

Environmental Characteristics of Ondal Cave(I)

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Abstract : To find out the natural environmental characteristics of Ondal Cave, temperature, humidity, wind speed and water temperature have been investigated. When compared to other caves, in sum, Ondal Cave has shown no significant difference in terms of natural environment. In particular, Ondal Cave was higher than other limestone caves by 1–2°C in terms of water temperature due to high inflow of river water nearby.

Key Words : Ondal cave, environmental characteristics

I. Introduction

A cave is a natural hole which is formed under the ground. Unlikely the ground environment, its stratum has been formed since early times and exists under the ground as it is. Thereby the cave is a site that we can investigate the structure and array state of the geology in itself.

To find out the natural environmental characteristics of Ondal Cave, temperature, humidity, wind speed and water temperature have been investigated.

II. Result and Discussion

From the spot at 50-60m distance from the mouth of the cave, temperature stayed constant until the end of the cave. In terms of humidity, 40-60% was kept at the mouth of the cave while it gradually increased inside the cave. From the spot at 100-150m distance from the mouth, the humidity was maintained constant (over 80%) with no significant fluctuations. In terms of wind speed (m/s), a slightly high level has been detected at the mouth of the cave due to air current from the outside. From the spot at about 100m distance from the mouth, it was kept constant at 4-5m/s. In terms of water temperature, it has ranged from 12 to 16°C. Summer was higher than winter by 2-3°C. The more far from the entrance, the less fluctuation in water temperature.

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Photo 1. Ondal cave



Photo 2. temperature measurement

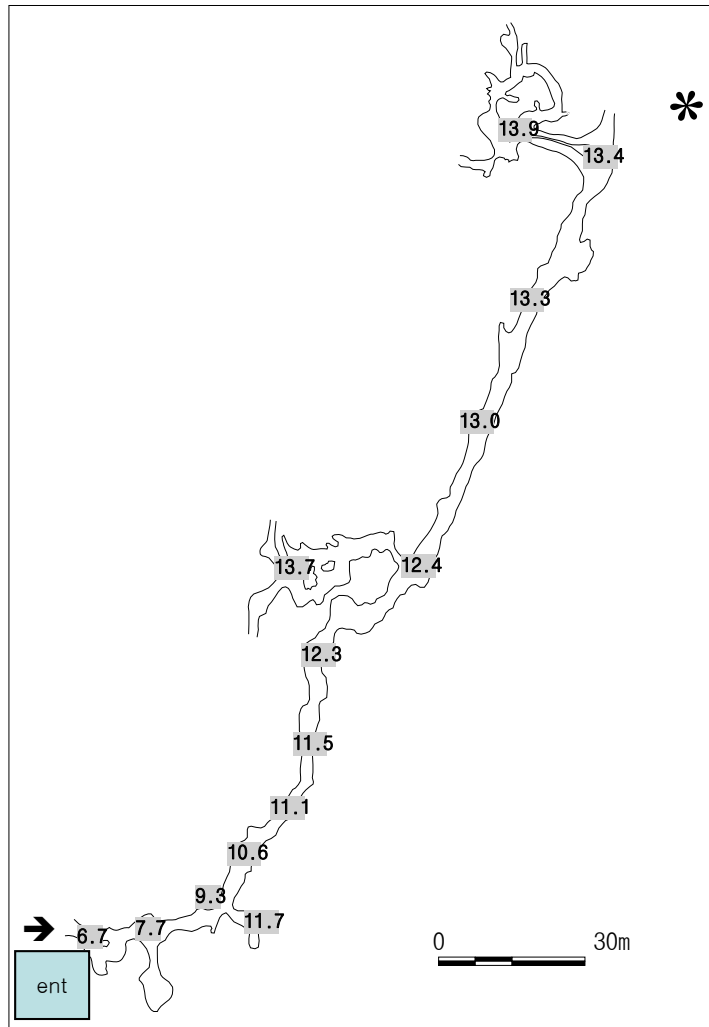


Fig 1. temperature in Ondal cave

III. Conclusion

(1) To preserve the cave's environment and continuously grow speleothem, that is, grow the cave's inside, regular artificial water spraying on the ground surface of the cave is required.

(2) Development for opening must focus on keeping the environment of caves as it is. Therefore, the peripheral or internal environment of caves must be not damaged by excessive works of entrances and serviceable facilities.

(3) To protect and preserve the ecology of the ground surface, calcic rock soil must be preserved. That is to say, we must ensure calcic soil strata and regularly rotate terrain by protecting vegetation and terrain on the ground.

(4) Education to inform tourists of the importance of cave sediments in advance is required. For this, proper guidebooks etc. must be distributed.

(5) Tourists must be prohibited from carrying anything which may spoil or contaminate the inside of cave. For this, an article depository must be separately

prepared. In particular, it is because articles such as sticks and umbrellas become main factors that can damage cave sediments.

(6) All potential places of soil collapse or rock dropping in the cave must equip any special preventive measure. Especially, the hazard factor must be removed in advance when the ground's vibration is expected.

When compared to other caves, in sum, Ondal Cave has shown no significant difference in terms of natural environment. In particular, Ondal Cave was higher than other limestone caves by 1-2°C in terms of water temperature due to high inflow of river water nearby.

Reference

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