THE SCOOP

The February Newsletter is OUT!!!

Scientist of the Month

William Hood

Scientist Birthday:

February 4th, 1846

Trivia about the scientist

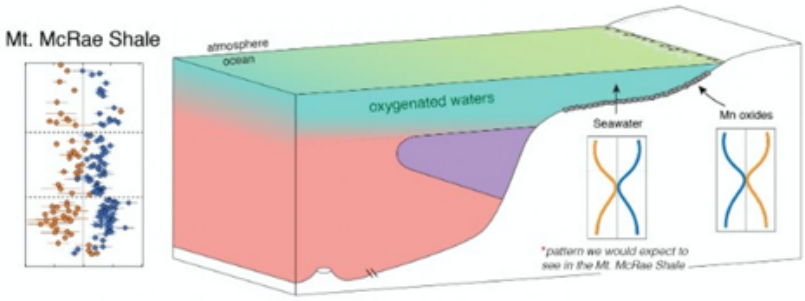
American civil engineer who invented California's Tehachapi Loop, an elegant 0.73-mile railroad spiral. Called one of the seven wonders of the railroad world, it is a National Historic Civil Engineering Landmark. It is part of 28 miles of railroad snaking through the Tehachapi Pass between San Francisco and Los Angeles.

Hood designed a remarkable series of horseshoe and S-curves to traverse the lofty peaks and ridges along the way. The spiral ascends at a 2-percent grade for an elevation of 77 feet. A train longer than 4,000 feet (about 85 cars) passes over itself as it travels around the loop.

Discovery in the month February, 2018:

2.7 Billion Year Old Rocks Provide Clues to Earth's "Great Oxidation Event:

The 2.5 billion-year-old Mt. McRae Shale from Western Australia was analyzed for thallium and molybdenum isotope compositions, revealing a pattern that indicates manganese oxide minerals were being buried over large regions of the ancient sea floor. For this burial to occur, O2 needed to have been present all the way down to the sea floor 2.5 billion-years-ago.



Oxygen in the form of the oxygen molecule (O2), produced by plants and vital for animals, is thankfully abundant in Earth's atmosphere and oceans. Researchers studying the history of O2 on Earth, however, know that it was relatively scarce for much of our planet's 4.6 billion-year existence.

So when, and in what environments, did O2 begin to build up on Earth?

He retired as chief engineer of the Southern Pacific Company. His career spanned 54 years (3 May 1867- 3 May 1921), in which time some 11,000 miles of track were laid.

By studying ancient rocks, researchers have determined that sometime between 2.5 and 2.3 billion years ago, Earth underwent what scientists call the "GOE". O2 first accumulated in Earth's atmosphere at this time and has been present ever since.

Through numerous studies in this field of research, however, evidence has emerged that there were minor amounts of O2 in small areas of Earth's ancient shallow oceans before the GOE. And in a study published recently in the journal Nature Geoscience, a research team led by scientists at Arizona State University has provided compelling evidence for significant ocean oxygenation before the GOE, on a larger scale and to greater depths than previously recognised.

For this research, Ostrander dissolved shale samples and separated elements of interest in a clean lab, then measured isotopic compositions on a mass spectrometer. This process was completed with the help of co-authors Sune Nielsen at Woods Hole Oceanographic Institution (Massachusetts); Jeremy Owens at Florida State University; Brian Kendall at the University of Waterloo (Ontario, Canada); scientists Gwyneth Gordon and Stephen Romaniello of ASU's School of Earth and Space Exploration; and Ariel Anbar of ASU's School of Earth and Space Exploration and School of Molecular Sciences. Data collection took over a year and utilized facilities at Woods Hole Oceanographic Institution, Florida State University and ASU.

Company of the month-

Rashtriya Chemicals and Fertilizers is a wholly owned by the Government of India.It is classified by the government as Mini Ratna-1 industry. The company was established on March 6, 1978, and produces a wide range of fertilizers and chemicals for domestic and export markets.RCF produces 20 industrial chemicals such as Methanol, Ammonium bicarbonate, Methyl Amine, Formic Acid, Dimethyl Formamide, among others that are used in industries including dyes, solvents, leather, pharmaceuticals and others.