

CORRESPONDENCE

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The Kalinga Prize continues to be a dream for science communicators. Despite our three national awards for science popularization carrying double the prize money in one and almost same for the other two categories¹, the Kalinga Prize is still considered as a Nobel Prize in science communication. Rightly so, as among the past awardees have been well-known personalities, including a few

Nobel Prize winners.

1. Jain, N. C., *Curr. Sci.*, 1993, 65, 441-442.

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SCIENTIFIC CORRESPONDENCE

Comment on 'Quaternary sedimentation in the Indo-Gangetic Basin: A review'

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At the outset it is pointed out that a review paper normally covers all aspects in totality (related to the topic under consideration) to make it more informative and developing it as a base paper by presenting present status, gaps in our knowledge and guidance for future line of action. In this context the present review paper reflects incompleteness in projecting the above mentioned aspects and thus lacks justification.

In the present state of art of our knowledge on the subject, the review paper appears to have failed to comprehend the basic issues related to the topic under consideration. The basic issues before us are as follows:

(i) Sediment erosion, transfer and deposition by two distinct types of fluvial pattern in the Indo-Gangetic Basin namely lateral transport system that deposits sediments in high-gradient fans and low-gradient cones down the plains, and axial transport system that transfer sediments parallel to the strike of bounding faults¹⁻³.

(ii) Probable causes of coarsening and fining upward megacycles present in the Quaternary sequence of the alluvial plain of the IGB which can be ascribed both to tectonism and climatic oscillations⁴. Tectonism has its impact on valley floor slope and base level whereas climatic oscillations may affect base level and control precipitation rate³.

(iii) Identification, description and chronology⁴⁻⁹ of the most impressive

aspect of the topography of the Indo-Gangetic plain having an assemblage of classic tectonically produced landforms in the vicinity of the Himalayan Frontal Fault (HFF)³ and associated tear faults in conjugate pattern, for example expanding and contracting small alluvial fans at the northern margin of the Indo-Gangetic plain⁴, large alluvial fans transverse to Himalayan arc and skewed ones in the central part of the Gangetic plain, deflected and off-set streams, break-in slope across HFF and down south, fault scarps and related neotectonics, tectonic control of alluvial fans^{2,3}.

(iv) Study of the tectonically produced landforms in the vicinity of HFF and conjugate pattern of lineaments which are also explainable by simple shear-cum-gravity and associated uplift model^{1,3}. It has become quite apparent in the last few years that plate tectonic model alone cannot always be applied to explain continental tectonics¹⁰ and development of foreland basin/s in the continental interiors like the IGB influenced by combined effect of compressional and extensional tectonic setting. We must seek application of other options in the present context with the help of studies on alluvial fan sequences of the Indo-Gangetic plain, where the proximal part of the alluvial spectrum is one of the most profitable avenues of research in basin analysis, because alluvial fans are sensitive to external influences and also have preserva-

tion potential. Obvious interpretation of this consequence leads to identification of tectono-sedimentary facies model/s in the asymmetrical basin fill of the IGB³. One such interpretation can be of a tilt-block system for the evolution of the Indo-Gangetic foreland basin as a result of combined effect of compressional and extensional tectonic setting^{1,3}. In this system the deformed and uplifted Siwaliks^{1,3,11}, and the northerly sloping pediment-cuesta complex (Bundelkhand-Vindhyan Plateau) are the positive displacement vectors and the undeformed Quaternary sediments in the IGB, resting on northerly tilted pediment-cuesta complex, is the negative displacement vector and showing increasing thickness towards north^{1,3}.

(v) Lastly synthesis of data for evolving a workable basin model/s. Here, of course, the climatic fluctuations and hinterland geology are not to be overlooked and a clear balance set up between the rate of sediment deposition and subsidence.

Again there is some incorrect statement in para 1 under sub-head 'Sedimentation in Indo-Gangetic Basin' on page 860 of the volume. Remote-sensing study of NASA Landsat/ERTS imagery shows the presence of small fans adjacent to HFF along the Siwalik-IGB boundary which on-lap the large plains fans and not in the form of megacones as mentioned by the authors. The HFF and its vicinity is an

area of active tectonics and contrary to popular belief, the active fault scarps are rarely (generally not) sites of large fans/cones.

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Charu C. Pant and A. K. Sharma reply:

We thank D. K. Ghosh for taking interest in our review paper and for giving suggestions on some aspects of the sedimentation in the Indo-Gangetic Basin (IGB). The observations he has made are of general nature and there are no specific comments. However, regarding his comment on the term 'Megacone' it may be stated that it has been used in sedimentological sense and not in the morphological context. It may be pointed out, a 'fan' has been defined as 'A sedimentary deposit whose surface is a segment of a cone that radiates downslope from a point,

along a fault scarp or precipitous slope, a stream emerges from material in which its lateral movement is inhibited'¹.

It is well known from many comprehensive studies that the active-fault sites are usually the sites of active sedimentation and consequent deposition in the form of large fans/cones. As a matter of fact the rate and magnitude of the upliftment of the adjacent highlands controls site, rate and magnitude of the depositions of a fan².

We are sorry that some of the references cited by Ghosh have been inadvertently left out, as most of them have been pub-

lished in proceedings of the seminars and not in refereed journals of wide circulation.

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Indian strain of HCV

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Authors of the paper, Indian strain of hepatitis-C-virus: prevalence and detection¹, made some remarks that 'practically no information is available on either the prevalence or nature of HCV in India' and they claimed to have found 'Indian strain of hepatitis-C-virus'. There are, however, well documented prevalence of hepatitis C virus (HCV) in multitransfused, hence high risk recipients of HCV for blood and blood components from Eastern India^{2,3} and Western India⁴. Prevalence of HCV in voluntary blood donors from Eastern India varies from 0.9 to 1.1 per cent and in thalassaemics receiving programmed blood transfusion from a single centre is much higher³. The authors¹ observed that sera from ELISA positive for HCV were also positive by their novel method. The presence of seropositivity by an apparently more sensitive method used in the study may not be a confirmatory

criterion for a separate strain for HCV. An analogy may be drawn from other transmissible virus—hepatitis B (HBV) whose portal of entry and clinical behaviour are similar to HCV, wherein the high risk recipients screened for HBV by ELISA did show presence of hepatitis B markers either single or combined in almost 100% recipients of blood over a period. This could be due to the presence of small amount of viral antigen (HBsAg < 0.25 ng/ml) which may be infective in repeated exposure in immunocompromised subjects⁵. The authors¹ who observed seropositivity for HCV marker in otherwise seronegative (ELISA) in transfused subjects who may have received small amount of reactants but not necessarily of different strains of HCV.

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