(**Report:** this report on a vulcanokarst in Cheju Island has been issued from Yonhap Press in Korea during late 70s. The report of the lava cave named "manjang gul" is introduced in terms of a commercial view of the vulcanospeleologic features in Korea)

Cheju-do's Manjanggul, the world's Longest Lava Cave

Tourists visiting Korea's resort island of Cheju-do often hear the legend of how the founders of the island's three original clans emerged from holes in the ground. They can even visit the site where three depressions remain in the ground -- one each for the Ko, Yang and Pu families.

It is perhaps fitting, then, that it was a Mr.Pu whose descent into a hole on Cheju-do led to one of the most remarkable recent finds in the field of speleology, the study and exploration of caves.

Back in 1964, Mr. Pu Chong-Hyu went exploring deep in a lava cave local residents had long known existed; he discovered a main passageway that has since proven to measure 8,928 meters in length -- the third longest in the world (after the 11,122-meter Laviathan Cave in Kenya and tje 9,994-meter Kazumura Cave in the United States).

The cave has become known as Manjanggul ("10,000-Long-Cave"), and has become a major tourist attraction on the eastern outskirts of Cheju City, capital of Cheju Province. While only one kilometer of its length is open to the public so far, explorers have actually found 23 lava caves in the system, with a combined length of 13,422 meters, not counting scores of smaller caves less than 100 meters long. That makes Manjanggul over 2,000 meters longer than the Single Lava System in U.S. state of Washington, previously recongized as the world's longest lava cave.

The first scientific survey of Manjanggul was

not made until 1977, 13 years after Mr. Pu made his expolratory descent and several years after had already become a local tourist attraction. The 1977 survey, like a second fallow-up study done last January, was conducted by a joint Korean-Japanese speleological team.

Both surveys were directed by Prof. Hong Shi-Hwan of Seoul's Konkuk University, who also heads the executive committee of the Speleological Society of Korea. Despite having documented what he now calls the world's longest lava cave, Prof. Hong says, "The value of a lava cave lies not in its length or height, but in what it contains."

As an example, he cites the 25-meter-high chamber at one point in the main cave (incidentally the highest in the world). There one can see the markings of five lava strata, indicating that molten streams flowed through the cave at least five times -- a spectacle rare in the world's other volcanic caves.

Visible between the lava strata is an 11-meter-thick rock formation containing igneous debris, volcanic ash, remnants of tree trunks and traces of other plants, all indicating that an interval of several hundred years of more passed between volcanic eruptions, Prof. Hong explains.

He describes how the lava caves were originally formed: "Rivers of molten rock gushed forth from deep inside the earth, flowing over the ground. Even as the surface of the lava flow cooled, however, forming a hard crust, the liquid rock continued to flow within, forming many large chambers. The hollw tubes which remained became the lava caves.

"On Cheju-do, the process began while the island was still linked to the Japanese archipelago. Volcanic eruptions continued for several hundred years, perhaps as many as 16 separate times. They formed what is now Mt. Halla, and created the long cave system meandering over the northeastern part of the

island, exposed to the air at some places, caved in at others."

In addition to the lava strata, Prof. Hong points out as another unique aspect of Manjanggul what he describes as the only large lava column in the world. Standing 7.6 meters high and measuring five meters in circumference, it is a huge basalt pillar formed 1.5 million to 2.5 million years ago, when molten lava poured down through the weakened ceiling of an existing lava cave, then cooled and hardened.

The interior of the main cave is also studded with many lava stalactites and stalagmites, shaped like berries, cones or poles, the longest measuring 77 centimeters.

Other interior ornaments include 16 lava "balls" and 15 lava "bridges."

Prof. Hong explains that the lava balls are huge basaltic rocks which dropped from the cave's ceiling, and were carried along with the

lava before coming to rest downstream.
The lava bridges, connecting opposite walls of the cave, are remnants of early caves' ceilings nearly totally washed away by later lava flows.

"Lava balls, lava bridges and lava stalactites and stalagmites are rarely found in many other volcanic caves around the world; they are what makes Manjanggul so spectacular and valuable from a scientific standpoint," Prof. Hong says.

There are about 500 known lava caves around the world, but in the Orient they have only been discovered in Korea and Japan. Japan has shown great interest in the exploration of Manjanggul; an NHK television crew videotaped the most spectacular parts of the system for a program which was aired in February.

So far, no Korean TV network has given the cave any such publicity, a situation which Prof. Hong regrets. He feels strongly that those parts of the cave with the greatest scientific value should be designated natural monuments, to ensure their protection and preservation.

At the same time, the cave system could be developed into more of an international tourism resource, in line with government plans for the rest of Cheju-do. At present, after all, the general public can only see about one tenth of even the main cave; there are many treasures still hidden in "spectacular" Manjanggul. (Yonhap)