

# PERTEMUAN PERSATUAN (MEETINGS OF THE SOCIETY)

## TECHNICAL TALKS

- A. BOWDEN: Resistivity technique as currently applied to Groundwater Exploration in Australia and the Klang Valley Groundwater Project, Peninsular Malaysia.

Some 45 enthusiastic members turned up for the above talk held at the Department of Geology, University of Malaya on Wednesday, 3rd March, 1982. In his introductory remarks, Dr. Bowden is of the opinion that groundwater exploration has special meaning in Malaysia and is currently, however in an infancy state. He also suggested that groundwater exploration must be done in an orderly, scientific manner such that it will reduce cost and maximise returns.

He then mentioned 3 common approaches in groundwater investigations that have usually been carried out in Australia, namely the 'hit-and-miss' drilling technique, water divine or witching, and the technical approach. He favoured the technical approach which relied both on geophysical and geological surveys. Geophysical technique, according to Dr. Bowden is getting more important in Malaysia due to a number of reasons, for one, there is not much good data base, and for another, drilling is expensive. Therefore, geophysical techniques allow for site maximisation. He proceeded to outline various geophysical techniques used in groundwater investigations, and singled out the resistivity technique which has been proven to give alot of information, particularly when it is used with geological data. Principles, factors affecting resistivity, theoretical and interpretation of resistivity techniques were then elaborated upon.

Applications of this technique, in some detail, were then cited with Australian and Malaysian (Klang Valley) examples. In Australia, the resistivity technique has been successfully applied in locating artesian aquifers, fracture zones in schists, channels in alluvium, basement configurations and retention ponds. In Malaysia, preliminary studies have shown that groundwater potential is available in fractured granite zones (Subang Jaya); saturated sand and gravels (Subang Jaya); fractured zones in limestone (MAHA, Old Klang Road) and the Kenny Hill Formation (Shah Alam).

In summing up, Dr. Bowden concluded that the resistivity technique is a tool in groundwater investigations and has great potential in groundwater exploitation in Malaysia. He also warned that geophysical techniques, however, are not at all definitive, 'it is a means to an end'. A lively and useful discussion followed the talk.

Dr. Bowden is presently engaged in groundwater exploration in a few areas in Malaysia, namely the Klang Valley and Parit Buntar. He has worked extensively throughout Australia and Indonesia and is presently Supervising Senior Consultant attached to the Australian Groundwater Consultants Pty. Ltd., Australia.