

# A Study of Distribution of Cave in South Korea

Shi Hwan, Hong

There are some 1,000 natural caves in Korea. Most caves on the mainland are made of limestone, whereas most of the caves on Cheju Island are volcanic in origin. The caves on Cheju, in particular, are internally renowned for their huge size and scientific value. By contrast, the caves on the mainland are not as big, but their unique shapes and formations still attract the attention of international speleologists.

Korea's caves were first opened to the public in the 1970s. Their value to both scientific and tourism pursuits has become known to the world through joint investigations by Korean researchers and speleologists from the United States, Australia, China and Japan.

Many of the lava caves on Cheju are outstanding in terms of their dimensions and geological formations. For example, the Pillemot Cave has the longest discovered lava chamber in the world, while Manjanggal boasts the greatest number of formations. Within the Pillemot Cave is the world's tallest silica rod, measuring 28 centimeters in height, as well as a gigantic round lava mass, which is 25 meters high, 7 meters long and 5.2 meters wide. The Manjanggal Cave, on the other hand, features the greatest number of geological formations: a large lava pillar 7.8 meters high; 15 lava bridges, including one with a triple deck; and 21 round lava masses.

Shi Hwan, Hong

In comparison, limestone caves are more moderate in size but possess unique geomorphological features. They offer beautiful formations such as stalactites, stalagmites, pillars and through secondary geological activity.

To date, only nine limestone caves and two lava caves have been developed as tourist attractions in Korea. The other caves remain undeveloped.

## **Major Tourist Caves**

The Manjanggul and Kimnyongsa Caves, located in the northeast section of Cheju, are both lava caves that have been designated natural monuments by the government. Manjanggul's central chamber, with a length of 8,928 meters, average height of 10 meters, and average width of 15 meters, is the seventh largest in the world. It is also home to the world's largest lava pillar, measuring 7.8 meters in height, and has more geological formations than any other known caves, including, in addition to the lava pillar, 15 large lava bridges and 21 lava balls. On the walls of the cave are picturesque linear gas designs and gas scaraps created by gas streams. Gas balls about 10 centimeters in diameter hang down from the ceiling, and there is evidence of a secondary lava flow on the floor. The neighboring Kimngsa Cave is the subject of a local. According to the tale, a huge snake lived in the cavern, and to keep it happy the local villagers would sacrifice a virgin at certain times of the year. Songsanp'ŏ, the home of Ilch'ulbong (Sunrise Mountain), and Hamdok Beach are nearby attractions that enhance the region's popularity as a favorite among tourists.

In the northwest part of Cheju is Hyopchaegul. Located in Hallim Park, this

nationally designated natural monument comprises three caves: Hyopchaegul, Ssangyonggul and Hwanggungul. The combined length of this cave system is approximately 500 meters. Though they are lava caves, the three have some features generally associated with limestone caves, such as stalactites and stalagmites. These secondary geological formations are the result of calcareous substances, produced through the seepage of sand from the ground above the caves, which gradually permeated the cave ceilings. Hwanggungul, which is yet to be opened to the general public, is regarded as one of the most splendid caves in Korea.

The first limestone cave in Korea to be developed for tourism, Songnyugul is a natural monument located at the foot of Sonyusan Mountain, which towers over the Wangpichon River in Ulchin, Kyongsangbuk-do province. The cave has nine chambers and a 200-square-meter lake and is rich in gigantic stalactites, stalagmites, and pillars that make for magnificent scenery. Its high humidity and the eerie dark color of its walls, characteristic of limestone created during the Archeozoic Era, are its only drawbacks in terms of tourist potential.

The Tanyang area of Ch'ungch'ong-buk-do province is well known for its many caves, including Kosudonggul, Ondalgul, Nodonggul and Chondonggul, Ondalgul, Nodonggul and Chondong-donggul. A natural monument, Kosudonggul is the best sightseeing cave in Korea. A limestone cave, it has three levels and an overall length of cave topographies resulting from water erosion such as potholes, eroded plateaus, ceiling channel and gigantic flowstone walls, stalactites, stalagmites, and shield stalactites. In fact, it can be regarded as an exhibition hall of geological formations typical of limestone caves. Inside the entrance to the cave are some paleolithic stoneware relics, which indicate that the area relics, which indicate that

the area relics, which indicate that the area was inhabited by people during prehistoric times. As some neighboring caves have also been developed for tourism, this region is excellent for natural study.

Ondalgul, a natural monument, was recently developed and opened to the public. Legend has it that Ondal, a famous general of the Koguryo Kingdom (37 B.C.-A.D. 668), trained himself here for his future career. Nearby is Ondalsong, a mountain fortress, which attracts visitors to the area. The dark of the formations, which tourists might find peculiar, is the cave's only shortcoming. Being located along the namhan-gang River, the cave will flood in parts when the river overflows its banks.

To get to the spacious chamber inside the limestone Nodong Cave, a natural monument, one has to enter through a passage at the top of Mt. Wolch'ulsan. The cave features beautiful stalagmites. Near the entrance, one can see the fossilized bones of animals that fell into the cave.

Even though it is a relatively short cave, 320 meters in length, the Ch'ondonggul Cave, Ch'ungch'ongbuk-do Provincial Monument NO. 19, provides such a diverse variety of secondary geological formations that speleological formations that speleologists have dubbed it a cave laboratory. The tray-shaped deposits of floating calcite, in particular, are formations rarely found in other caves.

Kosshidonggul in Yongwol and Hwaamgul in Chongson are the best-known caves in Kangwon-do. Located at the foot of a cliff along the Namhan-gang River, the entrance to Kosshi-donggul can only be reached by boat, making it the most exciting cave to explore. According to legend, the cave was named Kosshidonggul, or Ko's cove, because a family named Ko took refuge there during the Japanese invasion of 1592. It is also said that the cave was used as a site for

Koryojang, the ancient custom of burying old people alive that was practiced during the Koryo Dynasty (918-1392). Over 2 kilometers in total length, it is a relatively level cave with numerous stalamites and other secondary geological formations. In addition, the cave includes a set of stalactites and stalagmites known as the Twelve Wizards, and a rock shelf called Ojakgyo (Bridge of Crows and Magpies).

Hwaamgul Cave, a Kangwon-do provincial monument located in Chongson, was discovered during the digging of a gold mine at the end of the 18th century. It has two major chambers. The area first developed is centered around a circular chamber with a height of 30 to 40 meters and a diameter of over 100 meters. Inside the chamber is a spectacular flowstone wall, which, at 22 meters, is the tallest in Korea. Also inside the cave are a huge stalagmite and pillar, which are nicknamed the guardians of the cave because of their shape.

Other famous caves for sightseeing in Kangwon-do include Chon-gokdong-gul, Yongyongdonggul and Hwanson-gul along the east coast. The interior of Chon-gokdonggul, a cave located in central Tonghae, is covered with muddy water due to the high concentration of dolomite on the soil layer above the cave. However, there is an abundance of secondary geological formations, including such rare features as channels and pendants.

Hwanson-gul, a natural monument located in the city of Samch'ok, has a huge chamber of over 2,000 square meters located just 150 meters from the entrance. Though lacking in magnificent geological formations, the calming sounds of its waterfalls and streams create a solemn atmosphere.

Yongyongdonggul, a provincial monument in Taebaek City, is another chamber cave. Because of its relatively high elevation, it has served as a refuge for centuries.

Shi Hwan, Hong

Inside the cave is an altar to the Mountain Spirit, a shaman god. There is also a lake inside the cave where freshwater shrimp live.

## **Other Distinctive Caves**

In addition to the already mentioned caves, there are in Korea with unique and distinctive features.

The Pillemot Cave on Cheju Island, Natural monument No. 342, is 11,749 meters long, making it the longest single lava cave in the country. Pillemot is also known as the Labyrinth Cave because of its complicated passage-ways. With a total length of 4,674 meters, Susan-gul is the world's seventh longest cave; it features a 230-meter-long lava bridge. The 2,980-meter-long Soch'on-gul is world-renowned for its 240-meter-long tube-within-a-tube and the peculiar coffin phenomenon, which occurs inside the cave.

Kwanumgul and Ch'odanggul, both in Samch'ok, Kangwon-do, are also notable. Kwanumgul, a nationally designated natural monument, is considered the most beautiful limestone cave in Korea; it includes four waterfalls and several streams. Because many secondary geological formations and streams, the cave is closed to the public to protect its natural environment.

Ch'odanggul is estimated to be about 4 kilometers long. Not only is the entrance to the cave located 15 meters vertically down from a mountain crest, but the passageway is very precipitous. The cave has been designated a scientific preservation area because a variety of seaweed flourishes in its stream.