# Limewater

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## Observations

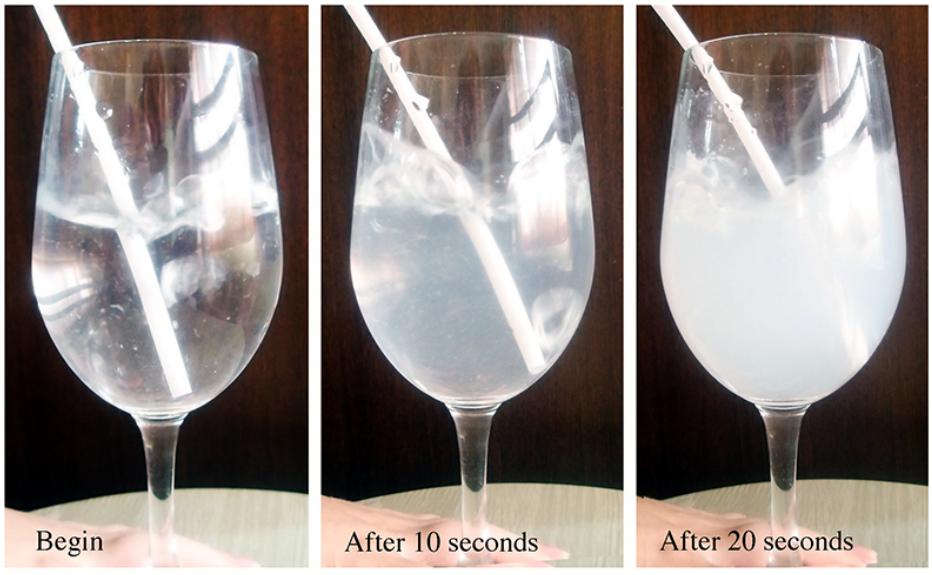
Shells ($CaCO_3$) have become soft and brittle in a charcoal fire.

The softened shells can be broken up with a spoon.

After 20 minutes in water the shells are turning to powder.
The water is warm: a chemical process is ongoing.

Next morning the shells have become a fine white powder: the water is cool: there is a crust of tiny crystals on the surface: and the inside of the glass under the water is cloudy.

The clear solution above the layer of powder is poured into a clean glass and exhaled air is gently bubbled through a straw.




The clear liquid on the left is a saturated solution of calcium hydroxide. As bubbles gently rise in the solution the carbon dioxide in the exhaled air combines with dissolved calcium hydroxide to form a suspension of calcium carbonate powder.

For more details see *Lime mortar* in the Chemistry index.