

GEODYNAMICS OF NW INDIA: SUBDUCTION, LITHOSPHERIC FLEXURE, RIDGES AND SEISMICITY by M. Ravi Kumar, D. C. Mishra, B. Singh, Ch. Venkat Raju and M. Singh, *Jour. Geol. Society of India*, 2013, v.81, pp.61-78.

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We wish to commend Ravi Kumar et al. for the use of gravity to interpret the geology of North Western India. Most of their thrust has been on the crustal flexures and their relation to the topographic and fault boundaries. There has been no attempt by the authors to relate their findings to the important aspects of mineral deposits that exist in the area studied. In this respect, a few comments on this work are in order.

1. The Aravalli Delhi Fold Belt (ADFB) lies in between Sardar Shahar Fault (SSF) and Moradabad Fault (MF). The bulk of it is between Phulad Ophiolite Thrust (PT) which extends into Mahendragarh-Dehradun Fault (MDF) (see Fig.1, p.62, Ravi Kumar et al., 2013). The Aravalli Delhi fold belt is associated with many Copper-Lead-Zinc deposits. Some of these deposits are recognized as world class. The authors should have related these deposits to the gravity profile in their map.
2. The ADFB has been considered by these authors as a Proterozoic collision zone characterized by metasediments and ultramafic rocks (p.62). Thus it makes it all the more necessary that gravity profiles are drawn in NW-SE direction across ADFB.
3. How do the gravity models proposed by the authors relate to various mineral belts? It would be very useful to have these mineral belts included in the interpretation of the Geodynamics of Northwestern India
4. Late Dr. M.N. Qureshy and late Dr. Krishna Brahmam of National Geophysical Research Institute (in 1964 at the behest

of the National Mineral Development Corporation) undertook gravity survey in the Khetri Copper Belt near Madhan-Kudhan Mines. Their work indicated folds plunging to the NW and SW.

5. We suggest that the authors consider drawing profiles across the mineralized areas such as Khetri Copper belt to bring out the geodynamics of the area.

D.C. Mishra and others reply:

We are thankful to D.B. Sikka and C.E. Nehru for their interest in our paper.

They have emphasized the absence of discussion on mineralized zones of the Aravalli – Delhi Fold Belt (ADFB) in our paper. The gravity data for ADFB are at station interval of 5 km which cannot be used for mineralized zones. Such data sets are suitable only for large scale geodynamic studies. We recorded data only along the Jaisalmer – Chandigarh section to model lithospheric flexure under Ganga basin which have been attempted by us. In fact because of our interest in Himalayan tectonics, we extended this profile up to the Main Central Thrust and modeled it for same purpose. We agree with the author that for geodynamics of the ADFB, a NW-SE oriented profile would have been ideal. But our objective was not to delineate structures under the ADFB but more related to the basement under the Ganga basin. The description of the ADFB came just by the way as it occurs in that region. Gravity profiles across the ADFB have been modeled earlier and published by Mishra et al. (2000, *Precamb. Res.*, v.99, pp.149-169). Even that profile was also meant for regional studies. Mineralized zones require special kind of data sets recorded at close intervals of 1-10-100 m.

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