## DISCUSSION

*This section is intended to provide a forum for the discussion of papers published in our Journal by those working in similar fields of investigation and research. Such a discussion is expected to be of value not only to the actual workers in the concerned field, but also to a wider circle of readers interested in the progress of geological studies.*—Editor.

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Paper on 'GONDWANALAND AND THE GROWTH OF INDIA' By A. R. Crawford, published in the Journal (Vol. 12, No. 3, pp. 205-221 September, 1971)

*Comments by A. K. Saha (Presidency College, Calcutta) and Asit K. Roy (Ashutosh College, Calcutta)*

We wish to draw attention to an erroneous statement in the concluding paragraph of the extremely thought provoking paper by A. R. Crawford. It is stated that *all* Indian anorthosites lie within the Eastern Ghats belt. But the largest known anorthosite body in India, the Bengal anorthosites (Lats. 23°28′–23°32′, Longs. 86°50′–87°10′) (*cf.* Chatterjee 1959), which is over 200 sq. km in area, as well as some smaller bodies in the adjacent Purulia District (Sen and Roy Chowdhury, 1951), lie well within Satpura Precambrian province (dominant metamorphism and granitization closing at 900 m.y., *cf.* Sarkar 1968).

The Bengal anorthosite is folded along with the enclosing migmatites and is invaded by a younger granite (cf. Roy 1971a, b). The isotopic age of the Dubrajpur granite which appears to be the youngest igneous body in the adjacent areas of Satpura province is dated at 795±10 m.y. (Crawford, 1969). Thus the Bengal anorthosite must be very much older than 500 m.y.

The above noted anorthosite occurrences lie at least 200 km away from the northernmost limit of the Eastern Ghats province. They cannot be considered to lie on the locus of the fractures along which the Gondwanaland broke up, because these anorthosite occurrences are far from the east coast of India.

Finally, it may be mentioned that the publication by Herz (1969) in which a number of age data for anorthosites are reported to have been given is not included in the list of references cited at the end of the paper.

### REFERENCES

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*Author's reply*

I am grateful to Drs. Saha and Roy for their kind remark and for pointing out that the Bengal anorthosites are not within the Eastern Ghats belt, as was also stated by De (1969). They are quite right in suggesting a distinction in this sense between them and other anorthosites found in the belt. They may be correct in going on to say that the Bengal anorthosites 'cannot . . . lie on the locus of the fractures along which the Gondwanaland broke up', but nevertheless, if the distribution of all the anorthosites is looked at purely geographically, they all lie within a linear belt; what significance this may have might repay study.

The final paragraph of the paper was put in at the last minute which perhaps explains my regrettable omission of Herz (1969) from the references I take it that Drs. Saha and Roy, in saying quite rightly that the Bengal anorthosites must be very much older than 500 m.y., imply that I suggest the others are of about that age. I stated that the mobile belts, of which the Eastern Ghats belt is one, show marked concentrations of isotopic ages at about 500 m.y. There are however much older ages appearing in these belts, and in no way should we make assumptions about the age of the anorthosites; at present we have scarcely any satisfactory evidence of their age or ages of emplacement. The important thing is that they have a linear distribution and nearly all lie within the mobile belt.

REFERENCES

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HERZ, N., (1969) Anorthosite Belts, Continental Drift, and the Anorthosite Event. *Science*, v. 164, pp. 944-947.