Devil’s Marbles
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Devil’s Marbles is one of the most famous places in the northern territory of Australia. The Marbles are a collection of large round-shaped red granite boulders. These vary in size from 50 cm to six metres. Most of the time the devil’s marbles crack and erode and are considered an ever-changing phenomenon of the landscape.

The local people of Australia call the region ‘Karlu Karlu’ which literally means round boulders. However, according to geologists, these boulders were formed deep inside the earth approximately 1.7 billion years ago. Later, erosion led to different types of features over the surface of marbles.

The science behind these round boulders or devil’s marbles is pretty surprising. The Devil’s Marble is formed from the molten rock that upsurged which then later cooled and solidified beneath the sandstone layer and ultimately ended into graphite. The hardening granite stone caused

1. 7 billion years ago
Sandstone
Granite

1. Granite cracks because of less pressure (Mechanical weathering)

2. Water causes granite decay (chemical weathering)

3. Boulders are exposed because of erosion;
weathering still goes on

Different events showing the formation of Devil’s Marbles (Image credit: Wikipedia)
horizontal and vertical breaks making blocks of rectangular shapes. After some time water penetrated the splits breaking the sandstone, and afterwards the granite. Consequently, rounded granite boulders perched over one another and then separated into large blocks.

The marbles start forming when the blocks come in contact with water and the surface of the block begins to decay in the presence of water. Each individual block is surrounded by a layer of loose material. When the block occupies the surface entirely then this loose material gets nibbled away by water and wind. The shape and roundness of the granite block are due to physical and chemical weathering. These chemical processes make the surface broaden and result in formation of thin layers of rocks. The process is collectively known as exfoliation. These processes are useful for areas that have edges.

Due to extreme temperature differences, the round boulders are affected more deeply in regions where the reserve (Devil’s Marble) is located. The surface of rock consistently expands and contracts due to daily temperature fluctuations and chemical weathering. In the presence of the sun’s heat, the thin outer skin of the blocks with minerals in them expands slightly and in the night they contract slowly. Then the outer skin falls off giving way to round boulders looking like peeled onions. These two processes are together called spheroidal or onionskin weathering.

**Interesting Facts about Devil’s Marbles**

- The magma of Devil’s marble first blows up from nearby volcanoes and then it reaches its final point of destination, where it dries up quickly and becomes granite. Over time they become separate rocks.
- Law of gravity makes the rocks fall off.
- Granite was firstly formed deep inside the earth and then it got converted into magma.
- The round boulders are completely different from each other and spread throughout the vast and arid desert land.
- The rocks of Devil’s marbles continuously glow and change their colour, from pink to bright red during sunrise and sunset.
- The marbles are a cluster of hairs, spread on the ground all over the place (Devil).

*Contributed by Ms Shivani, Science Reporter, CSIR-NISCAIR, New Delhi*