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Chris Rorres* (crrorres@comcast.net). *The Law of the Lever: Archimedes vs. Mach.*

Over a century ago Ernst Mach, the famous Austrian physicist and philosopher of science, wrote a blistering criticism of Archimedes' celebrated proof of the Law of the Lever. Mach accused Archimedes of overusing his "Grecian mania for demonstration" and succeeding in his proof only "by the help of the very proposition he sought to prove". His attack drew the expected objections from many historians and philosophers of science who, in turn, accused Mach of not understanding the subtleties of Archimedes' proof. I will give my own interpretation of this controversy from a mathematician's point of view, concluding with my belief that, while Archimedes did indeed prove something, it can hardly be called a proof of the Law of the Lever. (Received December 27, 2014)