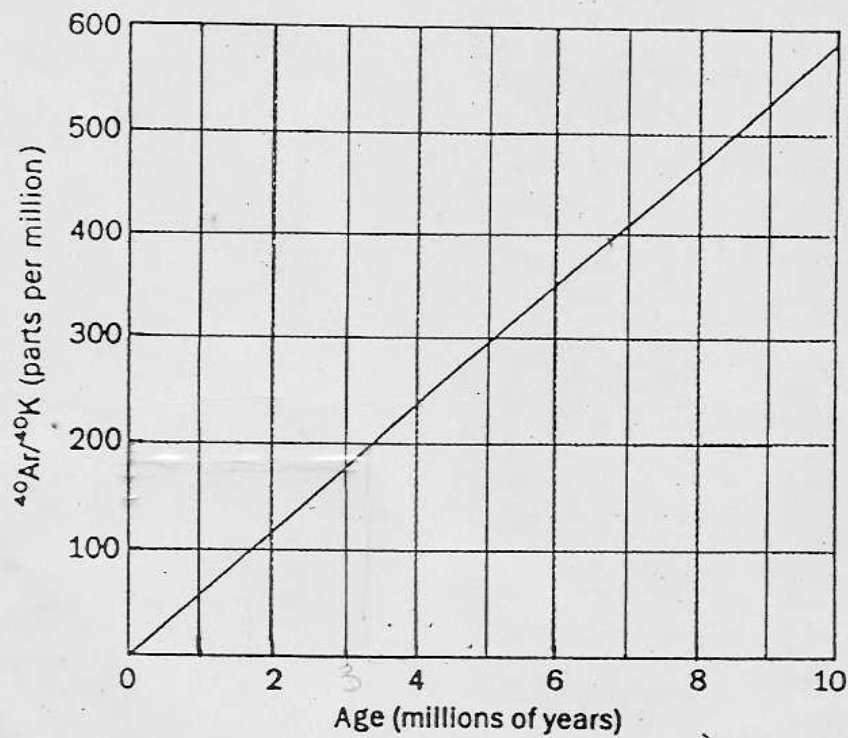


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After volcanic material cools,  $^{40}\text{Ar}$  accumulates through decay of  $^{40}\text{K}$ , changing the  $^{40}\text{Ar}/^{40}\text{K}$  ratio. Over short times, the change in ratio is nearly linear because of the long half-life of  $^{40}\text{K}$  (1250 million years).