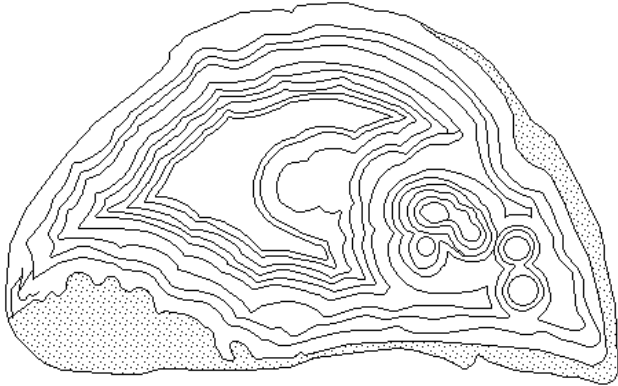


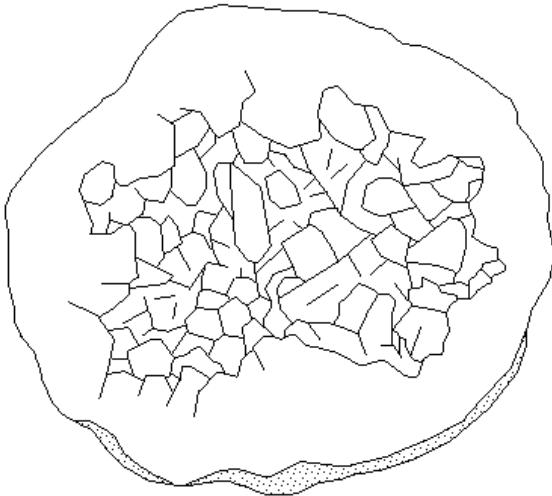
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## Agates, Geodes, and Septarian Nodules

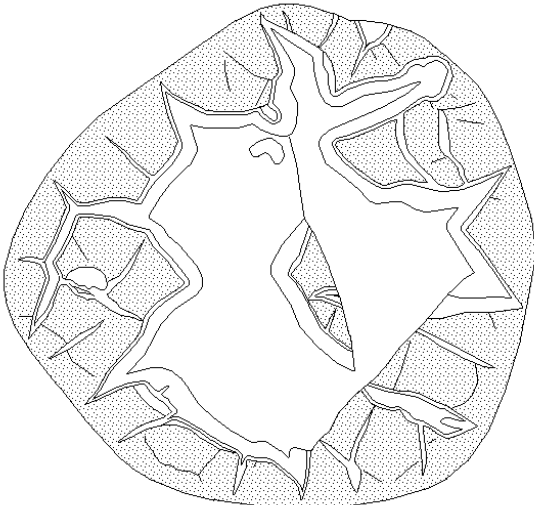
Agates, geodes, and septarian nodules (“thunder eggs”) are all similar in appearance and composition, but they form in different ways. There is generally a lot of overlap in the terms — an agate may have crystals in the center, geodes can have stripes of color, and septarian nodules usually have both stripes and crystals.



**Agates** usually form in hollow “bubbles” in volcanic rock. As water rinses through the bubble, it leaves layers of minerals behind, usually chalcedony (a form of quartz). Every time this occurs a new stripe is laid down, and chemical impurities in the mineral cause the different colors.



**Geodes** form in much the same way, but usually in softer rock such as limestone. The outer shell is chalcedony, but the inside is usually lined with quartz (or other) crystals which grow pointing in towards the center of the geode. The color of the interior crystals (and any fluorescence) is caused by mineral impurities.



**Septarian Nodules** are usually associated with ancient seas, where “mud-ball” concretions formed and gradually solidified into stone. You can usually find an entry point in these nodules where the pattern touches the outside edge. This is where water came in, leaving the layers of stripes and crystals.