

## BEHAVIOUR OF ELEMENTS IN TROPICAL WEATHERING PROFILES

*Dr. P. R. Banerjee of the Geological Survey of India writes :*

“India took a leading part in executing UNESCO-IGCP Project 129 on Lateritisation Processes from 1977 to 1983. This international endeavour yielded a body of original scientific data (published in two Proceedings of International Seminars, held at Trivandrum, 1979 and at Sao Paulo, 1982) and a broad consensus on the element associations and ore formation processes in the lateritic rocks. The last Newsletter of this project was released a few months back.

The Geological Survey of India is developing a successor project to study the behaviour of elements in tropical weathering profiles. This would naturally call for extensive interchange of ideas and data. The basic aim is to develop conceptual models of element dispersion, which might enable locating deep-seated ore deposits below the thick carapace of tropical weathering. Not all techniques of geochemical or geophysical prospecting are equally successful in tropical terrains. Deep weathering masks not only secondary geochemical anomalies; geophysical responses also become feeble and non-diagnostic because of low S.P. variability in galvanic cells operating at great depths. Dynamic landform processes have also a major role.

In order to understand the characteristics of the weathered zones in tropical profiles of India, and the interaction among weathering, erosion and reaction kinetics, it is necessary to collect data/organise research on the zones of oxidation and/or supergene enrichment in known deposits of chalcophilic, lithophilic and siderophilic elements/ore deposits. Controlled studies on and around existing mines might be very revealing. The researches would essentially cover mineralogical and geochemical studies with modelling of ore element migration budget. Geophysical studies on well-explored oxidised domains will also be very useful to relate electrochemical signals with ore. This might actually help in cutting out a lot of wasteful effort and devise appropriate exploration techniques.

It is possible that organizations/Institutes are engaged in study of some of these aspects. It would be in the interest of the project if such efforts are pooled together. To do that, it is necessary to know who are the active researchers in this field and what their present lines of enquiry are. Your support in this endeavour of fact finding is solicited. Please let me have the names and brief details, so that we could establish, with your kind approval, closer contacts with actual workers and develop the investigations of our successor project in a proper format. Sometime later organisers propose to have a get-together in a national symposium to exchange experience and enlarge our programme. Meanwhile, it is necessary to erect the basic framework by responding to this request”.

Those interested in the objectives of the project are requested to get in touch with Dr. P. K. Banerji, Director-in-charge, Geological Survey of India, Orissa Circle, Bhubaneswar 751 012.