NEWS AND NOTES

Report on Training in “Advances in Chromitite, Ni-Cu Sulphide and PGE Deposits in Ultramafic and Mafic Igneous Rocks with Special Reference to the Nuggihalli Schist Belt (NSB) and Extension Areas, Karnataka, India – P. Krishnamurthy and R.H. Sawkar (Email: gsocind@gmail.com)

The above training programme organised by the Geological Society of India, Bangalore and sponsored by the Mysore Minerals Ltd., (MML), Bangalore was held during 1-15 December 2010.

A report on the Phase I of this programme covering “theoretical and general aspects” has been published in the August 2010 issue of the Journal. Phase II of the training was held as follows:

Phase II (a): 18-22 October 2010.
Camp: Chennarayapatna

Camp: Sravanabelagola and other areas

At the end of Phase I the trainees were grouped into four batches (A,B,C,D) and twelve traverses covering 5-6 km across NSB and areas lying along NNW and SSE direction were allotted to the 4 batches for detailed study during the Phase II(b). These traverses were identified based on previous work, available information and reports on Cr, Cu, Ni mineralization, besides reported occurrence of PGE in some areas. All the available publications and maps, especially those by the former Mysore Geology Department were provided to all the trainees. The trainees have been requesting to upgrade the existing maps on different scales (1:2000 – 1:20,000) and also to provide new geological sections based on their traverse. Analytical inputs on representative samples collected during the traverse would be provided by the scientists from NGRI as part of this programme.

During Phase II(a), a field orientation programme was conducted for all the trainees at the NSB from SSE to NNW, with critical traverses at Jambur, Tagadur, Byrapur, Bakhtarahalli, Aldahalli and Lakshmi Narayana chromite mine. The trainees were familiarized with the different rock types that occur in these areas and their mutual relationships. Special attention was paid to the study of chromite ore bodies within the ultramafic rocks and the Ti-magnetite bands with minor Cu-sulphides within the gabbro.

During this phase the trainees not only had the opportunity to work with Dr. Mondal of Jadavpur University in the field, but also hear his lectures on the Cr, Ni, Cu, and PGE deposits and their evolution.

Phase II (b) began from 1st December and the trainees were provided with contingencies for logistic and transport support to continue their field work till 15th December. In between, from 5th to 7th December, they attended the lectures delivered by Prof. Tony Naldrett of University of Toronto and an authority on Ni, Cu- sulphide, PGE and chromite deposits.

Prof. Tony Naldrett gave the following lectures covering the entire gamut of magmatic Cu, Ni, PGE and chromite deposits that are known from diverse magmatic environments.

1. An overview of Ni-Cu-PGE and Cr deposits of the world, their classification and some fundamentals
2. Deposits related to anorthosites (e.g. Voisey’s Bay)
3. Deposits related to Flood basalt provinces (e.g. Norilsk, Russia)
4. Deposits related to Komatiites (e.g. Kambalda and others)
5. Pechenga (Russia) and Jinchuan (China) deposits
6. Chromitite problem and genesis
7. PGE deposits: an over view
8. PGE in the Bushveld, South Africa
9. Application to exploration

During Phase II(b), the trainees participated in the lectures delivered by Prof. Tony Naldrett of University of Toronto and an authority on Ni, Cu- sulphide, PGE and chromite deposits. The lectures were held at the campus of the Bahubali Engineering College, Sravanabelagola.

Prof. Naldrett along with trainees at the Tagadur chromite mine, NSB, Karnataka
The entire set of 404 Powerpoint presentations of the nine lectures received earlier from Prof. Tony Naldrett was given to all the trainees, so that they could follow the lecture and interact with him. The trainees had closer interaction with Prof. Naldrett during and after the lectures and were immensely benefited. After the lectures Prof. Naldrett visited, along with the trainees, the chromite mines of MML at Jambur and Tagadur and examined the chromitite outcrops besides the Ti-magnetite ore bodies at Ranganbetta.

The trainees will submit their reports after the completion of filed work and are expected to provide new data from both NSB and extension areas which will be useful in taking up new areas for the search of Ni, Cu, Cr and PGE resources in Karnataka by MML and other agencies.