Who, What, Where, and Why?

by John Norton

Test Your Knowledge of Engineering History

By John W. Norton, Jr. The column of geotechnical and civil engineering achievements, and the heroes behind the triumphs, successes, and sometimes failures.

This issue's theme is the Geoenvironment. This time we have some dirt, a suicide, a philosopher, and philosophizing about suicide, which leads us to...the French! I hope you enjoy this issue's questions.

1. More than 2,200 years ago, this great philosopher wrote about erosion: "Many great deluges have taken place during the nine thousand years....and during all this time...., there has never been any considerable accumulation of the soil coming down from the mountains, as in other places,"

about the geohydraulic cycle, "....the land reaped the benefit of the annual rainfall, not as now losing the water which flows off the bare earth into the sea, but....receiving it into herself and treasuring it up in the close clay soil, it let off into the hollows the streams which it absorbed from the heights, providing everywhere abundant fountains and rivers....,"

and about harbor construction, "....from the sea they bored a canal of three hundred feet in width and one hundred feet in depth and fifty stadia in length.... which became a harbor, and leaving an opening sufficient to enable the largest vessels to find ingress...." One of this individual's pupils also discussed and advanced theories of groundwater behavior.

What is the name of this world famous philosopher and the book in which this material appeared, one of many he wrote?

2. The basic proctor soil-density test, developed by R. Proctor, provides a relationship between the water content and dry density of a soil for a given compactive effort applied to that soil. If you were placing soil for a landfill liner and were interested in minimizing the hydraulic conductivity of the soil, would you want to place the soil at optimum water content to achieve the densest soil, or would you want to place the soil at a water content generally higher or lower than optimum? Why?