in boiling water for about 10 min and then dipped in the second beaker (beaker-B). In the third beaker (beaker-C) some quantity of previous day's curd (*jamawan*) was added. In the fourth beaker (beaker-D) nothing was added to the lukewarm milk. All these beakers were kept at normal temperature/pressure conditions for a few hours.

After 8 h, it was observed that curdling started in beaker-C in which some quantity of curd had been added, whereas no reaction was observed in the remaining three beakers (beakers A, B and D). After 18 h, curdling of milk started in two beakers (beakers A and B) in which pieces of Habur limestone had been dipped. It gave the smell (and look) of curd. On the other hand, milk started thickening in the fourth beaker (beaker-D) in which nothing was added. It gave the smell of split-milk.

For microbiological examination, Gram's procedure was adopted to examine four slides prepared out of the above materials from beakers A–D. It is believed that the three bacteria *Streptococcus lactis*, *Streptococcus cremoris* and *Lactobacillus ferment*, considered to be responsible for curdling of milk[2], are non-motile, Gram positive and non-spore forming.

The two slides of material in which pieces of Habur limestone were dipped (beakers A and B) contained both *Streptococcus* and *Lactobacillus* bacteria (Figure 1 *a*). Both these bacteria were observed to be Gram-positive and non-motile. Similarly, the material (beaker-C) in which curd was added to the milk for curdling also contained Gram-positive and non-motile *Streptococcus* and *Lactobacillus* bacteria (Figure 1 *b*). On the other hand, the thickened milk in fourth beaker to which nothing was added showed only *Streptococcus* bacteria and some proteins and fats (Figure 2 *a*). Apart from this, curd (from beakers A and B) made by dipping a piece of Habur limestone in lukewarm milk displays a unique arrangement of bacteria (Figure 2 *b*).

We conclude that although curd-forming bacteria are non spore-forming, there is a possibility that Habur limestone contains endospores of 125–112 million-year-old-bacteria, which proliferate when suitable physico-chemical conditions are developed or the Habur limestone has a chemical composition that causes curdling of milk.

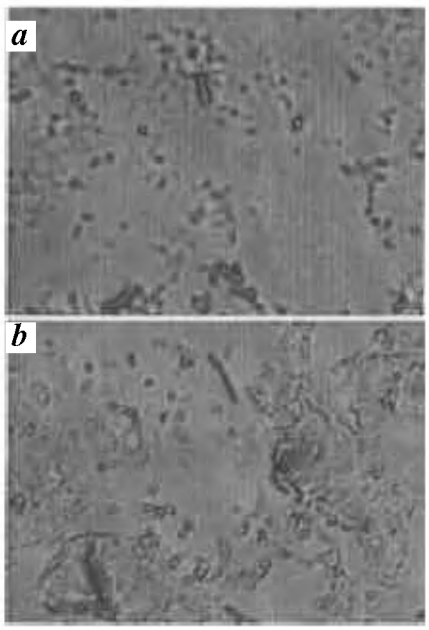

Figure 1. Photomicrograph showing bacteria in curd made from Habur limestone (***a***) and made by adding previous day's curd (***b***).

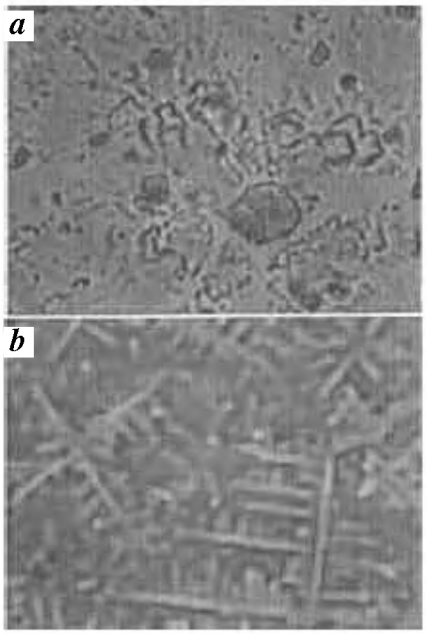

Figure 2. Photomicrograph showing bacteria in split milk (***a***) and unique pattern of bacteria in curd made from Habur limestone (***b***).

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