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*Pronamel Prevention! The Effect of Pronamel on Preventing Corrosion of Rock by Acid Rain*

This experiment was designed to see the effect of Pronamel toothpaste on preventing corrosion of rock material by acid rain. Acid rain is water vapor that has reacted with pollutants in the atmosphere, resulting in abnormally low pH in precipitation. Pronamel toothpaste has been said to protect teeth from acid corrosion due to acidic foods. The researcher hypothesized that the marble and limestone rock groups that did not contain toothpaste would be the most affected by the acidic solution, and that rock groups containing the toothpaste would be not be significantly protected from the acid because the Pronamel toothpaste forms a protective covering with enamel which rocks lack. The experiment began with samples of four different rock types. Toothpaste was applied to half of the rocks. The rocks were placed in glass pie pans and submerged in dilute sulfuric acid in which they were left for 22 hours before being removed, dried in a conventional oven and weighed. After removal, the pH of each solution exposed to the different rock samples was measured and recorded and the rock samples weighed. The solutions were then returned to the original pH simulating acid rain and the entire process was repeated four more times over a five day period. Based on the results, none of the rocks showed significant weight loss, making the hypothesis incorrect, although some unexpected results were discovered. The amount of pH changed differed significantly with the type of rock. If the experiment were to be continued in the future, the researcher would make the acid solution more acidic and expose the rocks over a longer period of time.