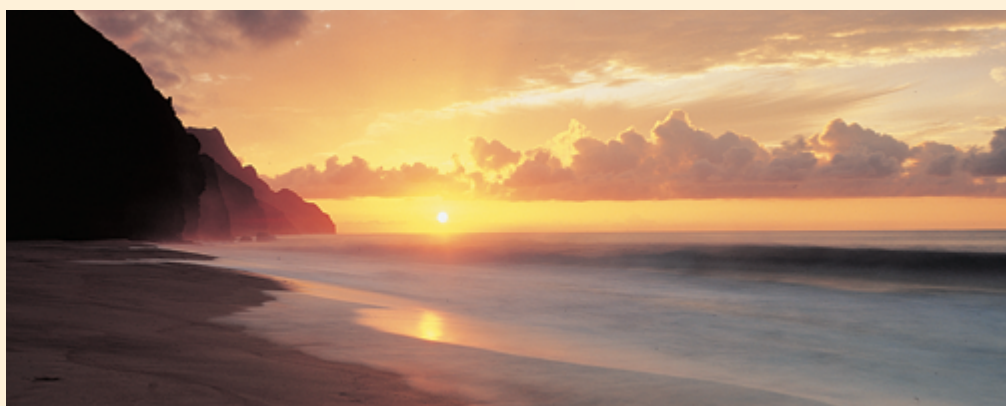


= 204. $T_i = 50$ $Zr = 90$ $? = 180$ is small in itself; but
 = 107 $V = 51$ $Nb = 44$ $T = 182$ and can only be attributed



◀ We can measure the difference between the atmospheric pressure on a mountaintop and the atmospheric pressure at sea level thanks to the work of Torricelli and Boyle.




volume of the trapped air was halved. He continued to add mercury until the total pressure on the trapped air was about 4 times that of the atmosphere. Noting that the air had been compressed to a volume about one-fourth of what it originally was, Boyle discovered the inverse relationship between air's pressure and volume.

A Long-Standing Contribution


Boyle went on to show that the relationship between air pressure and volume, $P \propto 1/V$ (at constant temperature), held not only when the gas was compressed but also when it was allowed to expand. Future investigators would show that the law is a principle that applies to gases in general. Along with the findings of other researchers, such as Jacques Charles, Joseph Gay-Lussac, and Amadeo Avogadro, Boyle's discovery led chemists to the famous ideal gas law, $PV = nRT$, which serves as a starting point in the study of chemistry today.

Questions

1. Why was it necessary for Boyle to seal one end of his J-tube?
2. What would have happened if Boyle had allowed the temperature of the trapped air sample to change as he added mercury to the tube?



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