

A presocratic cosmological proposal

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Abstract

Alcman is known as one of the greatest lyric poets of the ancient world. However, the publication of the Oxyrhynchus papyrus No. 2390 in 1957 caused a great deal of excitement. This papyrus, from the second century AD, contains parts of a comment written in prose, which implies that in one of his poems Alcman deals with a kind of a god-created cosmogony. That cosmogonical view, formulated by Alcman in the middle of the seventh century BC, describes much older considerations that resemble certain modern cosmological conjectures. In terms of the latter, the observable universe emerged out of a point singularity interior to a white hole which, due to the time symmetry of Einstein's field equations, can be considered as a time-reversed black hole.

Key words: *history, Alcman, cosmogony, cosmology*

1 INTRODUCTION

One of the most important Greek lyric poets of antiquity, who shaped 'choral' poetry in Sparta as a special literary form in the middle of the seventh century BC, was Alcman, son of Damas or Titarus (Voutierides, n.d.). Due to his incomparable art, Alcman held the first position in the Alexandrian canon. According to Athenaeus, "Alcman was the best of the erotic poets." (Skiadas, 1981). The name 'Alcman' is an adjustment to the Doric idiom of the Ionic name Alcmaeon, but it should not be confused with the Pythagorean Alcmaeon (c. 500 BC), son of Perithos from Kroton, the Greek colony in South Italy (Tsantsanoglou, 1973).

As Skiadas (ibid.) reports, according to *Suidae* (under the lemma 'Alcman'), the poet lived during the XXIVth Olympiad (672-668 BC) when Ardys was governor of Lydia, while according to the ecclesiastic writer, Eusebius, Alcman flourished around 659 BC. Similarly, in a fragment of the Oxyrhynchus Papyrus No. 2390 it is reported that Alcman mentions 'Leotythis', king of Sparta, by name (Harvey, 1967). We can assume that Alcman lived during the second half of the seventh century BC.

According to *Suidae* (A.P. 7, 709, Alexandros Aetolos), Alcman came from Greek Ionia (the city of Sardes, in Lydia) and then moved to Sparta. This view can be found in a memorandum in the Oxyrhynchus Papyrus No. 29 (P. Oxy. XXIX fr. 1, col III, 30 κ. ε. (=10 (α), 30 κ. ε. P.)) which states: "... then, the Lacedaemonians appointed Alcman, descending from Lydia, as a teacher [tutor] to the daughters and ephebes ..." However, this view may not hold, since the Oxyrhynchus Papyrus No. 2389 (P. Oxy. 2389, fr. 9 col. 1(=13(α), P. 11 κ. ε.)) states that "... it seems that Aristoteles and the rest were deceived and they thought him [Alcman] to be a Lydean ..." As for the disagreement concerning the birthplace of Alcman, Antiparus from Thessalonike (*Suidae*, A. P. 7, 18, 5) remarks:

There is a dispute between the two mainlands [cities-regions] whether [Alcman] descended from Lydia or Lacedaemona. Many [cities] are considered as the native country of the servants of poetry ...

Pausanias (III, 15, 2) certifies that at Servion, a region near Sparta and called 'Road', next to the altars of the Hippokontides and Hercules, a memorial in honour of Alcman existed until the second century BC.

2 THE POET'S WORK

Alcman's work (according to *Suidae*, ap. 158P) was classified by the Alexandrians into six or seven books and contained hymns, paeans, and partheniads (hymns sung by young virgins for worship purposes): "... he wrote six erotic poems and the Κολυμβώσεσ." The latter work probably constitutes an unknown seventh work of the poet (e.g. see Davison, 1961:35-38; Huxley, 1964). The language used by Alcman is mainly the Doric idiom of his time, mixed with elements from the Ionic and Aeolian idiom. Pausanias calls this language 'ἥκισταεὔωου' (i.e. least euphonic).

Only a few fragments have been found of the work of this great lyric poet (Campbell, 1967; Diehl, 1925). In 1855, the French Egyptologist Mariette discovered a tomb near the second great Pyramid¹ which contained a papyrus with 100 verses from one of Alcman's parthenian-hymns (in honour of Orthia (standing) Artemis). This fragment was published by Egger in 1863.

However, the big surprise came in 1957 with the publication of Oxyrhynchus Papyrus No. 2390, which dates to the second century AD (Lobel *et al.*, 1957). This papyrus contains parts of a comment written in prose, in which Alcman deals with a kind of theogonical cosmogony in one of his poems (Apicella, 1979; Penwill, 1974). The central part of this comment, presented in the following section, also contains 'lemmas' (i.e. short phrases) by Alcman himself.

2.1 The Text of the Comment

An English translation of the text contained in the Oxyrhynchus Papyrus No. 2390 follows (the original Greek text is given in Appendix I).

... since as matter started to settle, a kind of a pore [passage] was created, something like a beginning. So, Alcman says, the matter of all things was stirred and uncreated, then someone who arranged everything was born, then a pore was created and when this pore passed by, a bound [or end, τέκμωρ] followed. And the pore is the beginning, while the bound is like an end. When Thetis was born, these became the beginning and the end of everything and all things' nature is similar to the material of copper, while Thetis to that of the worker and the pore and the bound [τέκμωρ] similar to that of the beginning and the end.

... and third in the row comes darkness, as until then neither the Sun nor the Moon had been created, but matter was still formless. So they were created under ... the pore and the bound and the darkness. The day and the Moon and thirdly the darkness. The shining of the day was not dense but was assisted by [the shining] of the Sun, [since] before that there was only darkness and after these [this procedure] it discerned from it ...

3 DISCUSSION

According to the previous text, we can summarize Alcman's cosmogonic model as follows:

1. Initially, matter was stirred, formless, and invisible.
2. Then, within the space that was filled by this non-observable material (i.e. non-matter), someone who arranged everything was born (Thetis, Θέτις, whose name comes from the root of τιθέναι, θέσθαι, meaning 'to put' or 'set in order'), as a worker (Hofmann, 1950; Stamatakos, 1949). The involvement of Thetis, a sea goddess worshipped in Sparta, leads to the thought that we can probably identify the situation holding before the creation of the observable

universe with that of the primordial Ocean, which, according to Aristoteles was, together with Tethys, the father of the world:

... there are people who believe that the post ancient, the very first indeed, who thought about the gods long before the present time, set the same assumption about nature, since they wrote that Ocean and Tethys were the parents of the world and that the oath of the gods is water, what the poets call Styga, as whatever is the most ancient it is also the most respectful and the most respectful serves as oath ... (Metaphysics A' 3, 983 b 27).

The assumption that the Ocean was the father of the world denotes, according to Kirk *et al.* (1983), the existence of non-Greek cosmogonic considerations and reminds us of the Babylonian view, that the mainland emerged out of the primordial waters (from the Creation Epos – see Pritchard, 1969:60).

3. Then, in the space of non-matter, a pore (a narrow passage – see West, 1963) was created which served as the beginning. In other words, this narrow passage constituted an exit cord for the stirred, formless, and non-observable matter, from the space of the initial, perceivable non-existence to the perceivable space of the observable universe.
4. The creation of a bound (τέκμωρ) followed (Hofmann, 1950; Stamatakos, 1949), which was a leading mark inside the pore (West, 1963) or inside the stars (Vernant, 1970:38-39). Apparently, the τέκμωρ was the end of the situation which existed before the universe was perceivable by humans. This means that when the uncreated and formless matter passed through this bound it automatically became shaped and perceivable, as it could form perceivable objects like the Sun and the Moon. According to Kirk *et al.* (1983), τέκμωρ as a bound can probably be identified with the notion of infinity given by Anaximandros, who visited Sparta a generation later.
5. The pore and the bound coexisted with darkness as one set of discrete events. Of course, as it is implied by what follows, the whole system of pore-bound-darkness was lying exterior to the perceivable universe (*ibid.*). According to Page (1968: 6), the pore can probably be identified with Hesiodos' Chaos, in the sense of the darkness, but this interpretation is rejected by Kirk *et al.* (1983). In their view, the pore as a passage cannot be identified with Chaos or darkness, or the formless matter, but it should succeed them or act upon them.
6. After the bound (τέκμωρ), the day (probably the luminous part of it, hence the Sun), the Moon, and the darkness (probably the night, the non-luminous dark part of the day) were created.
7. The daylight (radiation) was not dense, but it was assisted by the Sun's radiation. At this point it is worth noting that the commentator denotes that the daylight (radiation) was 'assisted' by the Sun, meaning that the latter was not the only source of the light. This fact lead us to conclude that the day, at this point of the comment, is probably not identified with the luminous part of the solar day but rather with the modern, generalized notion of the radiation (i.e. with the concept of light).

4 CONCLUDING REMARKS

The aforementioned cosmogonic consideration was stated by Alcman in the mid-seventh century BC but describes much older views. Of course it is a mere coincidence that there is a similarity between Alcman's proposal and some current cosmological concepts, and no connection between the two should be inferred. According to modern cosmological hypotheses, the observable universe was born out of a point singularity interior to a white hole, which can be considered – due to the time symmetry of Einstein's equations – as a reversed-in-time black hole (Novikov and Frolov, 1989).

As early as the mid-1960s, it was conjectured that white holes constituted regions of the universe where the Big Bang took place (D'Inverno, 1992). Conceptually, Alcman's 'pore' can be identified with the Einstein-Rosen bridge (Ne'eman, 1965), the point singularity with the bound (τέκμωρ), and the antiparallel universe interior to which the bridge begins with the space of the uncreated, formless, and unperceivable matter.

However, as Einstein's equations determine the local but not the global geometry or topology of spacetime, the Einstein-Rosen bridge can be considered as connecting either two different universes or two different (asymptotically flat) regions of the same universe. It is possible to discard this latter option on physical grounds (see Ohanian, 1976:320), while the dynamics of the Einstein-Rosen bridge raises certain questions about a more general interpretation which still remain unanswered (Misner *et al.*, 1973:838-840).

The notion of a white hole results from the fact that the 'τέκμωρ', as a bound of the 'pore', is according to Alcman the region of an 'out of nowhere' manifestation of perceivable matter and of luminous energy as well, since the day has been born immediately hereafter.

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6 NOTES

- 1 In the region of the Nile's western bank was the city of Lower Egypt called Oxyrhynchus, capital of the county of Oxyrhynchus. Today, the village of Vachnasa lies near the ruins of the ancient city. When this Ptolemaic city was excavated, a large number of papyruses were found, the majority of which contain Greek texts. These papyruses, among the most important of which are Aristoteles' "Αθηναίων Πολιτεί", Sophocles' drama "Ιχνευταί", and Alcman's "Τα Παρθένια", are named after the name of the city, accompanied by a code number.

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APPENDIX I

.ν.[
 πάντων...[
 τις ἐκ δὲ τῶ π[τέ-
 κμωρ ἐγένετο τ[
 5 μο[.] ἐντεῦθεν ει.[
 πόρον ἀπὸ τῆς πορ.[...].[
 ὡς γὰρ ἤρξατο ἡ ὕλη κατασκευα[σθῆναι
 ἐγένετο πόρος τις οἶονεὶ ἀρχή· λ[έγει
 οὖν ὁ Ἄλκμᾶν τὴν ὕλην πάν[των τετα-
 10 ραγμένην καὶ ἀπόητον· εἶτα [γενέ-
 σθαι τινὰ φησιν τὸν κατασκευά[ζοντα
 πάντα, εἶτα γενέσθαι [πό]ρον, τοῦ [δὲ πό-
 ρου παρελθόντος ἐπακολουθῆ[σαι] τέ-
 κμωρ· καὶ ἔστιν ὁ μὲν πόρος οἶον ἀρχή, τὸ δὲ τέ-
 15 κμωρ οἶονεὶ τέλος. τῆς Θέτιδος γενο-
 μένης ἀρχή καὶ τέ[λ]ο[ς ταῦτ]α πάντων ἐ-
 γένε[τ]ο, καὶ τὰ μὲν πάντα [ὁμο]ίαν ἔχει
 τὴν φύσιν τῆι τοῦ χαλκοῦ ὕληι, ἡ δὲ
 Θέτις τ[ῆι] τοῦ τεχνίτου, ὁ δὲ πόρος καὶ τὸ τέ-
 20 κμωρ τῆι ἀρχῆι καὶ τῶι τέλει. πρέσγ[υς
 δὲ ἀντὶ τοῦ πρεσβύτης. καὶ τρίτος σκότος·
 διὰ τὸ μηδέπω μήτε ἥλιον μήτε σε-
 λ]ήνην γεγονέναι ἀλλ' ἔτι ἀδιάκριτ[ο]ν εἶναι
 τ]ῆν ὕλην· ἐγένοντο οὖν ὑπο[.]... πό-
 25 ρος καὶ τέκμωρ καὶ σκότ[ος]·[ἄμαρ
 τε καὶ σελάνα καὶ τρίτον σκότος· τας
 μαρμαρυγὰς· ἄμαρ οὐ ψιλῶς ἀλλὰ
 σὺν ἡλίωι· τὸ μὲν πρότερον ἦν σκότος μό-
 νον, μετὰ δὲ ταῦτα διακριθέ[ντο]ς αὐτοῦ