

Welded tuff caves in Kyushu area, Japan

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Welded tuff caves, considered to be one of the volcanic caves, are not widely known yet. The only report submitted so far states that those welded tuff caves were created by water erosion.

It was reported in the 9th International Congress on Speleology held in 1986 that there was a welded tuff caves in Mt. Paektu, located on the border between the Democratic People's Republic of Korea and People's Republic of China.

Mt. Paektu erupted around 900 BC and the tremendous volume of mudflow, which was flowed into Chinese areas, eventually annihilated Pal Hae State.

In Japan, welded tuff caves have been found only in south western parts of Kyushu.

A large amount of volcanic mud flowed into the central part of Kyushu when Mt. Aso erupted 33,000 years ago.

Aira Volcano which has a large caldera on the northern part of Kagoshima Bay and Ata Volcano which erupted 22,000 years ago also resulted in a large amount of volcanic mudflow, covering the southern parts of Kyushu.

We have found 21 welded tuff caves in these areas so far.

This spring, we investigated 14 welded tuff caves and discovered that they were created by gas like lava caves, not by water erosion.

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日本九州地方の溶結凝灰岩洞窟

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火山洞窟の種類の一つに溶結凝灰岩洞窟があるが、余り報告されていない。今迄は溶結凝灰岩洞窟の成因は水の浸食によつて出来たとする報告しか無かつた。

1986年の 9th International Congress on Speleology で朝鮮人民共和国と中国の国境にある白頭山に凝灰岩洞窟があることが報告された。白頭山は 900 DC 頃大噴火し大量の泥流を中国側に噴出し渤海国を滅亡させた。

日本では南西の九州地方にのみ存在している。阿蘇火山が 33,000 年前に泥流噴火した時に広く九州中部を覆い、また、鹿児島湾北部に大カルデラをもつ蛤良火山が 22,000 年前に、鹿児島湾南部に阿多火山が泥流を噴火し九州南部を厚く覆つた。これらの中に22の溶結凝灰岩洞窟が見付かっている。

今年春、これらの内 14 を調査したが、水の浸食によつて出来たものでなく、溶岩洞窟と同様にガスが主因となつて出来たと考えられるので報告する。

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