A Two Day Field Trip to

Dapen Peninsula near Daya Bay, Shenzhen

(29th – 30th November 2008)

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This is a report to summarize the 2-Day field trip to Daya Bay in Shenzhen on 29th and 30th November 2008. With the help of photographs, our members would be able to recall what we had experienced during the field trip and other readers may also be able to understand more on the geology in this region.

INTRODUCTION

According to the brochure of Dapen Peninsula National Geological Park, Most part of the Dapen Peninsula has a geological age of Jurassic that has experienced two periods of volcanic eruptions. There are also ancient fossils embedded in rocks (mostly Devonian) which can be found along the coastline. Faults, structurally folded rocks, natural waterfalls, rock fall sites etc. are also commonly seen in the region.

A group of 27 members of the Geological Society of Hong Kong (GSHK) set out to Dapen Peninsula near Daya Bay from Lo Wu Station for the 2-day field excursion. The trip was co-organized with the Geological Society of Shenzhen City. The sites that we visited were Luzui (鹿咀) and Yang Mei Keng (楊梅坑) on 29th November 2008, Xichongkou (西涌口) and Shuitousha (水頭沙) on 30th November 2008.

Accommodation had been arranged at 夜明珠賓館 near Shawan (沙灣) which was tidy and relatively large and considered very good with the price we were offered. The view from the hotel was beautiful especially at sunset and the quiet water at daybreak.

DAY 1 – (29th November 2008)

Our President of the Society, Dr. Margie CHAN, introduced the details of the 2-day field trip on the bus, Mr. C.M. LEE, Professor Lung CHAN and Mr. Z. K. KANG (Secretary of the Geological Society of Shenzhen City) provided briefing on the geology of Dapen Peninsula and useful information of the features seen along the highway. The condition of the highway was good with many tunnels that save some

traveling time.

We were welcomed by the **Management Office of the Geological Park** at a meeting room and provided briefing on the development of Qiniang Shan Park. Mr. C. M. LEE emphasized the importance of preventing the geological features within the park from damages by human activities in long run.

Our first site, after lunch, was to see the sedimentary rocks at Luzui (鹿咀) at the east side of Dapen Peninsula. There were plenty of sedimentary structures as if they were the decorations on the beach, such as faulted bedding, folded layers of Devonian meta-sandstone, anticline and synclines, cross-bedding of sandstone as well as recumbent folds etc. were observed at the rock exposure along the beach. Some sandstone beddings were tightly folded and faulted at one limb. At a few locations along the rocky coast, we had to climb on the cliff, which was to some extent quite dangerous, but most of us considered it worth-going.

Before sunset, our bus brought us to the site in the direction to Qiniang Shan (七娘山) where we could see some boulders containing lava flow features. Flow bands were common on the boulder/outcrop surface along a stream course.

Some holes of approximately 20mm – 30mm in diameter were observed on some boulders of lava flow. Some crystals were also observed inside the vugs.

On the way down the path some villagers were watering their vegetables and crops in the field before they prepared their dinner. It was time for us to head back to the hotel for dinner too. Our members probably had enjoyed the dinner very much that they had karaoke after dinner, some of us also danced.

DAY 2 – (30th November 2008)

After breakfast at the hotel, our first destination of the day was to Xichongkou (西涌口) near the southerly edge of the peninsula. The geology there was mainly Devonian meta-sandstone along the coast; a probable granite/meta-sandstone contact zone was also identified on one spot of the slope by the roadside.

Alighted from the bus, Mr. Kang of the Geological Society of Shenzhen City briefed our members the geology and geomorphology of the region, particularly the sand bar in NE direction from Xichongkou (西涌口) and at the foot of Qiniang Shan (七娘山). That was the recent sand bar bounded by the beach about 3 km long. An ancient sand bar lying behind the beach and a lagoon was formed landward but the old sand bar was unable to be seen now as it was hidden by the trees (麻王樹). From the photograph, Qiniang Shan (七娘山) was located at the farther side from the centre of the photograph below which was a volcanic region and the volcano had erupted twice.

At the hill top, there was a track leading to the east provided beautiful scenic areas over the sea to Dasanmen Island (大三門島); another track to the south and

down the cliff consisted well bedded/laminated Devonian meta-sandstone / phyllitic sandstone with some fossils. These rocks possessed some degree of sheen on bedding plane and they were exposed all over on the steep tracks (approximately 60 – 70 degrees) to the wave-cut platform by the sea. In order not to damage the geology of this region, our members looked for the Devonian fossils only from boulders of the rocky coast. Most of our members were very keen on searching for the Devonian

fossils that we spent about 2 hours there. Eventually a few plant fossils and one probable fish fossil fragment were collected.

The fish-like fossil and some plant fossils were unveiled from the meta-sandstone at the foot of the cliff while a fossil of probable bivalve was discovered on the bedding plane of phyllitic meta-sandstone along the side of the track at the last turn before reaching the base of the cliff. The rock was exposed to weathers that there was a weathering rim around the fossil.

Mr. C. M. LEE also kindly shared his experience with our members that he demonstrated the effective way of holding hammer and chisel for taking fossils out of the rock. We were so excited and satisfied ourselves with the treasure of experience obtained in the field trip by seeing these ancient fossils and the prominently well-bedded rocks, we did not feel tired at all although all of us had to climb up this cliff on the way back to the bus.

The next site, after lunch at Nanao (南澳), was Shuitousha (水頭沙). The site was an old quarry with well-exposed rock faces and well-bedded fossiliferous coal-bearing shale/sandstone.

The site was fenced off with chain-link fence and we were eventually allowed to stay for a while to look for fossils. Within these rocks, there were plenty of plant fossils of Devonian age that could be easily found in the boulders on the ground.

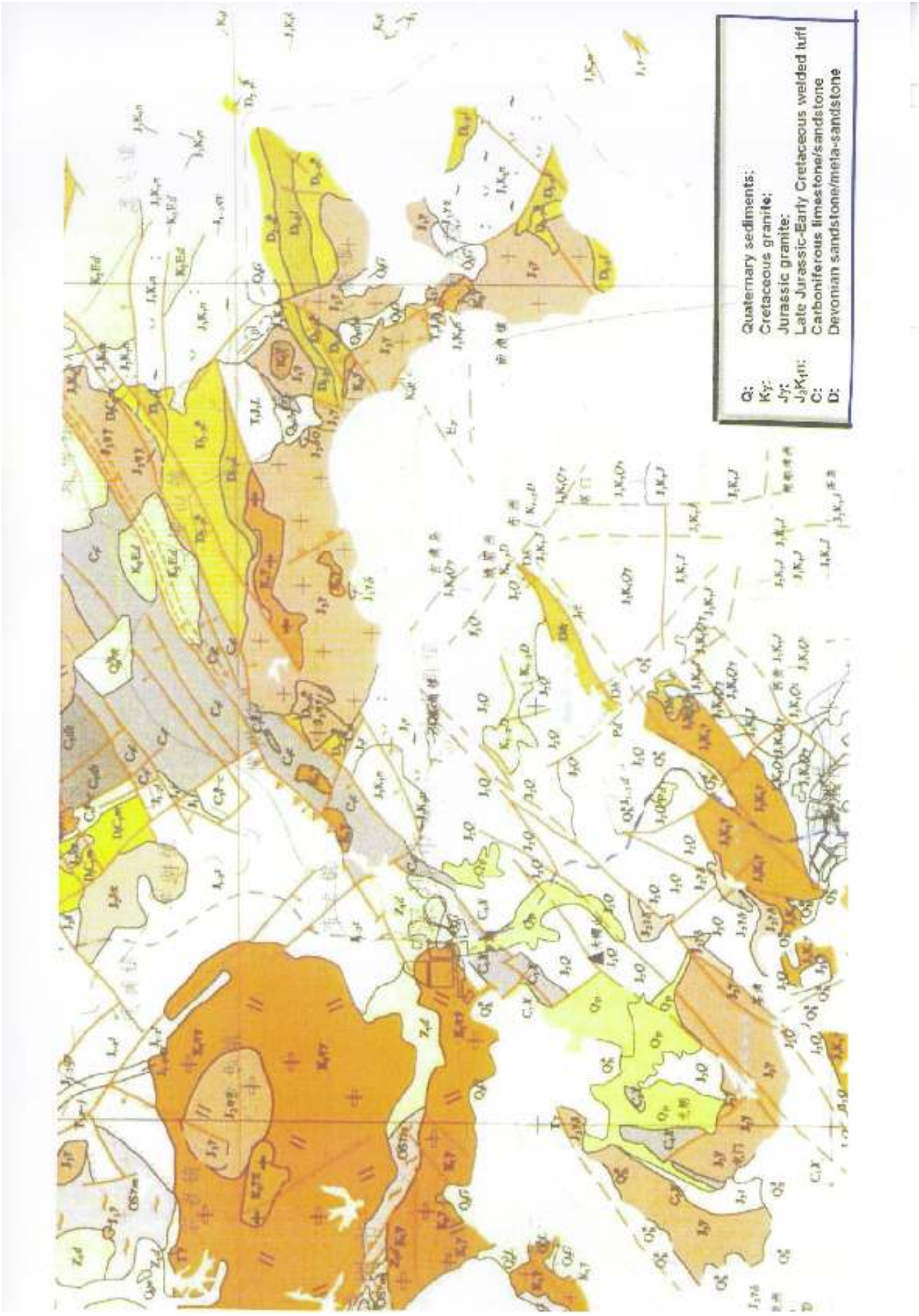
Most of these plant fossils were tinted white and was considered to have undergone some sort of weathering. Mr. K. W. LAI had however found a bivalve fossil.

Despite the cheerful laughter echoed amongst the rock faces for the discovery of fossils, we should also be cautious to some loose rock blocks sitting on the crest of slope that might have potential of falling down.

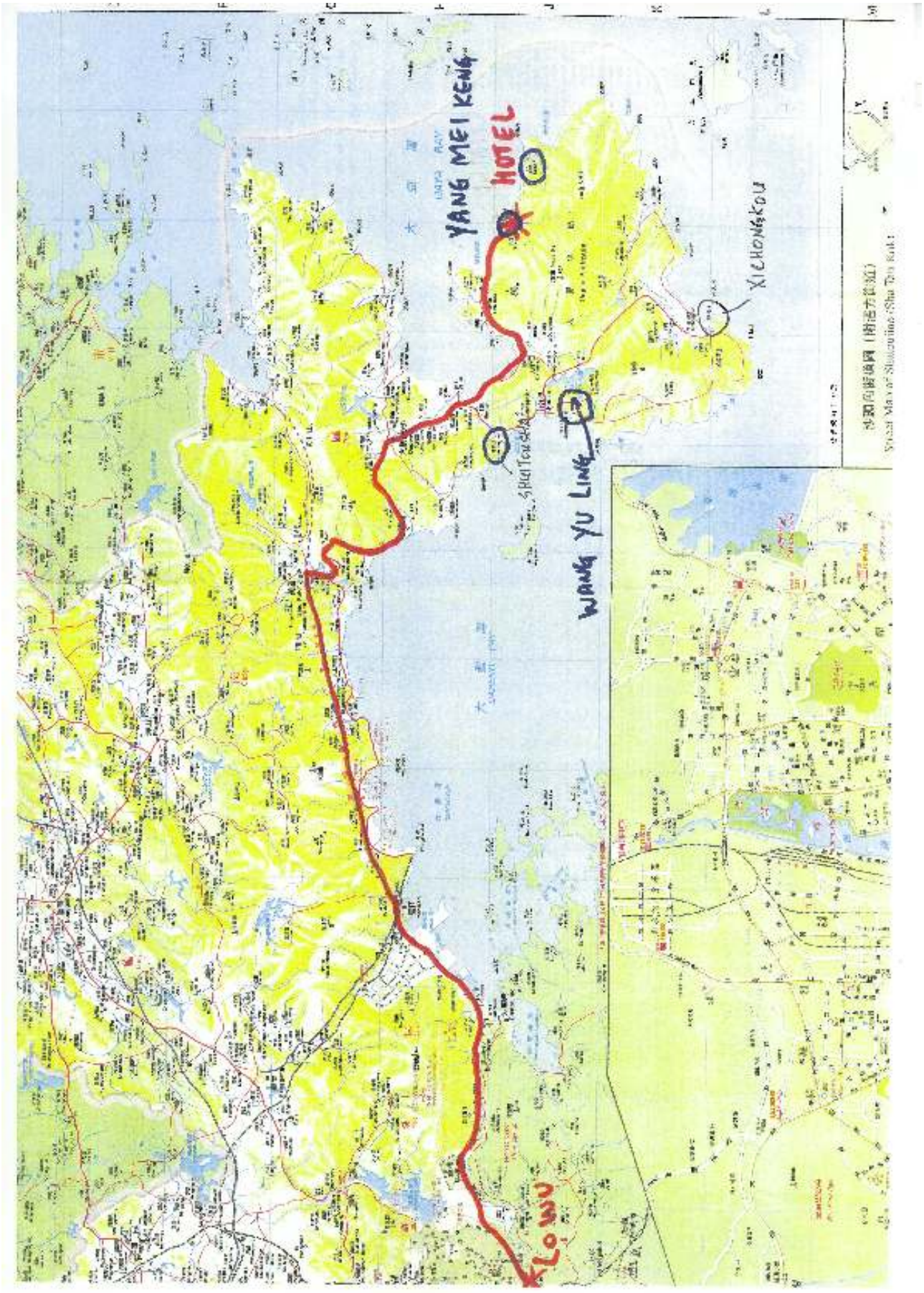
In order to follow the original schedule to return to Lo Wu at around 6:00 p.m., we had no choice but to leave the fossils with the rock. All of our members applauded with satisfaction and disbanded at Lo Wu Station.

NOTE

This is only my observation in the field trip that I recorded for members' information. Members are welcome to supplement more geological features and information they observed during the field trip in our web site. Other selected photographs taken from the sites we visited in the field trip are also appended.



Geologiccal map of Shenzhen and NE of Hong Kong



Location Plan

- View from hotel

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- Mr. Kang was briefing members on the geology of Dapen Peninsula.

- Members were briefed by Mr. C. M. LEE on geology when going up the peak above Xichongkou.

- Sand bar and lagoon with Qiniang Shan at the background.

- Mr. K. W. Lai's greeting at Xichongkou.

- Erosion caused by effects of wave at Xichongkou.

- A probable fish fossil fragment found on the beach at Xichongkou

- Plant fossils at the quarry of Shuitousha.

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- Rugged coastline – View from Xichongkou

- Plant fossils in a quarry at Shuitousha

- Mr. C. M. LEE was demonstrating to take the fossil out of the rock.

- Inspecting fossil.

- Mr. C. M. LEE and Raymond Chan were climbing on the slippery rock to the other side of the cliff

- Mr. P. S. Lau was inspecting the rock at Xichongkou.