to a temperature of 300° C., or more. Recent writers on this type of dating state that all original argon is lost, when such heating of igneous and metamorphic rocks occurs. Thus when the amount of argon present is measured, only the amount produced in the rocks since they were last heated can be detected. This characteristic is often listed as a disadvantage, because this means that potassium-argon dates can give only the length of time since the rock mass was last cooled to a tempeerature below 300° C. However, this feature is an advantage for those who are interested in determining how long it has been since igneous or metamorphic rock masses were in a heated condition.

Perhaps we should also mention that Dalrymple, Moore, and others recently discovered that some of the earlier potassium-argon dates obtained for igneous rocks which had been formed in deep water were very incorrect (much too old). Their research showed that whenever lava is erupted into a deep-water environment, the hydrostatic pressure, and the rapid cooling caused by the cold water, cause excess Ar^{40} to be "frozen" into the outer parts of the lava mass. Earlier, when this principle was not known, numerous samples of marine volcanic basalt were wrongly dated. However, now that the scientific world has been alerted to this principle, only the potassium-argon dates from continental formations and from samples taken from the interior of submarine masses of rock are considered reliable. 20