

Foreword

I am very honoured to have been invited to write the foreword to this issue of the Journal of the Geological Society of India, particularly so because it represents an important step in India's participation in the world of ore deposits associated with mafic and ultramafic rocks. The papers reporting Indian research on the Fe-Ti oxide deposits at Nuasahi, the Archaean chromitites of the Singhbhum craton, and the Manipur ophiolite complex in the Indo-Myanmar orogenic belt will be read with great interest by international scientists working in these fields, as will the discussion of PGE analysis, the paper on the Merensky Reef and that outlining the requirements for the development of magmatic sulphide deposits in Ural-Alaskan type intrusions.

Perhaps, given my long-term interest in magmatic sulphide deposits, I may be allowed to express the regret that the papers on this aspect are not authored by those conducting research within India. Gondwanaland contained 75% of the world's resources of platinum, now located in South Africa and Zimbabwe, while significant nickel resources occur in Western Australia, South Africa, Zimbabwe, Botswana and Tanzania. There is no reason why India, which occupied such a central position in the former continent, should not be similarly endowed. Indeed, even with my very limited personal knowledge of Indian geology, I would have thought that the intrusions of the Khetri lineament, the Sittampundi anorthosite complex or komatiites of the Dharwar craton and the Nuasahi-Sukinda igneous complex of the Singhbhum craton amongst other areas would offer scope for continuing research on magmatic Ni-Cu-PGE deposits.

There has been a long tradition of distinguished earth scientists working in the field. The first part of the 20th century saw several famous names, including those of Vogt, Spurr, Hawley and Godlevsky, working on sulphide ore magmas. The dawn of the 1970's, with the internationalization of science that came with the advent of cheap travel, saw the start of much greater international cooperation on the subject. Perhaps the first truly international conference devoted to magmatic sulphides was the 1st International Platinum Symposium that was organized by Reid Keays at Melbourne University in 1971. This was followed by the 2nd in Denver in 1975, the 3rd in Pretoria (1981), 4th in Toronto (1985), 5th in Turku (1989), 6th in Perth, W.A. (1992), 7th in Moscow and Noril'sk (1994), 8th in Rustenburg (1998), 9th in Billings (2002) and the 10th in Oulu (2005). It has recently been announced that the 11th symposium will be hosted by Laurentian University in Sudbury in 2010. A series of IGCP (International Geological Correlation Programme) projects started under the auspices of UNESCO and IUGS in 1977 with IGCP 161 "Magmatic Sulphide Deposits in Mafic and Ultramafic Rocks" (1977-87) led by myself and Heikki Papunen. This was followed

by IGCP 336 “Intraplate Magmatism and Metallogeny” (1991-95) led by Mike Zientek, IGCP 427 “Dynamic Processes in Ore-forming magmatic systems” (1998-2002) led by Mike Lesher and Sarah-Jane Barnes, and IGCP 479 “Sustainable use of platinum-group elements” led by Jim Mungall, Markku Iligna and Cesar FereroFilho. These projects have covered much of the world, including short courses in Zimbabwe, Finland, Brazil and Hong Kong, and field trips in Ontario and Quebec, Brazil, Norway, Finland, Zimbabwe, Western Australia, Alaska and Montana, Emeishan and Jinchuan in China, and the Kola Peninsular and Noril’sk in Russia. A major conference and short course devoted to Ni sulphide deposits is being organized by Professor Tang in X’ian, Lanzhou and Jinchuan in 2009.

Only a handful Indian scientists have been involved with these international endeavours. In view of the recent large increases in the prices of Ni and Pt, and the current pace of industrialization in India, it is my hope that the future will bring much greater Indian interest in the subject of magmatic sulphide deposits, and the necessary greater financial support. An explosion of Indian research on magmatic sulphides and their host rocks will give rise to the development of a local knowledge base that will enormously facilitate the discovery of the Ni and PGE resources that surely exist within India.

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30th June 2008

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