



## Agates

### Colors from igneous geological processes of the earth

Daniele Torcellini

Agates are semiprecious silica minerals. Rocks composed of microcrystalline quartz chalcedony. The most recognizable features of these stones are the crystals arranged in concentric bands. They contain microscopic fibers and inclusions of various iron oxides that give their stained or layered, colored appearance. The banding is often reminiscent of the concentric rings of a tree. The internal bands can be translucent or opaque and of a variety of color intensities.

Most agates occur in cavities in eruptive rocks or ancient lavas. These agates have a banded structure, successive layers being approximately parallel to the sides of the cavity. It is probable that they have been formed as follows. During cooling of the lava, steam and other gases form bubbles. The bubbles overtaken by solidification are frozen in, forming cavities. Long after the rock has solidified, water – carrying silica in solution, probably as alkali silicate – penetrates into the bubble and coagulates to a silica gel. Soluble components of the iron-bearing rock diffuse into the silica gel and produce the regular layers of iron hydroxide. Finally the whole mass gradually hardens with loss of water and crystallization of much of the silica as quartz or chert. During crystallization, the coloured bands are not disturbed. They are formed as a part of the earth's geologic processes.

The wonderful color patterns and banding make these translucent gemstones very unique. Agates can have many distinctive styles and patterns. Even if these fascinating stones can be found in all parts of the world, each Agate is unique in its own habit, with no two Agates being the same.

Agate is one of the most common materials used in the art of hardstone carving. The agate-working industry grew up centuries ago in the Idar-Oberstein district of Germany, where agates were abundant. Agates and Jasper were historically found in the Idar-Oberstein region, and cut and polished by local craftsman. With the discovery of the enormous Agate deposits in Rio Grande do Sul, Brazil in the 1800's, the new material was shipped to Idar-Oberstein for cutting and polishing.

The Italian, New York based art critic and curator Massimiliano Gioni, in his exhibition "Palazzo Enciclopedico" during the 54th Biennial of Art, Venice 2013, exposed the massive collection of stones, mainly composed by agates, of the famous French writer and sociologist Roger Caillois. Caillois, who wanted to join together research and poetry, was particularly fascinated by the sense of sacred in human life, by magical processes, by cosmology, and by stories that anthropologists were bringing back from the four quarters of the globe. Pebbles and rocks he collected look like nothing much at first but can open up wonders under contemplation. In his book dedicated to stones, he wrote: "They provide moreover, taken on the spot and at a certain instant of its development, an irreversible cut made into the fabric of the universe. Like fossil imprints, this mark, this trace, is not only an effigy, but the thing itself stabilized by a miracle, which attests to itself and to the hidden laws of our shared formation where the whole of nature was borne along". The collection of Caillois is currently preserved in the Museum of National History in Paris.

DCCAC offers unique opportunity to develop artistic projects which would explore the fascinating world of Agates in a contemporary way. DCCAC is very pleased to make available its rich and selected stocks of this astonishing material and to support fruitful relationships between contemporary artists and the few existing artisans which still handling it.

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