Topic Page: cave

Definition: **cave** from *Philip's Encyclopedia*

Natural underground cavity. There are several kinds, including coastal caves, formed by wave erosion, ice caves, formed in glaciers, and lava caves. The largest caves are formed in carbonate rocks such as limestone.

Image from: **Source: © Gianni Dagli Orti/CORBIS.** in *Encyclopedia of Anthropology*

Summary Article: **cave**
From *The Dictionary of Physical Geography*

A natural hole or fissure in a rock, large enough for a human to enter. Although caves can be found in any type of rock, they are most common in limestone regions and are formed by solutional processes of joint enlargement. Caves can be either horizontal or vertical in general form; the latter are usually termed potholes. Those produced by solutional processes are normally initiated (i.e. by joint enlargement) in the saturated or phreatic zone. Lowering of the water table allows normal stream or vadose conditions to cut canyons in the more circular phreatic cave tubes. Thus, compound cave cross-sections can result; in this specific case a keyhole-shaped passage is produced. (Indeed, the 20 km cave Agen Allwedd in South Wales is named from the Welsh: Keyhole Cave.) Solutional processes alone do not account for all limestone cave systems; often, when the water table lowers, the overburden of rock, now no longer supported by a water-filled cavity, collapses, producing extensive boulder falls in cave passages.

The general pattern of a cave system depends not only on the processes that have led to its formation, but also on the regional jointing, folding and faulting. Caves develop along lines of weakness, and the structural geology of the area will dictate the plan and depth of a cave almost as much as fluctuations in the water table. Solutional caves can also form in rock salt, although such cavities usually form as isolated chambers rather than integrated cave passage networks. Ice, too, can provide solutional cave systems; some systems can be very long lasting (Bull, 1983).

Although caves can also be produced by tectonic activity (which is regularly referred to in textbooks as a viable mechanism of cave formation), in practice they are few and far between. They form as cavities on the limbs and crests of tightly folded rocks, but normally only very small recesses are formed, never long cave systems.

The largest of the cave systems formed in non-karstic rocks (pseudokarst) are found in lava. Well-documented, long cave systems exist in Hawaiian lava flows (Wood, 1976), sometimes exceeding 10 km in passage length. They are not, of course, the results of solutional processes, but rather are products of heat loss at the edges of lava flows, with corresponding continual flowing of molten lava in the core of the flow. Repeated eruptions utilize the same passages to transport their lava along these gently dipping tubes, perpetuating the lava cave system.

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Peter A Bull
University of Oxford

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