



From mythology to science: the development of scientific hydrological concepts in the Greek antiquity

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While *hydrology* is a Greek word (*υδρολογία*, from *υδωρ* = water and *λογος* = reason), it has not been in use in the classical literature but much later, during the Renaissance, in its Latin version, *hydrologia*. On the other hand, Greek natural philosophers created robust knowledge in related scientific areas, to which they gave names such as *meteorology* (*μετεωρολογία*, cf. Aristotle's "Meteorologica"), *climate* (*κλιμα*, *κλιματικός*, cf. Hipparchus, "Τῶν Αρατου και Ευδοξου Φαινomenῶν Εχῆγεσεῶν") and *hydraulics* (*υδραυλικη*, cf. Hero's of Alexandria "Pneumatica"). These terms are now in common use internationally. Within these areas, Greek natural philosophers laid the foundation of hydrological concepts and the hydrological cycle in its entirety. Knowledge development was brought about by search for technological solutions to practical problems, as well as by scientific curiosity to explain natural phenomena. While initial explanations of nature belong to the sphere of mythology, the rise of philosophy was accompanied by attempts to provide scientific descriptions of the phenomena. It appears that the first geophysical problem formulated in scientific terms was the explanation of the flood regime of the Nile, then regarded as a paradox because of the spectacular difference from the behaviour of rivers in Greece, i.e. the fact that Nile flooding occurs in summer when rainfall in Egypt is very low to non-existent. Revisiting the variety of attempted explanations for this 'paradox', from Homer's mythical view (archaic period) to Eratosthenes's correct scientific exegesis (Hellenistic period) we can trace out the evolution of science in the Greek antiquity.