

## **TRIP NOTES**

### **NORTH ISLAND – NEW ZEALAND DEC & JAN 2003 / 2004**

Please note that trip notes are exactly what the name suggests. They are not polished literal works. If you want to know something specific about the area visited, feel free to e-mail me.

The main purpose of the trip was to visit the Taupo Volcanic Zone which is the most active volcanic area in New Zealand. The volcanics are the result of the Pacific plate subducting beneath the Australian plate. Interestingly, the plate twists as it dives which results in subduction, extensional rifting and strike/slip action (south island). The effects of this tectonic activity has produced several stratovolcanoes, many volcanic cones, geothermal fields and their associated products. Several of the volcanoes are active with eruption events occurring in 1996 and 2001.

A fairly uneventful trip with excellent weather and little rain – when it did rain, it rained in torrents - but only for one day. Unfortunately the rental vehicle was broken into four days into the trip and passports, visa and some cash stolen – not too mention two broken windows in the car. This unfortunate affair resulted in spending an extra two days in Auckland sorting out replacement VISA cards and changing the rental car! I was lucky in that after reporting the theft to the police, Jolanda decided to return to the crime scene and scout around the bushes! Jolanda found everything that was stolen, with the exception of some cash and vitamin tablets, tossed under a bush! I guess the thieves thought the vitamins were drugs – I hope they got a shock the next morning when they saw a bright orange discharge!!

The remainder of the trip went well although three weeks was not enough time to see everything in the north island – there is just too much to see!

#### **Taupo Volcanic Zone**

Inspected and climbed a number of volcanoes which included climbing Mt. Rapahu and seeing a crater lake with 75 degrees Celsius water! Chartered a helicopter and flew to White Island located 55 km off the shore. White Island is New Zealand's youngest and most active volcano. It erupted in 2001, and is active. The short trip was the highlight of my stay. Sulphur geysers, steaming 275 degree hot mud, sulphuric acid discharging everywhere, lots of volcanic bombs, crater rims, crater lakes, and other interesting geological and vulcanological features – in short a geologist's paradise!! It was unfortunate there were no eruptions occurring during my visit. It would have been great to have seen another eruption like that witnessed in Papua New Guinea (Rabaul) in October 2002, but I guess you cannot have everything. Also visited several active geyser fields with lots of sulphur and steam discharge, hot boiling mud and water. The mud was great!

One of the interesting features of the geothermal areas were thermophiles. Thermophiles are bacteria which live in areas that are very hot! The colour of the

algae is dependent on the temperature of the water and ranges from orange to red to brown and green (see the Earth Science section for more detailed information on thermophiles)

Geothermal areas are analogous to deep ocean sinter springs and scientists believe conditions in these areas are similar to those at the time the earth was created (4.5 billion years ago). The first forms of life probably evolved within very hot deposits similar to those in geothermal areas, therefore, geothermal areas are excellent areas to study the evolution of early life forms. These sites can also be used to determine the evolution of life on other planets such as Mars.

### **Museums and Coffee**

I also visited several museums which were excellent. The New Zealanders are experts when it comes to their museums. Each large town has a museum and there are several specialist museums (airforce and army museum). The museums are very hands on and have superb interpretive displays.

The New Zealanders (which includes the indigenous Maori population) are very friendly and helpful. The coffee is the best I have tasted and is more or less consistently good throughout the island.