

The Problem with Being a Minor Deity: The Story of Eridanus¹

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This paper addresses the changing iconography of the southern constellation, Eridanus, which all classical astronomical sources describe as a river. The opinions of the earliest relevant author, Eudoxus, who wrote his astronomical treatise entitled *Phaenomena* some time during the first half of the fourth century BC, are known primarily through two later sources.² The first of these is an astronomical poem, also called *Phaenomena*, written by Aratus of Soli at the turn of the third century BC and generally considered to be a liberal versification of Eudoxus's lost work.³ The second is the much later and extremely critical commentary by Hipparchus (fl. 161–126 BC), who takes both Eudoxus and Aratus to task over what he considers to be their overwhelming incompetence in all matters astronomical.⁴ By extracting the references contained within these sources, one notes that Eudoxus called the constellation ποταμός ('the river')⁵ and visualized it as a curving, S-shape, composed of a number of very weak stars (Fig. 1). It begins in the north, as if emanating from the left foot of the constellation Orion (marked by the star we now recognize as β Orionis) and flows westward beneath the constellation of Cetus, the sea monster. It then changes its direction in a large bend that lies on the Tropic of Capricorn⁶ and continues towards the east, flowing in that direction, until 'there is only a little space left between the river and the steering oar of Argo, beneath Lepus, which contains some weak stars'.⁷ It then turns again, continuing southwestward, ending at the ever-invisible circle.⁸ It is most likely that Eudoxus saw the constellation ending

1. This paper has grown out of research carried out jointly with Elly Dekker. I would like to thank my colleague for her generosity in allowing me to publish some of our joint findings in this format.

2. The fragments of his lost works, *Phaenomena* and *Enoptron*, have been collected by F. Lasserre in *Die Fragmente des Eudoxus von Knidus*, Berlin, 1966.

3. The bibliography on both Aratus's original Greek poem and its numerous Latin translations is too extensive to cite here. The reader is directed to E. Maass, *Aratea*, Berlin, 1892; E. Maass, *Commentariorum in Aratum Reliquiae*, Berlin, 1898 (repr. 1958); J. Martin, *Histoire du texte des Phénomènes d'Aratos*, Paris, 1956 and to the two most recent annotated editions and translations of the text: Aratus, *Phaenomena*, ed. and English transl. Douglas Kidd, Cambridge, 1997 and Aratos, *Phénomènes*, ed. and French transl. J. Martin, Paris, 1998.

4. See Hipparchus, *In Arati et Eudoxi Phaenomena commentariorum in libri tres ...*, ed. and German transl. K. Manitius, Leipzig, 1894.

5. *Ibid.*, I, ii, 20, pp. 22–3.

6. *Ibid.*, I, x, 17, pp. 106–7.

7. *Ibid.*, I, viii, 6–7, pp. 76–7.

8. *Ibid.*, I, xi, 6, pp. 114–15. The location of Eudoxus's ever-invisible circle cannot be determined precisely. Hipparchus reports that Eudoxus mentions two values for the ratio of the longest to the

with the brightest star in the area, now known as θ Eridani, which then would have been at a declination of around 51°S and just visible above the horizon from Eudoxus's geographical latitude.

In his verse rendering of Eudoxus's work, Aratus repeats most of this information, though he does explicitly describe the river as 'winding' and specifically mentions the 'first bend' of the river – indicating that he visualizes it as having more than one bend.⁹ He is also the first source to offer a mythological identification for the river, calling it 'Eridanus' and referring to it as the 'river of many tears'.¹⁰ This reference to tears is an allusion to the fable of Phaeton, the son of Sol-Apollo, who crashed his father's fiery chariot into the earth, landing in a large river. In his poem, Aratus describes Eridanus as the 'remnant of a river' – but it is not clear whether this last tag is meant to describe the shape of the constellation or to reinforce the claim that the heat of the Sun's flames partially evaporated the river.¹¹

In his commentary on the writings of Eudoxus and Aratus, Hipparchus provides specific cartographic co-ordinates for seven of the river's stars (Fig. 1), which change the shape of the constellation slightly, especially by narrowing the larger loop of the first bend of the river.¹² And finally, nearly three hundred years later, Ptolemy, in his *Syntaxis mathematica* of c. 127–141 AD, provides co-ordinates and magnitudes for thirty-four of its stars, thus refining the profile of the river even further (Fig. 1).¹³ Both Hipparchus and Ptolemy state that the constellation starts with a star that lies alongside the one in the left foot of Orion.¹⁴ In Ptolemy's more detailed description, the river rises from the first star, running slightly to parallel his shin. It makes a large sweep to the west until one of its stars touches the chest of Cetus; and it then swings towards the east into a second, smaller bend. Finally, it trails southwest, where it ends in what he believed to be a 1st-magnitude star.¹⁵ If one compares these antique records of

shortest day (5:3 and 12:7). These correspond to values for the geographical latitude of 41° and 42° . The value usually associated with Greece ($4:3$), corresponds to a geographical latitude of 37° . The declinations of the ever-invisible circles for these various geographical latitudes are the complement of the geographical latitudes (90° -latitude), or 49° , 48° and 53° respectively.

9. Aratus, *Phaenomena*, vv. 634, 728–9 (ed. and English transl. Kidd (n. 3 above), pp. 118, 128).

10. *Ibid.*, vv. 357–66, pp. 98–9.

11. Aratus, *Phaenomena*, v. 360. See the contrasting opinions offered by Mair (in *Callimachus. Lycophron. Aratus*, ed. and English transl. G. R. Mair, London and New York, 1921, pp. 234–5); Gain (*The Aratus Ascribed to Germanicus Caesar*, ed. and English transl. D. B. Gain, London, 1976, pp. 316–17) and Martin (Germanicus, *Les Phénomènes d'Aratos*, ed. and French transl. J. Martin, Paris, 1998, pp. 20–21).

12. Hipparchus, *In Arati et Eudoxi Phaenomena*, *passim*. The references to the stars of Eridanus can be found on the following pages of Manitius's edn (n. 4 above), pp. 154, 203, 213, 207, 225, 227, 229, 237, 239, 241, and 247.

13. Ptolemy, *Syntaxis mathematica (Almagest)*, VIII, I, 36. See *Ptolemy's Almagest*, English transl. G. J. Toomer, Princeton, 1984, and London, 1998, pp. 384–6.

14. This is the star now known as λ Orionis.

15. This is actually a combined double-star, now known as θ Eridani. See Toomer's notes in

Eridanus with the modern-day figure of the constellation (Fig. 1), one can see that the classical constellation was much shorter and did not extend down to the bright star, α Eridani, which was set as the new terminus of the constellation by the cartographer, Peter Plancius, in the 1590s.¹⁶

Only three visual records of the constellations have survived from antiquity. The first appears on the surface of the celestial globe held by the so-called Farnese Atlas, now in the Museo Archeologico Nazionale in Naples (Fig. 2).¹⁷ Despite the wealth of subsequent scholarly literature on this figure and its globe, the current state of research on the date of this statue and, more importantly, the date of the putative Greek model upon which it was based has not progressed significantly since the study published by Georg Thiele in 1898.¹⁸ Thiele proposed that the statue was a Roman copy, more specifically, a Hadrianic copy (dating to between 117–138 AD) of a Hellenistic original. He argued that both the iconography and the locations of the constellations showed that the globe was taken from a Hipparchan astronomical model that recorded an epoch of 128 BC. As the subject of this paper is not the Farnese Atlas, it seems best to leave this particular issue; noting only that, broadly speaking, Thiele's instincts concerning the epoch of the Farnese globe were largely correct and the counter-arguments that the globe is a faithful rendition of the constellations that were described by Hipparchus in his now-lost star catalogue or that it reflects a later, Ptolemaic epoch of the heavens cannot be sustained.¹⁹ Having said that, however,

Ptolemy's Almagest (n. 13 above), p. 386. This position in the constellation is reflected by the name most commonly used in the Middle Ages, Achenar, which, in turn, stems from the Arabic descriptor, *ākhīr an-nahr* ('the river's end'). See P. Kunitzsch, *Arabische Sternnamen in Europa*, Wiesbaden, 1959, pp. 99–101.

16. See Elly Dekker, 'Early Explorations of the Southern Celestial Sky', *Annals of Science*, 44, 1987, pp. 439–70.

17. Naples, Museo Archeologico Nazionale, inv. no. 6374. The statue derives its name from its time in the collection of Cardinal Alessandro Farnese, who bought it for 250 *scudi* in 1562. For additional information, see K. Lippincott, 'A Note on the Early History of the *Farnese Atlas* and its *Nachleben* in Renaissance Art', forthcoming.

18. G. Thiele, *Antike Himmelsbilder, mit Forschungen zu Hipparchos, Aratos und seinen Fortsetzern und Beiträge zur Kunstgeschichte des Sternhimmels*, Berlin, 1899. One might also note the long description of the globe published in the same year in M. Fiorini, *Sfere terrestri e celesti di autore italiano oppure fatte o conservate in Italia*, Rome, 1899, pp. 9–23.

19. It should be stressed that it would be wrong to insist from the epoch depicted on the Farnese globe that it or its model was made in 128 BC. All that can be said with any certainty is that it was made sometime after that date. It is possible that an original Hipparchan globe was repeatedly copied during the 1st century BC, without any updating of its epoch, but with the addition of innumerable changes and adaptations in the style and iconography of the individual figures. The recent suggestion that the constellations are based on the now-lost catalogue of Hipparchus made by Schaefer (see B. Schaefer, 'The Epoch of the Constellations of the Farnese Atlas and their Origin in Hipparchus's Lost Catalogue', *The Journal for the History of Astronomy*, 36, May 2005, pp. 167–96) has been soundly rejected by most scholars. For the proposal of a later date see V. Valerio, 'Historiographic and Numerical Notes on the Atlante Farnese and its Celestial Sphere', *Der Globusfreund*, 35–8, 1987–9, pp. 97–123.

it should be added that Thiele's ideas about the iconography of the constellations are significantly less sound.

The depiction of the constellation Eridanus on the Farnese Atlas globe raises some slightly problematic issues. If one considers photographs taken directly from the statue itself (Figs 3a, 3b, 3c), one can see that the river appears to emanate from the left shin of Orion, and not from his left foot as stipulated by all the early astronomers. From there, it swings in a large arc towards Cetus, hitting the monster in his chest, between his front flippers. It then rather mysteriously re-emerges from below the Tropic of Capricorn, near the elbow, if you like, of Cetus's right front flipper. It streams under the figure of Lepus towards the stern of Argo, turning back to the west just to the north and in advance of the steering oars of the Ship. The stream then continues south towards the ever-invisible circle until it is hidden by the shoulder of Atlas himself. Taken as a whole, although the image of Eridanus on the Farnese globe starts in the wrong place and swings too far to the east, it does maintain a general sense of the S-shaped curves of the constellation. To put it slightly more succinctly, the figure of Eridanus on the Farnese globe appears to reflect a more-or-less plausible artistic attempt to capture many of the features of the constellation defined by Eudoxus, Hipparchus and Ptolemy. Alternatively, it could be the only accurate record of an astronomical description that has not survived.²⁰

In considering the form of the individual constellations on the Farnese globe, it is worth pointing out that it is necessary to consult photographs taken directly from the globe, as none of the later renderings of the Farnese globe provide a wholly reliable witness. Taking the figure of Eridanus, for example, the drawings in both the *Codex Coburgensis* and the *Codex Pighianus*²¹ erroneously show Eridanus emanating from the raised left elbow of Orion, nearly touching the right hoof of Taurus and exiting from the belly of Cetus (Figs 4 and 5). The mid-eighteenth-century engravings attributed to Giovanni Petroschi (Figs 6a and 6b) are an improvement as they begin in the right place and the first curve intersects Cetus well, but then the river swings much too far to the east, so that the second curve runs under the forefeet of Canis Maior.²² The planispheric

20. For example, one could argue that the figure of Eridanus on the globe reflects the description offered by Eratosthenes, in which the stars below Lepus are incorporated as part of Eridanus. For a fuller citation see note 35 below.

21. These two notebooks were commissioned by the Netherlandish antiquarian, Stephanus Viandus Pighius, sometime between 1549 and 1557. The *Codex Coburgensis* is in the Kunstsammlungen der Veste Coburg, Cod. HZ. II and the *Codex Pighianus* is currently Berlin, Staatsbibliothek Preussischer Kulturbesitz, Lib. Pict. A. 61. For more information about Pighius and his notebooks, see Lippincott, 'A Note on the Early History of the *Farnese Atlas*' (n. 17 above).

22. This problematic attribution was recently suggested by Valerio in 'Historical and Numerical Notes' (n. 19 above), pp. 98, 102 and the illustrations on pp. 122–3. The engravings first appear in G. B. Passeri,

rendering of the globe, engraved after a drawing by Martin Folkes and inserted into Bentley's 1739 edition of Manilius, appears to be the most reliable of the group (Fig. 7); but, even here, what one assumes to be the artist's attempt to provide clear pictures of the individual constellations means that he has tended to introduce too much space between the figures. This, in turn, has distorted the placement of many of the constellations.²³

Turning to the second classical example, the recently discovered globe, which passed through the Paris antiquarian, Galerie J. Kugel, and is now in a private collection, was reportedly found alongside two objects dating from the second century BC. There are numerous aspects of the iconography and astronomy of the constellation figures depicted on the globe which suggest a Hellenistic date, but there are also a few details which allow one to argue more strongly in favour of a later date, perhaps as late as the second or third century AD (Fig. 8).²⁴ A more detailed astronomical study of the globe should help scholars establish, at least, the date of the model upon which the features of the globe itself were based. As always, though, it is quite possible that it is actually a late 'Roman' copy of an earlier 'Greek' globe.

Leaving this issue to one side, however, it is interesting to note that one of the characteristics of this globe is that it violates the Hipparchan rule. Hipparchus stipulated that, when viewed from the surface of the Earth, all constellations must be imagined as if they are facing the viewer.²⁵ The corollary of this rule is that all constellations presented on the surface of a globe must be constructed so that their backs are visible. The image to keep in mind is the so-called 'Ptolemaic universe', in which the Earth is at the centre and the constellations are arranged along the outer surface of the encompassing celestial orb. When the figures are imagined as facing inwards towards a central Earth, then it should follow that anyone viewing a set of constellations depicted on the surface of a celestial globe

'Atlas Farnesianus marmoreus insigne vetustatis monumentum commentario' is volume III of Antonio Francesco Gori, *Thesaurus gemmarum antiquarum astriferarum*, Florence, 1750.

23. *M. Manilii Astronomicum ex recensione et cum notis R. Bentlii*, London, 1739. For additional information, see Lippincott, 'A Note on the Early History of the *Farnese Atlas*' (n. 17 above).

24. The globe reportedly was discovered in eastern Turkey, in the region of the Van Lake, which was formerly part of Armenia. It was first published in H. Cuvigny, 'Silver Celestial Globe from Antiquity' in *Spheres. The Art of the Celestial Mechanic*, ed. A. Kugel with K. Van Cleempoel and J.-C. Sabrier, Paris, 2002, pp. 22–6. See also H. Cuvigny, 'Une sphere céleste antique en argent ciselé' in *Gedenkschrift Ulrike Horak (P. Horak)*, ed. H. Harrauer and R. Pintaudi, Florence, 2004, pp. 345–80, esp. p. 373. Cuvigny notes that, statistically, it is more likely that the globe dates to the Roman period and she also records that laboratory tests have supported a late dating (sometime between the 3rd and 5th century AD). Nevertheless, she feels that stylistically the globe recalls an earlier era. See Cuvigny, 'Une sphere céleste', 2004, pp. 379–80.

25. See Hipparchus, *In Arati et Eudoxi Phaenomena*, I, iv, 5 (ed. and German transl. Manitius n. 4 above, pp. 32–3). The passage reads in English as: 'for all the stars are described in constellations from our point of view, and as if they were facing us, except for such of them as are drawn in profile'. English transl. taken from Toomer, *Ptolemy's Almagest* (n. 13 above), p. 15.

would be seeing them as they might appear from the ‘outside’ of the celestial sphere or, facing away from the viewer. The creation of the rule was necessitated by the need to maintain consistency in the descriptors used to indicate the relative positions of the stars – that is to say, so the stars described as being in the left side of the figure stay in the left side, and those in the right side, stay on the right.

On the Paris globe, the majority of the constellations are shown facing the viewer, so they are – hypothetically – presented in mirror-image. The east-west orientation of the different parts of the figures has not been changed, but the right-left orientation of the ‘mirror-image’ figures has been reversed. Owing to this anomaly, the constellation of Eridanus is shown issuing from the right foot of Orion (and not the left foot). It flows towards a rather grumpy looking dolphin, which appears to be standing-in for the figure of Cetus, and then continues in a southwesterly direction, ending in a curve at the bottom of the globe that roughly coincides with the ever-visible circle. Obviously, the maker of this globe has not understood his model, or the model itself was corrupt.

On the surface of the Paris globe, there is also an anomalous set of concentric circles that appears below Lepus and in advance of the steering oars of Argo. Though the shape resembles Corona Austrinus, the Southern Crown already appears in its proper location between the forefeet of Sagittarius. There are two possible explanations for the appearance of this anomalous constellation. One is that it may reflect a misunderstanding of the second bend of Eridanus. The second, more likely, answer is that it reflects the attempt to depict the group of hazy unnamed stars, which Eudoxus placed between Eridanus and the rudder of Argo.²⁶ These stars are mistakenly described by Aratus as ‘placed between Argo’s steering oar and the breast of Cetus, below the flanks of the Hare’.²⁷ Hipparchus criticizes Aratus’s description, noting that the unnamed group of stars below Lepus does not lie between Cetus and Argo’s rudder. The correct description – as he points out – is the one given by Eudoxus.²⁸

The third antique visual source is currently in Mainz and is a late Roman globe, datable to the second or third century AD (Fig. 9).²⁹ The rough style in

26. See Hipparchus, *In Arati et Eudoxi Phaenomena*, I, viii, 2–7 (ed. and German transl. Manitius (n. 4 above), pp. 74–7). The stars belonging to the unnamed group below Lepus are also described in detail in Ptolemy’s catalogue as unformed stars below the constellation of Canis Maior. See Ptolemy, *Syntaxis mathematica (Almagest)*, VIII, 1, 39 (ed. and English transl. Toomer, *Ptolemy’s Almagest* (n. 13 above), p. 388). The stars from this group were formed into the constellation of Columba Nohae by the Dutch cartographer, Peter Plancius, in 1592. See D. J. Warner, *The Sky Explored. Celestial Cartography 1500–1800*, New York and Amsterdam, 1979, pp. 202–3 and Dekker, ‘Early Explorations of the Southern Sky’ (n. 16 above), pp. 449–51.

27. See Aratus, *Phaenomena*, vv. 367–85 (ed. and English transl. Kidd (n. 3 above), pp. 98–101).

28. Hipparchus, *In Arati et Eudoxi Phaenomena*, I, viii, 2–7 (ed. and German transl. Manitius (n. 4 above), pp. 74–7).

29. For information on this globe in the Römisch-Germanischen Zentralmuseum in Mainz, see F. Künzl, ‘Sternenhimmel beider Hemisphären. Ein singulärer römischer Astralglobus der mittleren

which the figures are constructed suggest that it may have been made locally by a provincial craftsman and not in Rome. On this globe, Eridanus originates below the left foot of Orion, swings under the forepart of Cetus and then makes a series of curves, ending under the head of Lepus. Rather than being an S-curve, it is shaped more like a lower-case omega (ω) and it has the distinction of being marked by twelve stars, depicted as open circlets. On this globe, one also finds a disc of open circlets at the end of Eridanus, below Lepus, which seems to depict the unnamed stars located between Eridanus and the rudder of Argo.

Considered all together, then, the three antique celestial globes – to varying degrees of accuracy – maintain the iconography of Eridanus stipulated by the astronomical texts as a winding riverine shape; but only the Farnese globe supplies the fairly complete image of a river that originates near the foot of Orion, bends towards Cetus and then turns east, before continuing to the west again, ending somewhere beneath and to the west of Lepus. Given this relative consistency, it is somewhat surprising to discover that just a handful of the later Greek and Latin manuscripts that purport to illustrate this constellation reproduce this shape. This simple fact, in itself, reveals more about the history of constellation iconography than has been hitherto recognized.

First, it is worth bearing in mind that not only have no illustrated versions of Hipparchus's astronomical writings or of Ptolemy's tables have survived from antiquity,³⁰ but, no illustrated manuscripts of the Greek text of Aratus's *Phaenomena* have been discovered to date, either. Instead, all but one of the early illustrated manuscripts that can be associated with Aratus's poem are in Latin. Moreover, *all* of them contain pictures that betray traces of contamination from non-astronomical sources. In order to understand why this might be so, it is necessary to know a bit more about the early history of Aratus's poem. The fact that, as early as the second century BC, Hipparchus felt compelled to write a critical commentary on the astronomical information conveyed in Aratus's poem is, perhaps, one indication of the high level of regard in which the Greek-speaking world held the *Phaenomena*.³¹ If the poem had not been taken seriously

Kaiserzeit', *Antike Welt. Zeitschrift für Archäologie und Kulturgeschichte*, 27, 2, 1996, pp. 129–33; E. Künzl, 'Der Globus im Römisch-Germanischen Zentralmuseum Mainz: Der bisher einzige komplette Himmelsglobus aus dem Griechisch-Römischen Altertum', *Der Globusfreund*, 55–6, 1997–8, pp. 7–153 (in German and English) and E. Künzl 'Ein römischer Himmelsglobus der mittleren Kaiserzeit. Studien zur römischen Astralikonografie', *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz*, 47, 2000, pp. 495–581.

30. That is not to say that we do not have some faint echoes of what the original Ptolemaic illustrations might have looked like from the pictures reproduced in much later, pre-Sufic celestial globes and in Arabic versions of the Ptolemaic Tables, however. For reproductions of the two globes see E. Dekker, *Catalogue of Orbs, Spheres and Globes. Istituto e Museo di Storia della Scienza*, Florence and Milan, 2004, pp. 112–18 and M. Destombes, 'Une globe céleste arabe du XII siècle', *Comptes rendus de l'Académie des Inscriptions et Belles Lettres*, Paris, 1958, pp. 300–313.

31. See p. 43 above.

as a scientific source by at least some of its readers, surely Hipparchus would not have felt as compelled to attack its weaknesses. Another hint of this sense that the poem was widely known, but felt to be somewhat lacking, is the fact that quite early on – some time during the Alexandrian age – a number of related Greek texts started to appear alongside the original Greek version of the *Phaenomena*, thereby creating a new and very different astronomical corpus. These appended texts included some spurious prefaces, various versions of the life of the poet and discussions of the constellations as they appear on the sphere. This compilation also included abbreviated versions of the catasterismic myths associated with each constellation and descriptions of the shapes of the individual constellations with a list of the positions of the stars within each figure.³²

Some of the catasterismic myths and stellar catalogues in this compilation appear to be closely linked with remnants of another astronomical treatise attributed to Eratosthenes, the head librarian of the great library at Alexandria in the mid-third century BC.³³ The original prose work, the *Catasterismi*, has not survived, but echoes of the text have come down to us via an abridged epitome compiled some time in the first or second century AD, the author of which is

32. No complete version of this Greek compilation, which philologists usually refer to as ‘Φ’, has survived, but its contents have been reconstructed largely by combining a number of later Greek and Latin fragments that formed a part or were derived from the original versions and groupings of texts. It still remains to be determined whether the Greek ‘Φ’ was ever translated into Latin during antiquity. And, of course, the thorniest issue is whether either the Greek (or, if it existed, Latin translation) compilation was ever illustrated in antiquity. All one can determine at this stage is that, in the middle years of the 8th century, a version of ‘Φ’ was rather awkwardly translated into Latin (the text is most often called the ‘*Aratus latinus*’); and, almost within a generation, a revised and modified version of the text was created (generally referred to as the ‘*Aratus latinus recensio interpolata*’ or the ‘*Revised Aratus latinus*’). There is no evidence that the *Aratus latinus* was ever illustrated. The fact that several versions of the *Revised Aratus latinus* do have pictures should not be taken as an indication that the original text, the *Aratus latinus*, was illustrated, because the star catalogue from the *Revised Aratus latinus* actually stems from the catalogue of the *De ordine ac positione stellarum*, which, in turn, derives from the summary account provided in the ‘*scholia Basileensia*’. Despite the similarity in name, there is no direct line of transmission between the star catalogues of the *Aratus latinus* and the *Revised Aratus latinus*. If one were looking for clues about what an illustrated *Aratus latinus* star catalogue might have looked like, the better choice would be to consult illuminated versions of the ps-Bedan *De signis caeli*, which is actually an abbreviated version of the *Aratus latinus* text. For additional information, see Maass, *Commentariorum* (n. 3 above); Martin, *Histoire du texte* (n. 3 above), esp. pp. 69 ff. and H. Le Bourdellès, *L’Aratus latinus. Etude sur la culture et la langue latines dans le Nord de la France au VIIIe siècle*, Lille, 1985, *passim*, but esp. the conclusions on pp. 259–63.

33. See *Pseudo-Eratosthenis Catasterismi*, ed. A. Olivieri, Leipzig, 1897; A. Rehm, *Eratosthenis Catasterismorum fragmenta vaticana. Praemissum est de recensione commentariorum* [Programm des K. humanistischen Gymnasiums Ansbach für das Schuljahr 1898/99], Ansbach, 1899; *Eratosthenis Catasterismorum Reliquiae*, ed. C. Robert, Berlin, 1878; the English translation by T. Condos, *Star Myths of the Greeks and Romans: A Source Book containing The Constellations of Pseudo-Eratosthenes and the Poetic Astronomy of Hyginus*, Grand Rapids, Mich., 1997 and the French translation in *Le Ciel. Mythes et histoire de constellations – Le Catastérismes d’Ératosthène*, French transl. P. Charvet and A. Zucker; with astronomical comments by Jean-Pierre Brunet and Robert Nadal, Paris, 1998.

usually referred to with the convenient moniker of 'pseudo-Eratosthenes'. These fragments recount the mythological fables associated with 45 stellar groupings and provide a brief description of where the stars are placed in each of the constellations. If one considers his description of Eridanus, for example, ps-Eratosthenes tells us that the river has its source in the left foot of Orion, and that it has three stars in its first bend, three in its second bend and seven stars from the third bend to the effluence.³⁴ He seems to refute Aratus's claim that the river represents Eridanus, suggesting instead that it is supposed to be the river Nile for three reasons: first, because the Nile is the only river to originate in the south (remembering that Eridanus was always identified with rivers in northern Europe and should not, therefore, appear as one of the constellations of the southern celestial hemisphere); second, because the seven stars in the space between the third bend and the effluence of the river (wherever that might be) represent the seven mouths of the Nile River; and, third, because the bright star touching the steering oars of Argo, named Canopus, lies just below it. Canopus, of course, was the name of the large island situated in the delta plain of the Nile.³⁵

When considering the impact of the Alexandrian compilation, it seems that the young Cicero did not consult these ancillary texts when he crafted his Latin translation of the *Phaenomena*.³⁶ In the slightly later Latin translation by Germanicus, however, there is ample evidence that he not only had access to the catasterismic myths known either through the earlier versions of a text from which ps-Eratosthenes had drawn his material or from other mythographic sources. Germanicus also updated the astronomical information in his 'translation' to include the corrections proffered by Hipparchus in his criticisms of the original Greek poem.³⁷ In his sections on Eridanus, however, Germanicus does

34. Ps-Eratosthenes, *Catasterismi*, xxxvii (ed. Robert, n. 33 above), pp. 176-9 and the English transl. in Condos, *Star Myths* (n. 33 above), p. 105). The description is slightly difficult to interpret as an overall S-shape, because it seems to consist of only two directions of flow. This anomaly is repeated in the descriptions by Hyginus and in the 'scholia Basileensia', the *De ordine ac positione stellarum* and the *Revised Aratus latinus*.

35. *Ibid.* In Hipparchus's time, Canopus had a Right Ascension of 84.5° and a declination of 52.5° south. The fact that Canopus is said to lie 'beneath' Eridanus seems to suggest that Eratosthenes believed that the constellation extended from *Cetus* to beyond the place where the unnamed stars of *Lepus* are located, at a Right Ascension of about 70°. This could explain why the figure of Eridanus on the Farnese globe is so much further east than Ptolemy's data stipulates. Eratosthenes's placement of Canopus is repeated by Hyginus and in the star catalogues of the *De ordine ac positione stellarum* and the *Revised Aratus latinus*.

36. Cicero's translation of the *Phaenomena* is essentially a line-for-line transposition of the original. See *Cicéron, Les Aratea*, ed. and French transl. Victor Buescu, Hildesheim, 1966; and *Aratea, Fragments poétiques*, ed. and French transl. J. Soubiran, Paris, 1981.

37. See *Germanici Caesaris Aratea cum scholiis*, ed. A. Breysig, Berlin, 1867; Germanicus, *Les Phénomènes d'Aratos*, ed. and French transl. A. Le Boeuffe, Paris, 1975, and *The Aratus Ascribed to Germanicus Caesar*, ed. and English transl. Gain (n. 11 above).

not pick up the myths provided by ps-Eratosthenes (which identify the constellation of Eridanus as the Nile), but calls it 'the River that wept over Phaeton' and describes how 'Jupiter's flames still issue from the wound in the earth', where Phaeton's chariot crashed and how Phaeton's grieving sisters were transformed into trees.³⁸ Also, Germanicus is the first of this group of authors to tie the mythical 'northern' river, Eridanus, specifically to the Po River in northern Italy.³⁹ Finally, in the later passages describing the risings and setting of the constellation, Germanicus describes Eridanus as having horns: as he rises, Eridanus 'lifts both his horns into the clear heavens'.⁴⁰ This short phrase is actually rather important because it signals that, for Germanicus, the constellation of Eridanus is no longer visualized as a curving river, but as a personified river god – one that can weep and one that has horns on his head. The real question is: when did this iconographic shift take place?

In his very useful study of the 'Personifications of Rivers in Greek and Roman Art',⁴¹ Ostrowski notes that one finds rivers assuming human shape as early as Homer – remembering the scenes in which the mighty river Scamander engages in combat with Achilles.⁴² The oldest known visual representations of a river-god, however, date from the second quarter of the seventh century BC and show the river Acheloos as a human-faced bull, an iconography that certainly derives from Oriental influences.⁴³ Over the next few centuries, one finds many of the major rivers of the Greek world depicted as the forepart of a bull or a full-bodied charging bull. At the same time, a variant iconography appears (in the late sixth and early fifth century BC) of a human face encircled by a beard, such as one

38. Germanicus, *Aratea*, vv. 364–6 (ed. and English transl. Gain, n. 11 above, pp. 32 and 63).

39. Germanicus, *Aratea*, v. 618 (ed. and English transl. Gain, n. 11 above, pp. 40 and 70).

40. Germanicus, *Aratea*, v. 603: '... cornua et Eridanus liquido feret utraque caelo' (ed. and English transl. Gain, n. 11 above, pp. 40 and 69).

41. J. A. Ostrowski, *De fluminibus ab artificibus graecis et romanis personificatis/ Personifications of Rivers in Greek and Roman Art* (Universitas Jagellonica Acta Scientificarum Litterarumque. Schedae Archaeologicae, fasculus XLVII. Studi ad Archaeologiam Mediterraneaem Pertinentia, XII/ Zeszyty Naukowe, Uniwersytetu Jagiellońskiego, CMLIV. Prace Archeologiczne, Zeszyt 47. Studia z Archeologii Śródziemnomorskiej, Zeszyt 12), Cracow, 1991. See also F. Imhoof-Blumer, 'Fluss- und Meergötter auf griechischen und römischen Münzen Personifikationen der Gewässer', *Revue Suisse de numismatique*, 23, 1923, pp. 174–421; T. Dohrn, 'Antike Flußgötter' in *Museion. Studien aus Kunst und Geschichte für Otto H. Förster*, Cologne, 1961, pp. 69–72; H. P. Isler, *Acheloos. Ein Monographie*, Bern, 1970; R. M. Gais, 'Some Problems of River-God Iconography', *American Journal of Archeology*, 72, 1978, pp. 355–70; C. Weiss, *Griechische Flussgottheiten in vorhellenistischer Zeit. Ikonographie und Bedeutung*, Beiträge zur Archäologie 17, Würzburg, 1984 and, of course, the pertinent sections of the *Lexicon iconographicum mythologiae classicae*, 8 vols, Zürich and München, 1981–99 (hereafter *LIMC*), especially the section on Acheloos by H. P. Isler, I, pp. 11–36.

42. Ostrowski, *De fluminibus* (n. 41 above), pp. 10–16.

43. The best-known examples appear on 5th-century tetradrachma coins from Gela (Fig. 10), but it is a recurring motif on gems and vases, as well. See Gais, 'Some Problems' (n. 41 above), p. 356; Ostrowski, *De fluminibus* (n. 41 above), pp. 16–17 and figs. 1–6 and *LIMC* (n. 41 above), II, pp. 19–23 and 345–9 (figs. Acheloos 2–67b and 214–42).

sees in the marble mask from Marathon, representing the river Acheloos, and datable to c. 490–470 BC (Fig. 11),⁴⁴ or in the fifth-century votive relief from Megara.⁴⁵ This image of the river-god becomes extremely popular and is diffused throughout the Greek and Roman empires, continuing as a valid iconographic type until, one might argue, the modern day.⁴⁶ Also during the fifth century BC, a third type of representation appears of a standing nude, bearded male figure, with bull's horns on his head, such as one sees depicted on a *didrachma* coin from Metaponto.⁴⁷

The origin of representations of river-gods as elderly, reclining male figures is still the subject of debate. Some claim it is pre-Roman, citing, for example, the reclining figures from the East Pediment of the Temple of Zeus at Olympia or the lounging figures from the pediment of the Parthenon as evidence that reclining river-gods existed as early as the fifth century BC. Others dispute this identity and claim that these figures are not river-gods, but reclining diners at a banquet; and that the figure of the reclining river-god has a much-later, Alexandrian origin.⁴⁸ In one final pre-Roman variant of the anthropomorphic river-god, he is depicted as a nude male figure swimming beneath the feet of a city-goddess or Tyche (Fig. 12). This form of the god seems first to appear around 300 BC.⁴⁹

As has already been seen, the Romans adopted and adapted many of these Greek forms for their different personifications of river-gods. In general, though, they tended to steer away from standing versions of the figure and from

44. Berlin, Staatliche Museen, no. SK 100 (K2). See C. Blümel, 'Die Acheloosmaske aus Marathon und das Weihrelief mit Acheloos und Götterversammlung aus Megara', *Archäologischer Anzeiger*, Beiblatt zum Jahrbuch des deutsche archäologischen Instituts 86, Heft 1–2, 1971, pp. 188–94, esp. pp. 188–91 and figs. 1–2; *Die Antikensammlung in Pergamonmuseum und in Charlottenburg*, Berlin, 1992, pp. 122–3, no. 35 and *LIMC* (n. 41 above), II, p. 24 (fig. Acheloos 80).

45. Berlin, Staatliche Museen, no. 679 (K82). See Blümel, 'Die Acheloosmaske aus Marathon' (n. 44 above), esp. pp. 192–4 and figs. 3–4; Ostrowski, *De fluminibus* (n. 41 above), fig. 14. and *Die Antikensammlung in Pergamonmuseum* (n. 44 above), p. 124, no. 36. See also the pertinent figures reproduced in *LIMC* (n. 41 above), II, pp. 24–35.

46. The best known of these might be the marble disc, the so-called 'Bocca della Verità', which was once a 'manhole cover' for the Roman sewer system, now placed upright in the porch of Sta Maria in Cosmedin in Rome. Later examples, include the wild-haired, 2nd-century Romano-Celtic figure from the Temple of Sulis Minerva in Bath; the giant stone mask of the Rhine in the Römische-Germanisches Museum on Cologne (reproduced in Ostrowski, *De fluminibus* (n. 41 above), fig. 32) and the central face on the so-called 'Oceanus Dish', a large-scale silver platter, possibly Alexandrian (4th century AD), in the British Museum. A more modern example would be the figures of disembodied heads adorning the architecture of Sir Joseph Bazalgette's great embankment of the Thames from the 1860s.

47. Berlin, Münzkabinett, no. AR 7.47 g. For an illustration, see Gais, 'Some Problems' (n. 41 above), fig. 6 and *LIMC* (n. 41 above), II, p. 23 (fig. Acheloos 75).

48. For a resumé of the different arguments, see Ostrowski, *De fluminibus* (n. 41 above), pp. 21–4.

49. See, in particular, the examples cited by Dohrn, 'Antike Flußgötter' (n. 41 above). At some point, the bovine body of Acheloos takes on an equine form. See *LIMC* (n. 41 above), I, pp. 27–8 and II, pp. 50–51 (figs. Acheloos 247–51) and there seems to be a unique representation of Acheloos as a sea-monster (*LIMC* (n. 41 above), I, p. 27 and II, p. 50 (fig. Acheloos 245)).

the zoomorphic forms, with the human-faced bull and the bull-headed youth disappearing completely from the visual lexicon. Although there are a few examples of horned river-gods dating from the Roman period, their appearance tends to be restricted to Greek centres.⁵⁰ Instead, Roman artists appear to favour three types of formulae for depicting river-gods. The first seems to be a development of the Greek horned river-god, where the horns have been replaced with depictions of sprouting reed wreaths or crab's claws (Fig. 13).⁵¹ The second develops from the swimming river-god associated with Tyche figures. The Roman development shows bearded male figures, their heads often dripping with weeds, emerging from the waves to mid-chest, such as one sees in the personification of the Danube on the bottom register of Trajan's column (Fig. 14).⁵² This then develops into an image of the river-god as a 'bust-portrait', in which he is shown behind a kind of parapet, such as one sees in the series of personifications of rivers and town on the Parthian monument of Lucius Verus in Ephesus.⁵³ Finally, the Roman era sees the full-blown development of the elderly, reclining river-god, who leans with his elbow on an overturned urn from which the stream of his river flows. His torso is usually bare, and his hips and legs covered with a robe. His hair is long and entangled with weeds and reeds and he is usually depicted with a similarly extravagant beard. He often carries one or more of a number of attributes: a bundle of reeds, a palm branch, a cornucopia and an oar or rudder (Fig. 15).⁵⁴

50. See Ostrowski, *De fluminibus* (n. 41 above), pp. 27–8.

51. Ostrowski suggests that this is an adaptation of the horned river-god (*De fluminibus* (n. 41 above), pp. 27–8). This seems to be the normal 'pattern' for depictions of both riverine and marine deities used by provincial craftsmen, especially mosaicists and practitioners of the minor arts. See, for example, the numerous figures of various marine and river-gods in the mosaics from Antioch (reproduced in D. Levi, *Antioch Mosaic Pavements*, Committee for the Excavation of Antioch and its Vicinity, Publications 4, Princeton, 1947, pp. 167–72 and R. Ling, *Ancient Mosaics*, Princeton, 1998, p. 52 and fig. 35); the figure of 'Oceanus' in the cosmological mosaic from Mérida, Spain (see Ling, *Ancient Mosaics* (as above), pp. 74–5 and fig. 52); the figure of 'Oceanus' from the North-African Roman cities of Sousse, Sétif (Ain-Tétmouchent), Themetra and Utica (see K. A. Dunbabin, *The Mosaics of Roman North Africa. Studies in Iconography and Patronage*, Oxford, 1978, colour plate A and figs 142–5); the 2nd-century pavement mosaics in Verulamium in Hertfordshire (see J. M. C. Toynbee, *Art in Roman Britain*, London, 1962, cat. no. 178, fig. 207); and the similar figure in Worthington in Gloucester (see R. P. Hinks, *Catalogue of the Greek and Roman Paintings and Mosaics in the British Museum*, London, 1933, fig. 128, no. 37d.).

52. For a reproduction, see P. P. Bober and R. O. Rubinstein, *Renaissance Artists and Antique Sculpture. A Handbook of Sources*, Oxford, 1986, pl. 159 (with the drawing attributed to Baldassare Peruzzi of the base of the column as figure 159b) and Ostrowski, *De fluminibus* (n. 41 above), fig. 36.

53. See Ostrowski, *De fluminibus* (n. 41 above), pp. 55–6 and the tipped-in fig. I (between pp. 56 and 57).

54. This figure is so popular and so widely diffused that an exhaustive list is impossible. The most notable examples of free-standing sculpture would be the figure of the Tiber in the Louvre (holding a cornucopia and a rudder and accompanied by Romulus and Remus with the wolf); the colossal River-gods on the Capitoline in Rome; and the figure of Nilus with his many children and a sphinx in the Musei Vaticani. Also, reclining river gods fill the spandrels in the Arch of Septimius Severus in Rome

As mentioned, in Germanicus's Latin translation of the *Phaenomena*, he not only uses the image of the river Eridanus as a pretext to offer further elaboration on the myth of Phaeton, whom – it might be noted – is not himself a river-god, but is accompanied by a weeping river-god. Second, he later describes Eridanus as a horned river-god. The apparent lack of depictions of horned river-gods in Roman visual sources raises questions about the origin of this image. One possibility is that Germanicus drew it from his personal expertise in earlier Greek forms of the river-god. More optimistically, one might suggest that he had access to a set of Greek illustrations that became attached to the Greek text of the *Phaenomena* as one of the many parts of the Alexandrian compilation. It seems much more probable, though, that Germanicus drew his 'horned river-god' from contemporary literary traditions. Indeed, the image of Eridanus as a bull-horned river-god appears in Virgil's *Georgics*, suggesting that this formula was certainly an accepted poetic convention of the period.⁵⁵ The fact that Germanicus felt free to use the image of Eridanus as a river-god underlines the extent to which the 'constellation' had become detached from any astronomical prerequisites. As none of the astronomical authors – from Eudoxos to Ptolemy – describe the shape of Eridanus as a personified river-god, this image must have inserted itself into the Aratean corpus via another avenue; and the possibility that this particular description derives from that period when the Greek text of the *Phaenomena* began to acquire its mythological apparatus becomes more compelling.

Considering the depictions of Eridanus that appear in the earliest illustrated manuscripts of the *Aratea*, a few things become clear. First, as mentioned, none of the individual representations depicts Eridanus as a fragment of a river. Instead, one finds the illustrations conforming to one of the three figural types that had been fully developed during the Roman period: the reclining river-god, the 'swimming' figure and the mask or bust portrait of the river-god.

Several of the medieval manuscripts of the various Latin translations and adaptations of the *Phaenomena* of Aratus depict Eridanus as a reclining river-god. As typical examples, one could cite the figures in the Carolingian manuscript of Germanicus's translation of the *Phaenomena*, the so-called 'Leiden *Aratea*' (Fig. 16),⁵⁶

and the Arch of Trajan in Beneventum. For a useful series of reclining river-gods, see S. Klementa, *Gelagerte Flußgötter des Spätellenismus und der römischen Kaiserzeit*, Cologne, 1993.

55. Virgil, *Georgics*, IV, 371: 'et gemina auratus taurino cornua voltu / Eridanus, quo non alius per pingua culta / in mare purpureum violentior effluit amnis.' (edn and English transl. H. Rushton Fairclough, Cambridge, Mass., and London, 1950, I, pp. 222–3: '... and Eridanus, on whose bull's brow are twin gilded horns: no other stream of mightier force flows through the rich tilth to join the violet sea'). In citing this passage, LeBoeuffe notes that Virgil also describes the river-god of the Tiber as horned in the *Aeneid*, VIII, 77 (corniger ... fluvius; ed. Rushton Fairclough as above), II, pp. 64–6). See Germanicus, *Les Phénomènes d'Aratos*, ed. and French transl. LeBoeuffe (n. 37 above), 1975, p. 71, n. 4 to p. 39 (*sic*, it should be 38).

56. Leiden, Universiteitsbibliotheek, Voss. Lat. 4°. 79, f. 68v. The manuscript was made in Aachen, sometime around 816. See B. Bischoff, B. Eastwood, T. A.-P. Klein, F. Mutherich and P. F. J. Obbema,

and in its copies in Boulogne and Bern,⁵⁷ or the illustrations accompanying the Anglo-Norman manuscripts of Cicero's translation of Aratus's poem.⁵⁸ Curiously, even though these pictures of Eridanus are remarkably close, the ones in the Cicero manuscripts include stars that have been placed so they follow the curve of the river-god's stream (Fig. 17). In the Germanicus manuscripts, however, it is the body of the reclining god that is covered with stars. In the Leiden *Aratea*, for example, the stars are placed as follows: Eridanus has six stars on and around his head, two on each upper arm, six on his chest, ten on the right side of his robe, one in the right foot and five on the left side, or thirty-two stars in all. There is also one star outside the constellation figure above the right knee, which makes a total number of thirty-three stars.⁵⁹

The fact that the Germanicus manuscripts feature stars on the figure of the god and the Ciceronian illustrations have the stars located in the river suggests two things: first, despite their similarities, the Germanicus and Ciceronian illustrations must have derived from different pictorial models. Second, even though neither the Germanicus nor the Cicero translations mention the positions of the stars in this constellation, some of the later illustrated manuscripts for both do contain *scholia*, which clearly describe the stars in as placed within the three sections of the river – thus following the accepted astronomical tradition in spirit, if not in actual form or number of stars.⁶⁰ In this respect, one

Aratea. Kommentar zum Aratus des Germanicus, Ms. Voss. Lat. Q. 79, Bibliothek der Rijksuniversiteit Leiden, Lucerne, 1989.

57. Boulogne-sur-Mer, Bibliothèque municipale, 188, f. 28v (made in St Bertin at the end of the 10th century) and Bern, Burgerbibliothek, Ms 88 f. 7v (Franco-German, 11th century).

58. See Gottweig, Stiftsbibliothek, Ms 7 (146), f. 25r (Lombard; 15th century); London, BL, Cotton Ms Tib. B.V. pars 1, f. 41v (English, 991–1016); London, BL, Cotton Ms Tib. C. 1, f. 30r (Peterborough, 1122?); London, BL, Harley 647, f. 10v (French (Lorraine?), 820–50) and London BL, Harley 2506, f. 42v (Fleury, end 10th century). The Cotton Tiberius B.V. manuscript has a facsimile edition: *Early English Manuscripts in facsimile. XXI. An Eleventh-century Anglo-Saxon Illustrated Miscellany (British Library Cotton Tiberius B. V. Part I)* eds P. McGurk, D. N. Dumville, M. R. Godden and A. Knock, Copenhagen, 1963, with comparative illustrations of the four Anglo-Norman Cicero manuscripts. The Gottweig manuscript is extensively illustrated in G. Kerscher, 'Quadriga temporum. Zur Sol-Ikonographie in mittelalterlichen Handschriften und in der Architekturdekoration (Mit einem Excurs zum Codex 146 der Stiftsbibliothek in Göttingen)', *Mitteilungen des Kunsthistorisches Institut in Florenz*, 30, 1988, Heft 1/2, pp. 1–76. For the 'classical heritage' of these images, see F. Saxl and H. Meier, *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters in englischen Bibliotheken*, London, 1953, pp. xiii–xxiv.

59. The Leiden and Boulogne pictures have stars, but the Bern manuscript has no stars in this figure at all. The stars in the Boulogne figure are placed as follows: 6 stars around his head, 2 on each upper arm, 6 on his chest, 2 on his belly, 13 on his skirt and above his right foot, or 32 stars in all.

60. Of these three Germanicus manuscripts, the Leiden *Aratea* and its copy in Boulogne have no *scholia*; but the Bern manuscript has *scholia* – erroneously identified by Breysig as the 'scholia Bernensia' (see *Germanici Caesaris Aratea*, ed. Breysig (n. 37 above), pp. 233–8) – which are actually a shortened and re-ordered versions of the star catalogues from the ps-Bedan *De signis caeli*. The stars of Eridanus are listed as: 'Habet stellas in prima acie III, in secunda III, in tertia III ad usque as novissimas VII, quas dicunt in ore nili fluvii esse. Sunt omnes XVI (f.7v).' I would like to thank Dr Martin Germann of the

can see how the Ciceronian pictures, with their stars placed within the confines of the river itself, could have evolved – or perhaps ‘devolved’ is a more precise term to describe this process – from existing star catalogues, even though they are no longer, by any stretch of the imagination, astronomically accurate.⁶¹ In contrast, the star-studded river-gods one finds in the early Germanicus manuscripts have no known astronomical antecedent. As such, they must have been transported, in their entirety, from some other kind of pictorial source. At this stage, however, we have no idea what that source might be.

The second version of Eridanus that also appears in early versions of the Germanicus translation is of a swimming figure, such as one sees in the 12th-century manuscript now in Madrid (Fig. 18).⁶² Whereas the figure in the Madrid Germanicus does share certain, rather striking formal similarities with the swimming river-god seen beneath the feet of Greek Tyche figures,⁶³ it also seems possible that this image might represent a depiction of the stricken Phaeton. If one compares this figure with the formula for Phaeton that one sees on Roman sarcophagi, such as on the Phaeton sarcophagi in the Louvre (Fig. 19), the Galleria degli Uffizi in Florence or the Galleria Borghese in Rome,⁶⁴ the

Bern Burgerbibliothek for his for his generosity and kindness during my recent visit to Bern to study the manuscript. Interestingly, the Cicero manuscript, London, BL, Harley 2506, also uses the ps.-Bedan text as its *scholia*. Three of the other Cicero manuscripts (Gottweig 7 (146) and London, BL, Cotton Ms Tib C.1 and BL, Harley 647) have *scholia* composed of excerpts taken from Hyginus's *Astronomica* and only provide a total number of stars for the constellation as the last line of this *scholium*: ‘stellarum est xiii’. The fifth Cicero manuscript, London, BL, Cotton Tib B.V., pars 1, has a *scholium* taken both from Hyginus and the *Revised Aratus latinus*, but the star catalogue is similarly reduced to a one-line total: ‘stellarum est xiii’.

61. Four of the manuscripts depict the river emanating from the urn of Eridanus and splitting into two streams. Harley 647 has 3 stars in the left stream, 3 in the right stream and, as the stream trails to the right into the waiting mouth of Piscis Austrinus on the facing page, there are 7 stars that run into the gutter of the folio (or 13 stars in all). A similar solution appears in Cotton Tib. B.V., pars 1 (where the 7 stars run across the folii, with 3 stars on the stream on f. 10v and 4 stars on f. 11r). In Cotton Tib. C.I, there are only 3 stars on each stream, or 6 stars in all. Since Eridanus and Piscis Austrinus are not on facing pages (30r and 30v) the stream does not run continuously into the fish's mouth. Instead, Piscis Austrinus does have a peculiar, flame-like ‘stream’ coming from his mouth and flowing to the left, but ending in the left margin of the page. This ‘stream’ does have 7 stars marked on it (in addition to the usual 12 along his back), so the extra stars of Eridanus have, indeed, been remembered here – after a fashion. The river in Gottweig 7 (146) splits into two streams, but has no stars. In Harley 2506, there is a single stream that flows to the right. There are 3 stars in the urn and 6 in the stream. On the facing folio (f. 43r), the stream continues and is decorated with an additional 7 stars – making a total of 16 stars that can be associated with the figure of Eridanus.

62. Madrid, Biblioteca Nacional, Ms 19 (A. 16). The manuscript is extensively discussed and illustrated in M. Haffner, *Ein antiker Sternbilderzyklus und seine Tradierung in Handschriften vom frühen Mittelalter bis zum Humanismus. Untersuchungen zu den Illustrationen der ‘Aratea’ des Germanicus*, Hildesheim, 1997.

63. See p. 53 above. Also note the frieze of swimming river-gods beneath the statue of the River Tiber in the Louvre (Cour du Sphinx) cited above. For a reproduction, see Klementa, *Gelagerte Flußgötter* (n. 54 above), pl. 20, fig. 40.

64. For reproductions, see Bober and Rubinstein, *Renaissance Artists and Antique Sculpture* (n. 52 above), pp. 26–7 and pls 27–7c (Uffizi) and Klementa, *Gelagerte Flußgötter* (n. 54 above), pl. 32, fig. 64

similarity of the awkward, twisting pose is rather intriguing. Since Germanicus goes to some length to elaborate several aspects of the Phaeton myth in his translation, it may well be that some early artist decided that an illustration of Phaeton falling into a river was more pertinent than that of an elderly river-god. It is equally possible, though, that figure in the Germanicus manuscripts is not Phaeton at all, but is the personification of the river Eridanus himself. Whatever his identification, it is worth noting that the Madrid Eridanus, like the other depictions of the river-god in early Germanicus manuscripts, does not have horns on his head.

The figure of Eridanus in the Madrid manuscript is so badly abraded that it is extremely difficult to determine the positions of the stars with any great confidence. There appear to be six stars along the right arm, two in the right hand, three around the right knee, possibly one in each foot, three in the left arm and several in and around his face.⁶⁵ As mentioned, the Germanicus text does not provide any information about the location of these stars, but the text of Madrid 19 is accompanied by *scholia*⁶⁶ which do list the positions of the stars – in general accord with conventional astronomical descriptions:

(Borghese). As is well known, the pose of Phaeton was picked up by Michelangelo in his presentation drawings of the *Fall of Phaeton* (London, British Museum and Windsor, Royal Library). For reproductions, see Michael Hirst, *Michelangelo and his Drawings*, New Haven, Conn., and London, 1988, pp. 113–14 and pls 226–7. See also the intriguing 5th-century Greek bronze and copper figure in the Getty Museum, curiously identified as a ‘Statuette of a Dead Horesman’ (inv. no. 86.AB.530)

65. Madrid, Biblioteca Nacional, Ms 19, f. 67r. The placement of the stars might be clearer in the original, but to date I have only been able to consult Madrid 19 through a black and white microfilm. I would like to thank Alun Ford for helping me locate and consult the Germanicus microfilms left to the University College Library by D. B. Gain.

66. The Madrid manuscript contains the so-called ‘scholia Stroziana’, which derives its name from relatively late manuscript that was once owned by the great Florentine humanist, Coluccio Salutati, and is now housed in the Biblioteca Laurenziana in Florence as Strozzii XLVI. Soon after the ‘scholia Stroziana’ were published by Breysig (n. 37 above), pp. 105–220), Robert pointed out that they were not really *scholia* at all, but were, in fact, nothing more than a conflation between the ‘scholia Basileensia’ and the *scholia* found in the unillustrated Germanicus section of the 9th-century manuscript, Paris BN lat. 12957, which were then known as the ‘Sangermanensia’ after the name of an earlier owner (see Robert, *Eratosthenis Catasterismorum Reliquiae* (n. 33 above), pp. 220 ff.). This justified observation, however, has misled a number of scholars into referring to the *scholia* that accompany the manuscripts of the ‘μ’ branch as the ‘scholia Sangermanensia’. Or, as is the case with Martin, to dismiss these texts altogether since they fall outside the bounds of philological interest (see Martin, *Histoire du texte* (n. 3 above), p. 40). Be that as it may, when one is attempting to understand more about the history of this particular group, it is important to realize that the *Siciliensis* manuscripts do not contain the ‘scholia Sangermanensia’, which were also published in full by Breysig (n. 37 above), pp. 105–232), but contain a very different set of descriptions about the constellations. In their very difference, they can be useful to help identify and bind together a very specific family of texts that are historically, if not philologically, extremely important. As such, the appellation of ‘scholia Stroziana’ should be respected and maintained. The ‘scholia Stroziana’ have been recently re-edited by A. dell’Era, ‘Una miscellanea astronomica medievale: gli “Scholia Stroziana” a Germanico’, *Atti della Accademia Nazionale dei Lincei. Memorie. Classe di Scienze morali, storiche e filologiche*, ser. 8, 23, 2, 1979, pp. 147–256. As dell’Era notes, the ‘scholia Stroziana’ were actually first published in the 1488 *editio princeps* and in the 1499 Aldine edition of the *Aratea* (p. 149).

It has 4 stars in the first bend, 3 in the second bend, 3 in the third bend, 7 [from there] as far as the last one, which are said to be the mouth of the River Nile. There are 17 stars in all.⁶⁷

The depiction of Eridanus in Madrid 19, therefore, represents a second, iconographically distinct example of a star-studded constellation for which there is no known textual authority.

There is another set of illustrations of Eridanus that repeats Madrid 19's formula of a youthful, hornless, 'swimming' male figure: namely, the pictures that accompany various versions of the *Liber introductorius* of Michael Scot.⁶⁸ As has been argued elsewhere, the illustrations in Michael Scot's treatise bear an uncanny resemblance to those found in the Madrid Germanicus. Indeed, some scholars have suggested that the Madrid manuscript must have originated or spent some of its early life at the Court of Frederick II;⁶⁹ or that Michael Scot possibly wrote his treatise in Spain, where he had access to this 'Spanish' Germanicus.⁷⁰ Regardless of the putative peregrinations of Madrid 19 itself,

67. Madrid, Biblioteca Nacional, Ms 19, f. 67r: 'Habet autem stellas in primo flexu iiii, in secundo tres, in tertio tres, usque ad novissimum septem, quas dicunt in ore nili fluvii esse. Sunt omnes xvii'.

68. Both Michael Scot and the *Liber Introductorius* have been very badly served by scholars. There is no edition of the numerous variants of the text, nor an extended study of its illustrations. One looks forward to the forthcoming edition of the text by Silke Ackermann. In the meantime, see L. Thorndike, *Michael Scot*, London, 1965; G. M. Edwards, *The 'Liber Introductoris' of Michael Scot*, PhD dissertation, University of Southern California, 1978; U. Bauer, *Der Liber Introductorius des Michael Scotus in der Abschrift Clm 10268 der Bayerischen Staatsbibliothek München. Ein illustrierter astronomisch-astrologischer Codex aus Padua, 14. Jahrhundert*, Munich, 1983; G. Edwards, 'The Two Redactions of Michael Scot's *Liber Introductorius*', *Traditio*, 41, 1985, pp. 329–40; S. Ackermann 'Empirie oder Theorie? Die Fixsternkatalog des Michael Scotus' in *Federico II e le nuove culture* [Atti del XXXI Convegno storico internazionale, Todi, 9–12 ottobre 1994], Spoleto, 1995, pp. 287–302 and C. S. F. Burnett, 'Michael Scot and the Transmission of Scientific Culture from Toledo to Bologna via the Court of Frederick II Hohenstaufen' in *Sciences at the Court of Frederick II* [*Micrologia*, II], Turnhout, 1994, pp. 101–26.

69. Scholars seem to be split over the origin of Madrid 19 and how Michael Scot might have seen it. Some argue that the manuscript has a Beneventan provenance and trace the manuscript to the Monte Cassino, suggesting that it passed from there to Sicily or southern Italy, before migrating to its present home in Spain. See, for example, P. von Winterfeld, 'De Germanici codibus' in *Festschrift Johannes Vahlen zum 70. Geburtstag*, Berlin, 1900, pp. 391–407, esp. pp. 395–6; P. McGurk, *Catalogue of Astrological and Mythological illuminated Manuscripts of the Latin Middle Ages, IV. Astrological Manuscripts in Italian Libraries (other than Rome)*, London, 1966, p. xvi, 143–9 and fig. 62; F. Mütterich, 'Handschriften im Umkreis Friedrichs II' in *Probleme um Friedrich II*, Konstanzer Arbeitskreis, Vorträge und Forschungen, XVI, ed. J. Fleckenstein, Sigmaringen, 1974, pp. 9–21, esp. pp. 19–20; M. Reeve, 'Some Astronomical Manuscripts', *Classical Quarterly*, 30, 2, 1980, pp. 508–22, esp. p. 513; U. Bauer, *Der Liber Introductorius* (n. 68 above), p. 5, n. 71 and M. Haffner, *Ein antiker Sterbilderzyklus* (n. 62 above), pp. 102–4.

70. Those who argue a Spanish provenance for the manuscript include J. M. Burnam, 'Recipes from Codex Matritensis A 16', *University of Cincinnati Studies*, ser. ii, 8, part 1, 1912, pp. 5–8; J. Millás Vallicrosa, *Assaig d'història de les idees físiques i matemàtiques a la Catalunya medieval*, Barcelona, 1931, I, pp. 237–40; A. Cordoliani, 'Un manuscrit de comput ecclésiastique mal connu de la Bibliothèque Nationale de Madrid', *Revista de archivos, bibliotecas y museos*, 16, 1951, pp. 5–35; J. Millás Vallicrosa, 'Sobre el manuscrito 19 de la Biblioteca Nacional' *Revista de archivos, bibliotecas e museos*, 67, 1, 1959, pp.

certainly something that looked very much like it influenced the work of Michael Scot. A comparison of the pictures of the constellation of Eridanus in Madrid 19 with those found in copies of Michael Scot's *Liber introductorius*, for example, reveals a striking similarity in the pose: both share the same orientation of the figure with his stomach towards the bottom of the page and his legs presented in profile, but with his upper torso twisted round to face the viewer and his right arm flung outwards behind his back. In both, the figure is also placed with his head toward the right side of the page, but turned backwards so that the figure looks back over his right shoulder to the left; his legs are bent and slightly parted and his left hand is raised so that his hand rests on the left side of his face, almost as if he were leaning on that left elbow (Fig. 20). Also, in the Michael Scot illustrations, there is a river flowing beneath the body of the nude figure and, in most cases, the male is youthful and without a beard.⁷¹

Whereas the exact positions of the stars in the illustration of Eridanus in Madrid 19 are difficult to determine, if one compares what can be seen with an illustration taken from one of the Scot manuscripts, the results are rather interesting – as there is a certain degree of overlap. The main difference is the lack of stars in the right hand and left arm of Scot's Eridanus, which suggests that it was not copied directly from Madrid 19 (see Appendix D). A second fundamental difference between the Scot and his predecessors is that, for the first time, the positions of the stars are not described in Scot's text as following the contours of the river. Instead, they are placed within or alongside the human figure itself. In Munich 10268, for example, the stars are listed thus: 'It has seven

119–26 (repr. as, 'El ms. 19 de la Biblioteca Nacional de Madrid y sus influencias clásica y oriental en la transmisión de las ciencias' in J. Millás Vallicrosa, *Nuevos estudios sobre historia de la ciencia española*, Barcelona, 1960, pp. 51–9, esp. pp. 58–9); A. Cordoliani, 'Le Comput ecclésiastique à la l'Abbaye du Mont-Cassin au XIe siècle', *Annuario de estudios medievales*, 3, 1966, pp. 65–89, esp. pp. 66–8; *Miniatures espagnoles et flammandes dans les collections d'Espagne* (exhibition catalogue, Bibliothèque Royale Albert 1er, Brussels, 18 avril–16 mai 1964), French transl. A.-M. Frédéric with the collaboration of M. Debae and M. P. Dumon, Brussels, 1964, p. 13; G. Orofino, *I codici decorati dell'Archivio di Montecassino, vol. I. I secoli VIII–X*, Rome, 1994, pp. 34–5, no. 108; and S. Ackermann, 'Habent sua fata libelli – Michael Scot and the Transmission of Knowledge between the Courts of Europe' (forthcoming). I would like to thank Silke Ackermann for allowing me to read the typescript of her paper prior to publication.

71. Illustrations of Eridanus in Michael Scot manuscripts include: London, BL, Add Ms 41600, f. 48v; London, Wellcome Institute, Ms 509, f. 20r (where the figure is bearded); Milan, Biblioteca Ambrosiana, Ms I. 90 sup., f. 230v; Munich, Staatsbibliothek, clm 10268, f. 82v; Oxford, Bodleian Library, Bodley 266, f. 112v; Padua, Biblioteca del Seminario, Ms 48, p. 38; St Petersburg, National Library, Ms lat. F. V. IX, no. 1, f. 10v; Vienna, ÖNB, Vindob 2352, f. 19v; Vienna, ÖNB, Vindob 2378, f. 8v and Vienna, ÖNB, Vindob 3394, f. 226r (the figure is reversed, so it swims to the left). See also the Scot-derived illustrations and text in Bartolomeo da Parma's *Breviloquium* (Cambridge, Emmanuel College, MS 70, f. 104r. For a discussion of this and the other manuscripts of the *Breviloquium*, see S. Ackermann, 'Bartholomew of Parma, Michael Scot and the Set of New Constellations in Bartholomew's *Breviloquium de fructu totius astronomie*' in *Seventh Centenary of the Teaching of Astronomy in Bologna, 1297–1997* (Proceedings of a meeting held in Bologna at the Accademia delle Scienze on June 21, 1997), eds P. Battistini, F. Bónoli, A. Braccisi and D. Buzzetti, Bologna, 2001, pp. 77–98.

in the head, five that surround the extended right arm, one in the anus, one between his hips, one in the sole of his right foot, one in his right knee and one on his left hip'.⁷² Or, the stars in Scot's illustration of Eridanus closely follow the text – and *vice versa*. For the first time then, the descriptive star catalogue and the illustration of the star-studded river-god agree. Nevertheless, the source or sources of Michael Scot's integrated star catalogue are still not completely understood.⁷³

There is ample evidence that Scot knew a manuscript something like Madrid 19 and knew the contents of at least some parts of Madrid 19's *scholia*;⁷⁴ but a close comparison between the star catalogue described in the 'scholia Stroziana' and Scot's own proves that it could not have been the sole source. The case of the missing stars in the left arm and right hand of Scot's Eridanus could be dismissed as scribal error; but, in numerous other cases, it becomes evident that Scot's catalogue – as well as his illustrations – is actually more of an amalgam, perhaps

72. Munich, Staatsbibliothek, clm. 10268, f. 158r: '... in capite habet 7, per modum circuitus circa brachium dextrum extensum 5, in puncta culi 1, inter coxas 1, in planta pedis dextra 1, in genu dextro 1, in coxa dextra 1'.

73. It should be added that the star catalogue usually associated with Eridanus has found its way into the description of the fanciful constellation of *Figura sonantis canoni*. For more information see n. 74, below.

74. See Ackermann, '*Habent sua fata libelli*' (n. 70 above), who notes two specific instances where Scot seems to have been misled by mistakes preserved in Madrid 19. The first is where the scribe of Madrid 19 misunderstands Pliny's phrase 'aequinoctii sidus' (*Historia naturalis*, XVIII, lxxiv) and offers the non-sensical description of an 'equi sydus' (f. 72v), which then becomes transformed into 'equus secundus' by Scot. A second instance is where Pliny's 'Milvus' (*Historia naturalis*, XVIII, lxxiv) has been changed into 'Nilus' by the Madrid scribe, only to be embellished by Scot, who cites both 'Nilus' and 'Eridanus' in this section of his work. An additional borrowing probably lies behind Scot's fanciful creation of the constellation of a harp-playing man, 'Figura sonantis canoni'. Franz Boll was the first to note that this figure seems to have been invented by Michael Scot and derives from his misunderstanding of a passage in the Germanicus *scholia* concerning the bright star of Canopus (see F. Boll, *Sphaera. Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder*, Leipzig, 1903, pp. 540–42). Intriguingly, the original phrase from the 'scholia Stroziana' ('... quae vocatur Canopus seu Ptolomaeon splendens tangitque temonem navis' (ed. Breysig, n. 37 above), p. 175)) is rendered in Madrid 19 as: '... quae vocatur canoas seu ptolemeon splendens tangitque temonem navis' (f. 67r). One can see how, with the addition of small line above the word *canoas*, the bright star could easily be transformed into a singing man. Moreover, the description of the placement of the stars in this constellation is suspiciously familiar. Michael Scot tells us that: 'Figura sonantis canoni habet stellas 17 in hoc modo: quoniam in prima facie sunt 4, in secunda 3, in novissima 7, unde in hoc signo dicitur esse alterum signum multarum stellarum luce multa ornatum ...' (Munich, clm 10268, f. 82v). Somehow, the description of the stars normally connected to Eridanus in the Germanicus *scholia* have become attached to the 'Figura sonantis canoni'. This suggests that, either in Scot's source or in his befuddled imagination, the figure of Eridanus had no accompanying star catalogue, thus forcing him invent one by using the accompanying illustration of the swimming figure/river-god as his 'authority'. Boll's suggestion that there is the echo of an Arabic element in the midst of this wholly-Latinate muddle seems superfluous. Nevertheless, it is repeated by Bauer (*Der Liber Introductorius* (n. 68 above), pp. 63–4), who cites the illustration of a figure holding a lute in a 13th-century Damascene Qazwini manuscript as supporting evidence (see Bauer (n. 68 above) fig. 12, citing Munich, cod. arab. 646, f. 14r). As Dieter Blume has pointed out, this seated figure is actually a representation of the planet-god, Venus, and is not connected to Eridanus or to the myth of Phaeton. See D. Blume, *Regenten des Himmels. Astrologische Bilder im Mittelalter und Renaissance*, Berlin, 2000, p. 248, n. 19.

combining the 'scholia Stroziana' with information derived from one or more different star catalogues.⁷⁵ Beyond this, though, there are also descriptions of stars in some of Scot's constellations for which there is no known source.⁷⁶ Despite the fact that numerous scholars have closely examined the relationship between Madrid 19 and Michael Scot's manuscripts, then, there does still seem to be a healthy amount of work to do before we can fully appreciate Scot's sources and working methods.

There is a third set of constellation illustrations that are tangentially, though intriguingly, connected to the Madrid 19/Michael Scot-type of constellation pictures. In a closely-related group of fifteenth-century Germanicus manuscripts, Eridanus appears as a nude male figure, placed horizontally on the page as if lying down, with his head to the right. His torso is twisted, his right arm is flung back, his legs are parted and his left arm is held up to his left ear or cheek.⁷⁷ All of the male figures have stars on their bodies, placed in a manner that vaguely recalls the positions of the stars in the Madrid 19/Michael Scot pictures. For example, in one of the oldest manuscripts of this group, the Neapolitan manuscript, dated 1469 and now in Cologne, the stars are placed as follows: five stars on his face, two on the shell he holds to his ear with his left hand, six on his right arm, one on his right thigh, one on right knee, one between his thighs, and one on each foot, or eighteen stars in all.⁷⁸ Comparing these star placements with Madrid 19 and one of the Scot manuscripts, it would seem that the similarity is more generic than exact (see Appendix I).

75. For example, Scot lists 4 stars in the neck of Pegasus, following the listings found only in the 'scholia Basileensia', the *De ordine ac positione stellarum* and the *Revised Aratus latinus*. The star in the right foot of Aquila appears only in the *De signis caeli*. The 7 stars in Cepheus's side appear only in the *Aratus latinus*, *De signis caeli* and, oddly, in the *Revised Aratus latinus*. None of these stars is listed in the 'scholia Stroziana'.

76. For example, there is no known source for the description of 2 stars in the right foot and 3 in the left foot of Cepheus; nor for the 2 stars beneath the beak of Aquila.

77. Stars appear in the body of Eridanus in the following 15th-century Germanicus manuscripts: Cologne, Coll. Bodmer, Ms 7, f. 41r; London, BL, Additional Ms 15819, f. 43v; Madrid Biblioteca Nacional, Ms. 8282, f. 38r; Naples, Biblioteca Nazionale, XIV.D. 37, f. 33r; New York, Pierpont Morgan Library, M. 389, f. 68v; Vatican, Biblioteca Apostolica, Barb lat 76, f. 58r; Vatican, Biblioteca Apostolica, Barb lat 77, f. 37r; Vatican, Biblioteca Apostolica, Urb lat 1358, f. 33v and Vienna, Schottenstift, 521, f. 56v. It is worth noting that in the iconographically distinct member of this group of manuscripts, London, BL, Egerton 1050 (f. 39r), there are no stars marked at all and the figure seems to have lost his beard. In Florence, Biblioteca Laurenziana, Plut 89. sup 43, Eridanus appears twice: once as a horned and bearded old man, lying beside his stream with stars marked on his body (f. 43v); and once as a youthful nude male in the 'Phaeton-pose', lying in a stream with the stream containing 13 stars (f. 88r). The first picture accompanies the text of Germanicus *Aratea* with 'scholia Stroziana' (a *Siciliensis* manuscript) and the second is inserted into Book III of Hyginus, *De astronomia*. The manuscript dates from the second half of the 15th century and was made for the Medici Guardaroba, having the Medici arms on f. 3r. To my knowledge, this is the only example of a Phaeton/river-god Eridanus having skipped over this particular philological boundary.

78. Cologne, Coll. Bodmer, Ms 7, f. 41r.

The variance in the placement of the stars is matched by a number of small iconographic changes in the figure itself. All of the images in these fifteenth-century manuscripts depict Eridanus as an older, bearded man, placed alongside an urn from which a stream flows horizontally (towards the figure's feet). Moreover, all of these figures have horns on their heads. To this extent, they seem to be an amalgam of an old, bearded and horned river-god, set out in the younger river-god/Phaeton's pose (Fig. 21). The fact that at least one illuminator did not feel that this particular figure represented Phaeton, however, is very clearly shown by his addition of a second illustration in the left-hand margin, which shows small Phaeton falling from the fiery heaven into a roiling river.⁷⁹

Whereas the steps in this transition from beautiful youth to horned river-god are not yet clear, it is known that all of the manuscripts in which this older figure appears can be traced back to a single manuscript: Poggio Bracciolini's mysterious 'Sicilian Germanicus', which he reports having obtained in a letter written from Naples in January 1429.⁸⁰ Moreover, all of these manuscripts contain the so-called 'scholia Stroziana', just like Madrid 19. This additional co-incidence between a set of Germanicus manuscripts and Sicily is intriguing and it certainly reinforces the likelihood of Sicily as being the most probable *locus amoenus* for the scholarly exchange, which underpins the shared features of Madrid 19, the Scot manuscripts and the fifteenth-century manuscripts of the 'Siciliensis' Germanicus. But it really does not move us much farther forward. For the moment, one must be content with the suggestion that there seem to be three related, but not identical, sets of constellation illustrations with stars on the figures, each of which appears

79. The additional picture of Phaeton falling into a river appears in London, BL, Add. MS 15819 and Naples, Biblioteca nazionale, XIV. D. 37. The possibility that this small figure might be derived from the kind of picture that informed the Madrid 19 and Scot pictures is appealing, but problematic. The London and Naples manuscripts show a horizontal figure placed above a stream, with both of his arms held straight down by his sides. Had his left arm been raised to his ear, the case for direct transmission might have been more compelling.

80. See *Poggii Epistolae*, IV, 4 (ed. T. de Tonellis, Florence, 1832, I, p. 304). Each of these manuscripts has been connected to an incomplete version of the Germanicus manuscript that Poggio Bracciolini reports had been discovered in Sicily. For this reason, they have all of been grouped together under the rubric of the 'fragmentum Arati' (referring to the fact that the exemplar of the family had a significant loss towards the end of the poem (vv. 433–514)) or, sometimes, the 'Siciliensis' Germanicus, referring to the original location of Poggio's manuscript. This classification includes the slightly longer version of the text found in Vatican, Barb lat 76 as it seems to have been copied from at least one and possibly both of the other Neapolitan manuscripts, and then corrected against a longer manuscript – perhaps Poggio's 'Sicilian' manuscript itself. For a fuller account, see Reeve, 'Some Astronomical Manuscripts' (n. 69 above), esp. pp. 511–17. As Reeve points out, there is no evidence that Poggio himself ever travelled farther south than Montecassino. See Reeve, 'Some Astronomical Manuscripts' (as above), p. 511, citing G. Resta in his article on Poggio in the *Dizionario biografico italiano*, Rome, 1965, VII, p. 401. It is questionable whether this information should not be used to discredit Poggio's own description of the earlier home of the manuscript, however. Whereas it may be true that 'Latin texts seldom turn up in Sicily' (Reeve, as cited, p. 511), if one can tie Madrid 19 or a related Germanicus manuscript to Sicily, then the jump from that to Poggio's 'discovery' is not insurmountable.

to have evolved from a similar and idiosyncratic pictorial tradition, which was circulating in Sicily or southern Italy in the twelfth century.

In addition to the canonical river-god, seen in the Leiden *Aratea* and its relatives, and the 'swimming' Phaeton/river-god that appears in Madrid 19 (and in the Scot and fifteenth-century '*Sicilienus*' Germanicus manuscripts), there is a third version of Eridanus, that appears in early versions of the Germanicus manuscripts, where the figure is represented as a bust portrait set on or behind a parapet. The earliest example of this image can be found in the early ninth-century manuscript from Fulda, now in the University Library in Basel (Fig. 22).⁸¹ The bottom edge of the frame in the Basel image cuts the river-god at mid-chest, and he has the typically wild, reedy hair and a foreshortened urn pouring a stream of water to the side.⁸²

The conclusions that one can draw from these different manuscript examples are two-fold. First: in all of the earliest surviving illustrated versions of these astronomical treatises, the depictions of Eridanus, each of which demonstrate a clear classical lineage in a formal sense, do not accord with the shape of the constellation found in any of the classical texts – not in Aratus, nor in Hipparchus, nor Ptolemy; not in any of the Latin translators and not, significantly, even in the descriptions of the constellations found in Eratosthenes; nor, even, in the later catasterismic myths of Hyginus. Moreover, if the swimming youthful figure is, indeed, intended to represent the stricken demi-god Phaeton, it must have been derived from a wholly mythological pictorial tradition. It can not originate with the catasterismic myths, such as those found in the works of ps-Eratosthenes or Hyginus, since both these sources specifically associate the constellation with the Nile and not with Phaeton. Even within what one would normally consider to be a relatively restricted textual and pictorial tradition, then, one sees at least four different iconographies co-existing side-by-side before the end of the classical period – none of which have any astronomical relevance.

Second: as these images tend to reflect pictorial traditions more consonant with the Roman period than with an earlier Greek one, it would seem that the illustrations reflect quite a late addition to the corpus. So, the pictures that one might blithely describe as being part of the 'larger Aratean tradition', do not, in fact, provide any reliable insights into what the pictures that might have accompanied the original Greek poem would have looked like. Furthermore, it is wholly

81. Basel, Öffentliche Bibliothek der Universität, AN. IV. 18, f. 32r. The text is accompanied by the 'scholia Basileensia' and was written sometime in the early 9th century in Fulda.

82. Note the formal similarities between this figure and the depiction of 'Nilus' on a textile fragment (Fig. 23) preserved in the Pushkin Museum in Moscow (reproduced in J. Boardman, *The Diffusion of Classical Art in Antiquity*, London, 1994, p. 180, fig. 5.33).

possible that these pictures do not even represent a reliable record of the illustrations that may or may not have been part of the early versions of the Alexandrian compilation. The one piece of evidence that we have concerning the possible shape of the constellation pictures that could have accompanied early versions of the castateristic myths reputedly collected by Eratosthenes is a fifteenth-century, Byzantine manuscript in the Vatican, which contains extracts of text related to the 'Epitome' of ps-Eratosthenes (Fig. 24).⁸³ In this manuscript, which several scholars have claimed to be a direct reflection of the Alexandrian original, one sees the constellation of Eridanus depicted as a bust-length river-god. As such, this particular picture would seem to betray a Roman, and not a Greek heritage. It may, indeed, reflect an Alexandrian original – but only a very late one.⁸⁴ As a result, it probably cannot tell us much about the pre-Roman form of this particular constellation.

Whereas it is certainly challenging to speculate about the developments of an iconographic tradition during an age when cultural exchange was dynamic and constant, the period immediately following the production of these early manuscript images presents a very different story. As scholars became physically more isolated from one another and intellectually more distanced from their classical heritage, the way in which the pictures in astronomical manuscripts evolved took a new tack. Lacking access to a larger visual vocabulary, scribes and illuminators were forced to rely more heavily on the pictorial components of their models. In short, the forms of their pictures often depended on how well they understood the pictorial language of their models.

One particularly interesting example can be found in illustrations of Eridanus. The development takes place across two textual families: the so-called '*Revised Aratus latinus*'⁸⁵ and the slightly later a star catalogue formerly attributed to the Venerable Bede, known as the 'pseudo-Bedan *De signis caeli*'.⁸⁶ The fact that this

83. Vatican, Biblioteca Apostolica, Vat grec 1087, f. 307r.

84. There is also the possibility that the pictures in this manuscript do not reflect an early source at all. Considering the extent to which the exchange of scholarly material between Byzantium and the Latin West was very much a two-way affair in the 15th century, it seems wholly possible that the images in Vat grec 1087 could be derived from a relatively late Latin source. Having said that, however, it would have to be from a source unlike any that has survived. Nonetheless, the issues surrounding the heritage of this manuscript certainly bear closer examination.

85. For a discussion of this text and the relevant bibliography, see n. 32 above.

86. The desire to attribute the text to Bede is understandable as almost all of the early manuscript copies of the text appear as part of compilations of authentic Bedan writings. Nevertheless, as recent studies have shown, 1) the text of the *De signis caeli* certainly postdates the 8th-century composition of the *Aratus latinus*, 2) there is no evidence that Bede himself was acquainted with the Greek version of the *Phaenomena* and 3) in his almost verbatim copy of the *De signis caeli*, completed in 820, Hrabanus Maurus – who is scrupulous about naming his sources, and repeatedly cites Bede for other passages in his work – does not name Bede as the author of this work. Instead, he describes his authority as '... ut Arati Phaenomena testantur' (the quote from Hrabanus Maurus appears in Migne, *PL*, CVII, col. 695 and Maass, *Commentariorum* (n. 3 above), p. 582. See also Le Bourdellès, *Aratus latinus* (n. 32 above), pp. 82–3). Most often, the text is now referred to as being by an anonymous 'pseudo-Bede'. The text has

pictorial development takes place across two textual families should serve as a cautionary note to any scholar attempting to impose strict taxonomic structures on this vast and complicated body of manuscripts. In both families of manuscripts, the image of Eridanus makes a rather startling appearance as a wild-haired creature, apparently offering benediction to the reader (Fig. 25).⁸⁷ This figure seems to have developed from the more conventional images of the river-god placed behind a parapet, such as one sees in Roman floor mosaics or, indeed, as has already been encountered in the Basel Germanicus or the Vatican ps-Eratosthenes manuscripts. The steps in this development, however, are rather intriguing. First, one moves from a relatively sober rendition of the god to a point where his cornucopia and his reeds seem to have become conflated into some sort of exotic house plant, such as in the images found in two eleventh-century ps-Bede manuscripts (Fig. 26).⁸⁸ The original wattling of the cornucopia is then transformed into a kind of wicker basket for the plant, such as one sees in the early ninth-century, West Frankish *Revised Aratus latinus* manuscript now in Paris (Fig. 27).⁸⁹ In the next step, the cross-hatching used to indicate the weave of the plant basket becomes transformed into the decoration on Eridanus's sleeve and the wild fronds of his plant are changed into a gesturing hand (Fig. 25). Even though artists of the period were perfectly able to depict classically-inspired images of river-gods in other contexts – such as, oddly enough, in religious contexts where rivers are regularly found in their personified forms (as in, for example, depictions of the 'Baptism of Christ' or the 'Expulsion from Paradise') – this ability does not extend itself to the re-creation of minor gods in what purport to be scientific treatises.⁹⁰

There is a second interesting wrinkle to the story of the medieval Eridanus. As discussed above, almost all of the individual pictures of the constellation found in these manuscripts appear to derive from relatively late, non-astronomical sources. In some of these manuscripts, however, evidence of the

been recently edited by A. dell'Era, 'Una rielaborazione dell'Arato latino', *Studi medievale*, 20, 1979, p. 277.

87. See St Gallen, Stiftsbibliothek, Ms 902, p. 96 (*Revised Aratus latinus* from St Gallen, mid-9th century); St Gallen, Stiftsbibliothek, Ms 250, p. 505 (*Revised Aratus latinus* from St Gallen, late-9th century); and Montecassino, Biblioteca della Badia, Ms 3, p. 190 (ps-Bede, *De signis caeli* from Montecassino, 874–92).

88. Paris, BN, lat 5239, f. 23v (ps-Bede, *De signis caeli*, from Limoges, 10th–11th century) and Vatican, Biblioteca Apostolica, Vat lat 643, f. 94r (ps-Bede, *De signis caeli* from Germany, 11th century).

89. Paris, BN, lat 12957, f. 70r (*Revised Aratus latinus*, West Frankish, early 9th century)

90. See, for example, the clear depiction of a reclining water-god illustrating Psalm 32:7 (... congregans sicut in utre aquas maris) in the *Utrecht Psalter*, f. 18v (the figure is seated below the figure of the Psalmist and he reclines on the back of a sea monster and holds a pouring urn); and the image of an urn-carrying river-god is a regular feature in depictions of the 'Baptism of Christ' in both the Eastern and Western churches (for example, see the image from an 11th-century *Psalter* from Limoges (Paris BN, lat. 9438, f. 24 r)) and in the 6th-century mosaics of the Battistero degli Ariani in Ravenna).

astronomical tradition does persist in a slightly different context. Eleven early manuscripts – representing four different textual families – contain planispheric maps of the heavens. In four of these, Eridanus is depicted using the familiar image of the river-god emerging from or lying beside a stream.⁹¹ In the seven examples, however, it is depicted as a kind of river (Fig. 28).⁹² None of these maps is very reliable cartographically, but they do demonstrate how certain aspects of the original, astronomical tradition managed to escape the overwhelming shift towards more mythologically-based representations. This would suggest, then, that if one were looking for echoes of an earlier ‘Aratean’ iconography, one would more easily find it in these celestial maps than in the individual pictures of the constellations.

In addition to the planispheric maps, there are also nine early manuscripts that contain, amongst them, ten stellar maps in which the sphere of the stars has been divided into hemispheres. In five of these, Eridanus is presented as a river.⁹³ In the remaining manuscripts, though, something very curious has happened – again, reflecting quite ingenious interpolations made by medieval illuminators trying to make some sense out of pictures that they do not understand.

In the summer hemisphere of the Byzantine manuscript, Vat grec 1087, Eridanus is depicted descending in a southerly direction from the foot of Orion. It makes a curving, semi-circular shape around the body of Lepus, and it ends at the point where the summer solstitial colure intersects the ever-invisible circle. In summer hemisphere that appears in the 8th- to 9th-century Greek manuscript containing a version of the Ptolemaic tables (Vat grec 1291), this pairing of Lepus and Eridanus, with the River looking more like an extended ‘J’, directly faces the front part of the constellation of Cetus (Fig. 29). In all of the hemispheres that accompany texts of the *Revised Aratus latinus*, however, a very peculiar juxtaposition of figures appears on this part of the summer hemisphere: the full figure of Cetus is shown facing an anomalous second version of the constellation of Capricorn (Fig. 30).⁹⁴ Clearly, at some point before the early ninth century, the two separate figures of Lepus and Eridanus were fused into

91. See Berlin, Staatsbibliothek, lat 129 (Phill. 1830), ff. 11v–12r; Bern, Burgerbibliothek, Ms 88, f. 11v; Boulogne, Bibliothèque Comunale, Ms 188, f. 20r and London, BL, Harley 647, f. 21v.

92. Aberystwyth, National Library of Wales, 735 C, f. 10v; Burgo de Osma, Archivo de la Cathedral, Ms 7, f. 92v; Munich, Staatsbibliothek, cl, 210, f. 113v and Vatican, Biblioteca Apostolica, Vat grec 1087, f. 310v. In Basel, Universitäts-Bibliothek, AN. IV. 18 (detached folio), Eridanus is a kind of snaky creature. In addition to the depiction of the river-god in the Berlin planisphere, there is also a second snake, labelled ‘heridanus’.

93. Aberystwyth, National Library of Wales, Ms 735C, ff. 3v and 5r; Darmstadt, Landesbibliothek, Hs 1020, f. 61r; Vatican, Biblioteca Apostolica, Vat grec 1087, f. 309v and Vat grec 1291, f. 2v.

94. The double figures appeared in the now lost Dresden, Landesbibliothek, Ms Dc 183, f. 8v and can clearly be seen in St Gallen 902, p. 76; St Gallen 250, p. 462 and Vatican, Biblioteca Apostolica, Reg lat 1324, f. 23v.

one creature. One can see how this might happen given the arrangement of the two figures in the renderings of the southern hemisphere in some of the other manuscripts (Fig. 31). The face, forefeet and long ears of *Lepus* and the curve of the river's flow have been conflated into a single being which, at least as far as one medieval Latin illuminator was concerned, closely resembled the well-known figure of Capricorn. This explanation becomes even more compelling if one examines how the second Capricorn's horn rises towards the right foot of Orion in the Dresden manuscript, echoing the manner in which Eridanus is described as emerging from the foot of the Giant.

Apart from the relatively isolated appearances of Eridanus as a river in manuscript planispheres and hemispheres, there is one other relatively small set of Western manuscripts that preserve the image of Eridanus as a river in their series of constellation illustrations. The history of the early manuscripts of Hyginus's *De astronomia* is rather complex, primarily because none of the earliest manuscripts are, in fact, illustrated. Indeed, the earliest extant illustrated versions of the text have been illuminated with images taken from contemporary copies of the ps-Bedan *De signis caeli*.⁹⁵ This has led some scholars to argue that the *De astronomia* was never illustrated in antiquity.⁹⁶ Le Boeuffle has suggested that the text was not illustrated because it was intended to serve as a manual for the study of celestial globes or that it may even have been intended as a handbook for the construction of a celestial globe.⁹⁷ Exploration of these issues is still in nascent stages, but it is interesting to note that, in the earliest manuscripts, which, one might argue, contain truly 'Hyginian illustrations', Eridanus is depicted as a river (Fig. 32).⁹⁸ Its presence supports the idea that these sets of pictures, at least, were

95. Leiden, Universiteitsbibliotheek, Voss lat 8° 15 (St Martial nr Limoges; c. 1025) and Vatican, Biblioteca Apostolica, Reg lat 123 (Sta Maria in Ripoll; before 1056).

96. A. W. Byvanck, 'De platen in de Aratea van Hugo de Groot', with English summary: 'The illustrations of the Aratea of Hugo de Groot' and a List of Astronomical Manuscripts', *Mededelingen der Koninklijke Nederlandse Akademie van Wetenschappen, Nieuwe reeks, deel 12, afdeling Letterkunde, nos. 1–12*, 1949, pp. 169–235, especially pp. 189–90 (where the English translation reads: '... the treatise of Hyginus is not transmitted to the Middle Ages by an illustrated example from Antiquity') and D. Gaborit-Chopin, 'Les Dessins d'Adémar de Chabannes', *Bulletin Archéologique du Comité des Travaux historiques et scientifiques*, n.s. 3, 1967, pp. 163–225, esp. pp. 186–91.

97. See *Hygin. Astronomie*, ed. and French transl. A. Le Boeuffle, Paris, 1983, esp. pp. ix–xii.

98. Six rivers appear in the following Hyginus manuscripts: Berlin, Staatsbibliothek, Ms 8° 44, f. 7r; Cortona, Libreria del Comune e dell'Accademia Etrusca, Ms 184 (265), f. 51v; Florence, Biblioteca Laurenziana, Plut 29. 30, f. 22r; Leiden, Universiteitsbibliotheek, 8° 18, f. 120r and Vienna, ÖNB, Vindob 51, f. 154r. They also appear in the Hyginus-influenced illustrations in the some of the manuscripts of Ludovico d'Angulo's *De figura seu imagine mundi* (such as Florence, Biblioteca Riccardiana, Ms 3011, f. 6r) in the manuscripts of Domenico d'Arezzo's *Fons memorabilium universi* (Fermo, Biblioteca comunale, Ms 4, f. 66r; Florence, Biblioteca Laurenziana, Ms Aedili 170, f. 92r; London, Lambeth Palace, Ms 35, f. 120v; Madrid, Biblioteca Nacional, Ms 1983, f. 122r; Vatican, Biblioteca Apostolica, Vat lat 3121, f. 21r); and in the family of related German manuscripts with constellation illustrations (Munich, Staatsbibliothek, clm 595, f. 43r; Vatican Biblioteca Apostolica, Pal lat 1369, f. 151r; Vatican Biblioteca Apostolica, Pal lat 1389, f. 170r). Oddly, there is one significant

probably derived either directly from a celestial globe or, perhaps, from a later planispheric map of the heavens.⁹⁹ Even though none of these manuscripts predate the mid-twelfth century, they may actually represent a clear echo of an older, 'astronomical' iconographic tradition.

In the scholarly writings on the constellations usually associated with the Warburg Institute, there is a marked tendency to bemoan the fate of the classical tradition as it passed into Arabic, Persian and Indian hands.¹⁰⁰ Descriptions of the classical gods and goddesses as having been mangled by barbarians beyond all recognition are a recurring *leit-motif*. As far as astronomical iconography goes, however, it is a characterization, which, I believe, is not only unfair, but inaccurate. In their illustrations of the constellations, the Eastern artists actually maintained the classical astronomical tradition much more faithfully than their Western counterparts. The illustrations of Eridanus provide a case in point. In all the extant Eastern manuscripts, Eridanus is depicted exactly as it is described by the Greek astronomers: as an S-shaped river, with two large bends (Fig. 33).¹⁰¹

appearance of a riverine Eridanus outside the Hyginian tradition and this is in the Germanicus manuscript, Montpellier, Bibliothèque de l'École de Médecine, Ms H 452, f. 48v.

99. This latter possibility has been suggested by D. Blume in his chapter on 'Studium und Kosmologie im 12. Jahrhundert (I: Hyginus im 12. Jahrhundert)', in the forthcoming study of astrological iconography, written jointly with Mechthild Haffner and Wolfgang Metzger. I would like to thank Dieter for allowing me to read his chapters prior to publication.

100. Whereas it is true that Saxl credits the Arabic tradition for maintaining certain aspects of the mathematical and cartographical tradition, one still senses that his world-view was biased towards defining the European Renaissance as the time in which the *true* glories of Greece and Rome were reborn. In his essay on 'Die orientalisierten Sternbilder-Darstellungen - Dürers Himmelskarte' in his *Verzeichnis der astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters der National-Bibliothek in Wien*, Heidelberg, 1927, pp. 19-40, for example, he maintains that, stylistically and iconographically, the 'imaginative pagan elements' figures of the constellations remained 'under a cloud' until artists of the European Renaissance were able to 'unveil' them (see pp. 35-6), or, even more succinctly, he claims that: 'So haben Dürer und seine Berater hier, wie noch an einigen anderen weniger wichtigen Stellen die echte Antike im Sinne der italienischen Renaissance-Bewegung an Stelle der arabisierten gesetzt, genau so wie er sich bemüht, an die Stelle der wissenschaftliche-linearen Auffassung des Sternhimmels eine mythologisch-plastische zu setzen' (p. 37). For an Italian translation of the text, see F. Cuniberto in Saxl, *La fede degli astri. Dall'antichità al Rinascimento*, ed. S. Settis, Turin, 1985, pp. 413-20 and 483-5, esp. pp. 417-18.

101. For example, see the illustrations in Copenhagen, Konigl. Bibliothek, Ms 83 and St Petersburg, National Library, Ms arabe 191, ns, reproduced by H. C. F. C. Schellerup in his *Description des étoiles fixes composée au milieu de dixième siècle de notre ère par l'astronomie persan Abd-al-Rahman al-Sîfi ...*, St Petersburg, 1874, pls. III, fig. 36 and VII, fig. 35. See also Oxford, Bodleian Library, Marsh 144, f. 377; Oxford, Bodleian Library, Or 133, f. 93v; Paris BN, arabe 5036, f. 199v and Vatican, Biblioteca Apostolica, Ross 1033, pp. 43-4. And, of course, this image reappears in versions of the *Sufi latinus* and the related Arabic-inspired Latin stellar table manuscripts, such as: Bergamo, Biblioteca Civica A. Mai, Σ.II. 2, f. 108r; Berlin, Kupferstichkabinett, 78.D.12, f. 36r; Brussels, Bibliothèque Royal Albert I, Ms 10117-26, f. 73r; Cambridge MA, Harvard University, Houghton Library, f Ms Typ 43 (formerly, Munich, J. Rosenthal Coll. Ms 100, 2), f. 157r; Catania, Biblioteca Universitaria, Ms 87, f. 16v; Cues, Hospitalbibliothek, Cod. 27, f. 132v; Gotha, Forschungs-bibliothek; Ms M II 141, f. 38r; Los Angeles, J. Paul Getty Museum, Ludwig XII, 7, f. 5r; Oxford, Bodleian Library, Rawlinson C. 117, ff. 154v-155r; Paris, Bibliothèque de l'Arsenal, Ms 1036, f. 37v; Prague, Strahov Rkp, Ms D.A. II. 13, f. 37r; Vatican, Biblioteca Apostolica, Pal lat 1368, f. 55r; Vatican, Biblioteca Apostolica, Pal lat 1377, f. 192r; Vatican, Biblioteca Apostolica, Urb lat 1399, f. 39r; Vatican, Biblioteca Apostolica, Vat lat 3099, f. 21v; Vatican,

If one is looking for a real sense of continuity in the classical tradition, at least as far as astronomical illustrations go, we appear to have been looking – quite consistently for over a hundred years – in precisely the wrong place.

Appendix

Comparison of the placement of the stars in illustrations of Eridanus

<i>Germanicus</i> (<i>Madrid 19</i>)	<i>Michael Scot</i> (<i>Bodley 266</i>)	<i>Germanicus</i> (<i>'Siciliensis'</i> , <i>Cologne 7</i>)
6 stars along the right arm	5 stars along the right arm	6 on his right arm
2 in the right hand	—	—
3 around the right knee	1 on the right knee	1 on the right knee
?	2 on the left thigh;	1 between his thighs;
?	1 on the buttock	1 on his right thigh
Possibly 1 in each foot	1 on the right foot	1 on each foot
3 in the left arm	—	—
Several stars around the head	7 circlets around the head	5 stars around his head; 2 on the shell he holds to his ear with his left hand

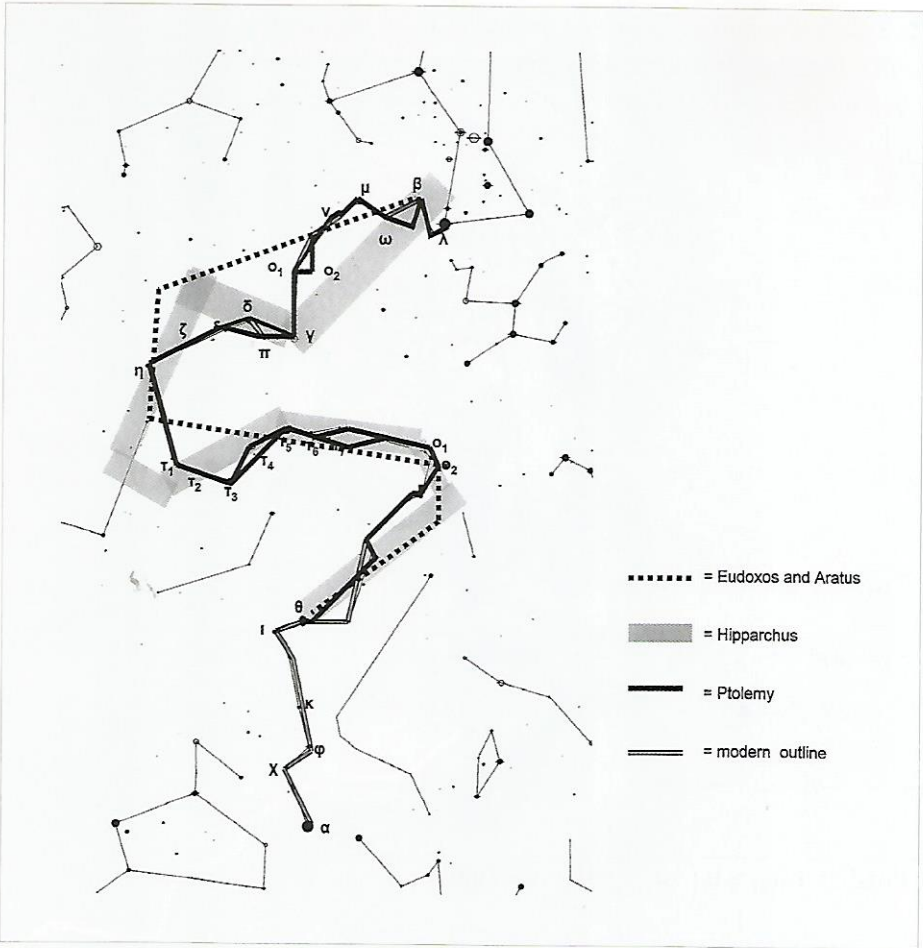
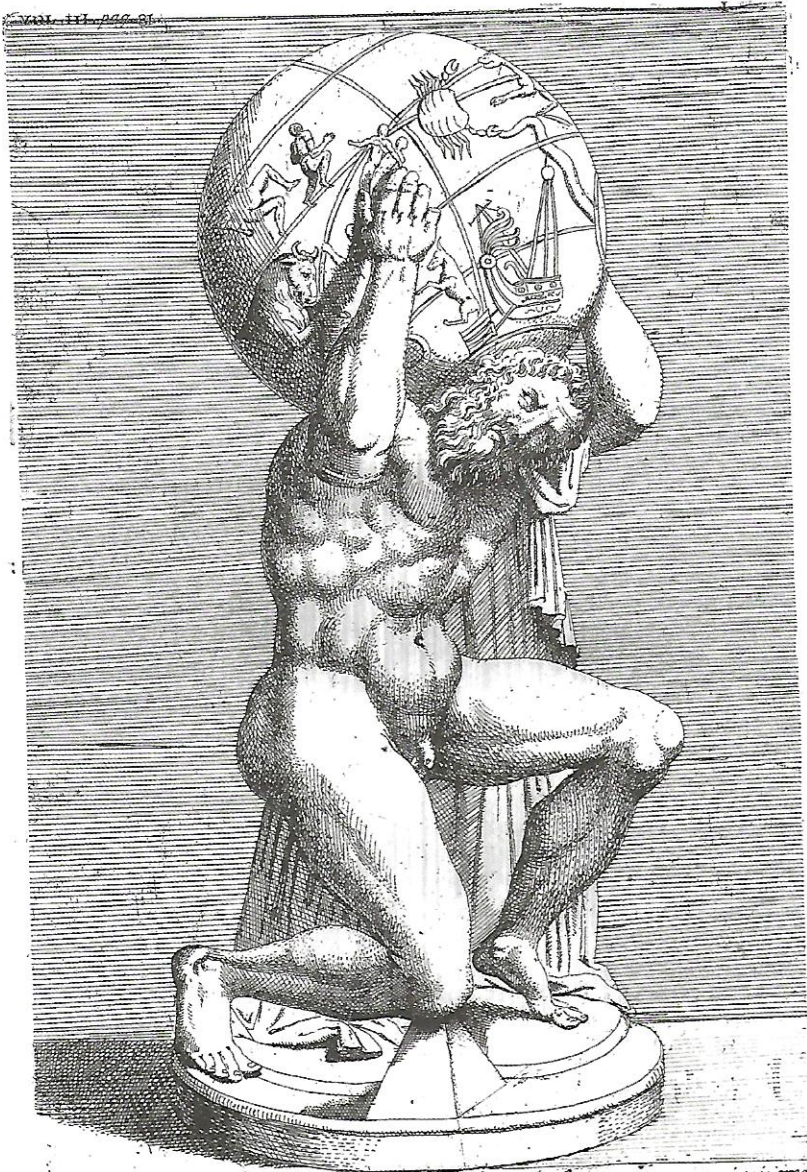


Fig. 1. The constellation Eridanus (globe view).



Atlantis Maximi statua marmoræa, sustinens Globum Cælestem, astrorum signis ornata; et altero genu innixa, qualis a Philostratto describitur imaginem libro 9: sculpta Verò ætate Antoninorum: uti colligitur ex collocacone Asterismorum, relatâ ad sphaeræ Circulæ, ibidem expressas; et collatâ cum Tabulis et observationibus à Ptolemæo peractis eodem seculo; necnon cum nummo Antonini Pii, obviato Fr. Pot. XX, et exhibente idem simulacrum Atlantis: quod offusum ex vetustiss. iudicibus Verbis modo asseratur in Palatio Farnesiano ad Campum Floræ.

Fig. 2. Attributed to Giovanni Petroschi, the Farnese Atlas, in A. F. Gori, *Thesaurus gemmarum antiquarium astriferarum*, III, Florence, 1750.



Fig. 3a. Farnese Atlas – track of Eridanus (author's photograph).

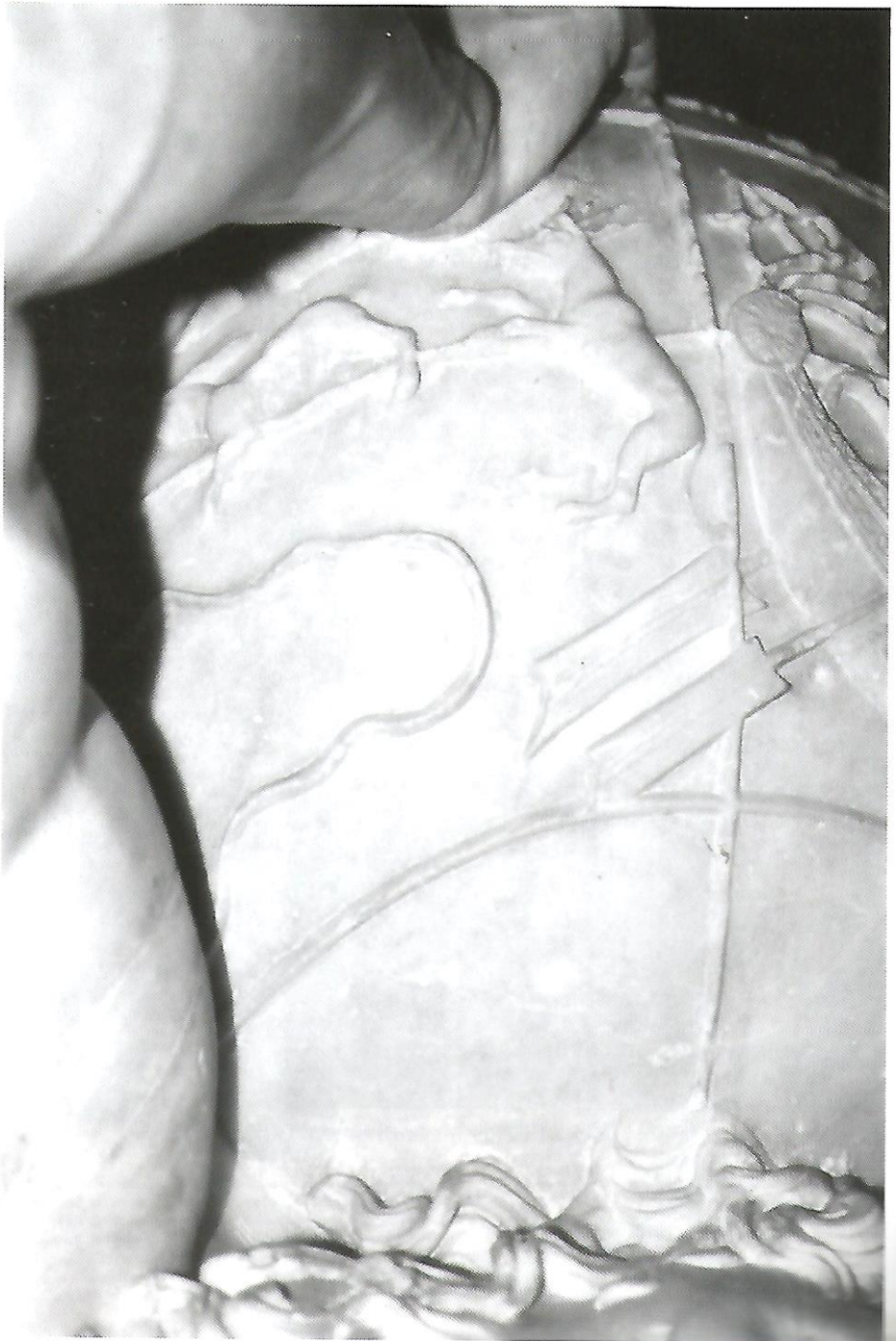


Fig. 3b. Farnese Atlas – detail of Eridanus (author's photograph).



Fig. 3c. Farnese Atlas – detail of Eridanus (author's photograph).

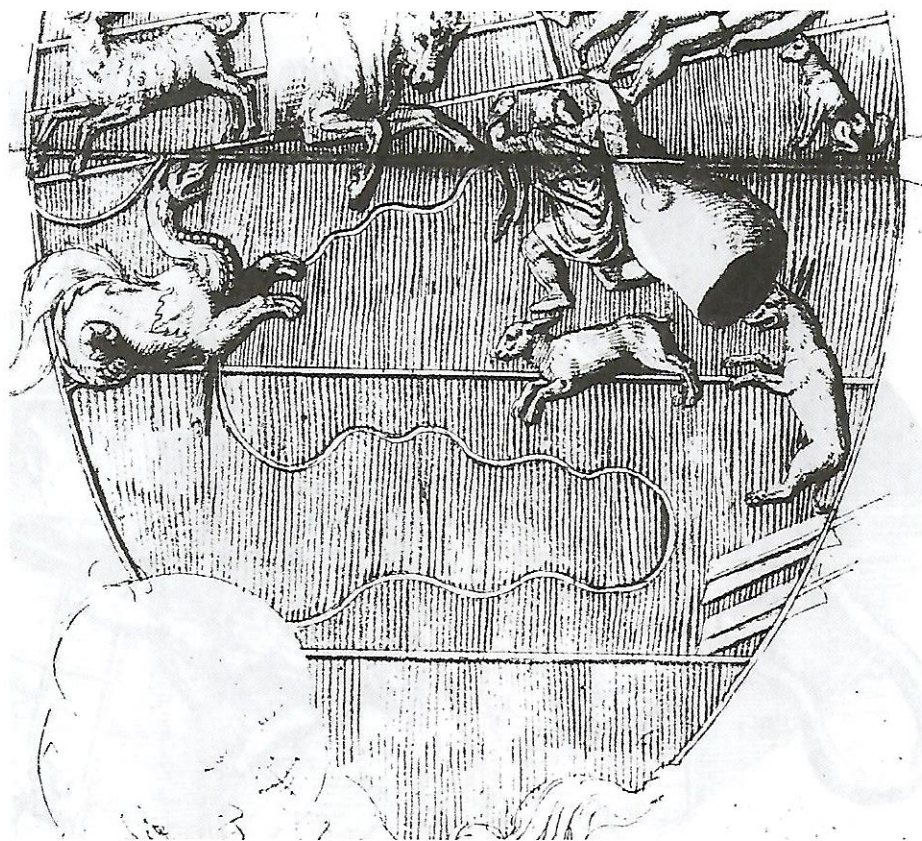
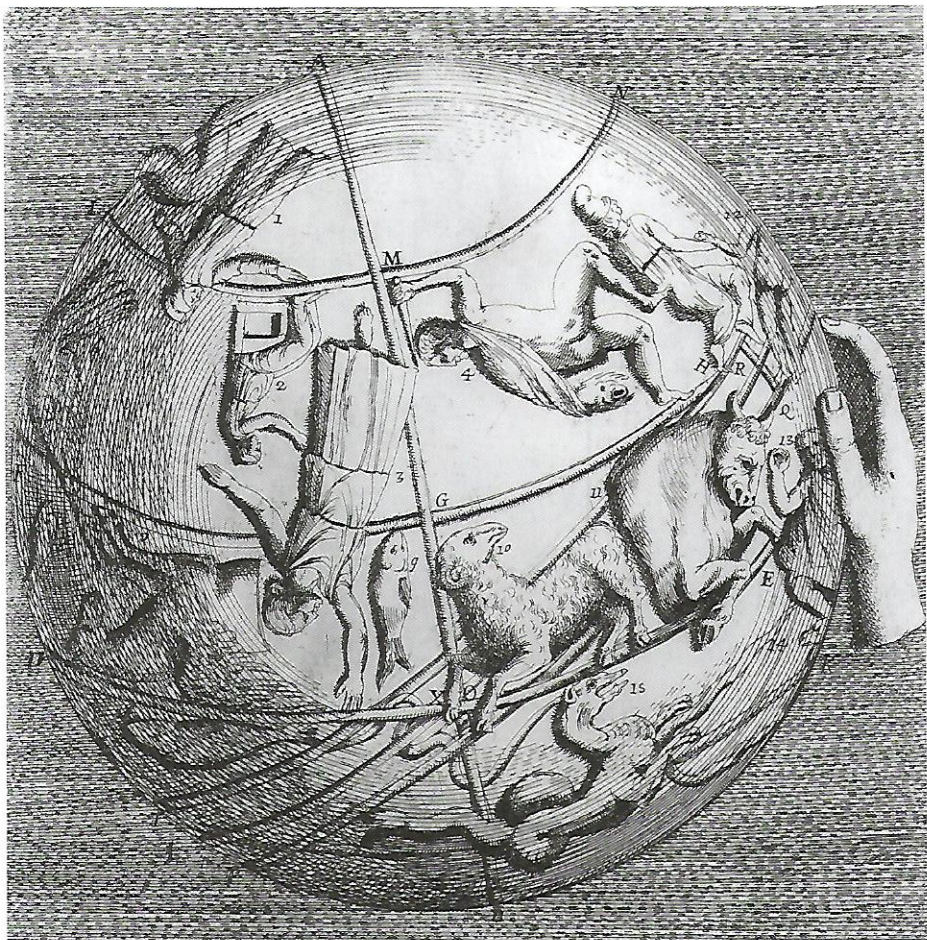


Fig. 4. View of the Farnese globe from the Codex Coburgensis, Veste Coburg, Cod. HZ. II, c. 216, detail.



Fig. 5. View of the Farnese globe from the Codex Pighianus, Berlin, Staatsbibliothek Preussischer Kulturbesitz, Lib. Pict. A. 61, f. 226v.



Prospectus Primus antiqui Globi Caelestis, ab Atlante suffulti, cum Asterisomorum signis, et Sphaerae circulis, quibus apparat oculo constituto prope planum Aequinoctiorum, et intuitu sectionem Vernam respondentem Atlanti danteo in Statua Farnesiana AB Sectio circuli Aequinoctialis recte ducti per Cornu Arietis DE Circulus Aequinoctialis FGH Tropicus Canceri IK Tropicus Capricorni LMN Circulus semper apparentium Maximus in elevatione Poli graduum 40° L X R Ecliptica IPQH Zodiaci fascia Asterismi 0 Draconis pars 2 Cepheus 3 Cassiopea 4 Andromeda 5 Perseus 6 Cygnus 7 Regulus 8 Delphinus 9 Pegasus Boreus 10 Arcturus 11 Taurus 12 Gemini 13 Orion 14 Eridanus 15 Cetus 16 Bore Australis X Sectio Verni Aequinoctii procedens primam in Cornu Arietis gradibus 4 et quate Relemt

Fig. 6a. Attributed to Giovanni Petroschi, view of the Farnese globe, in A. F. Gori, *Thesaurus gemmarum antiquarium astriferarum*, III, Florence, 1750.



Conspectus alter Globi Celestis dorso Atlantis impressi in antiqua statua Farnesiana, ex aduerso Coluri Solis
 stitiorum AB in parte estiva. CD circulus Aequinoctialis. EF Tropicus hyemalis. GH circulus nunquam
 apparentium maximus in elevatione Poli borei grad. 40. IOK Tropicus Aestiuus. LM circulus
 semper apparentium maximus in eadem elevatione. NOP Ecliptica. ISTRV fascia Zodiaci or-
 nata signis 1 Tauri, 2 Gemminorum, 3 Cancrui, 4 Leonis, 5 Uirginis. Reliqua Asterismi extra Zodiacum, 6
 Canis Maion, 7 Naas, 8 Hyantis, 9 Naso, 10 Comae, 11 Centaurus, 12 Orion, 13 Eridanus, 14 Perseus, 15 Hemicus, 16 Cathedra Caeli, 17

Fig. 6b. Attributed to Giovanni Petroschi, view of the Farnese globe, in A. F. Gori, *Thesaurus gemmarum antiquarium astriferarum*, III, Florence, 1750.

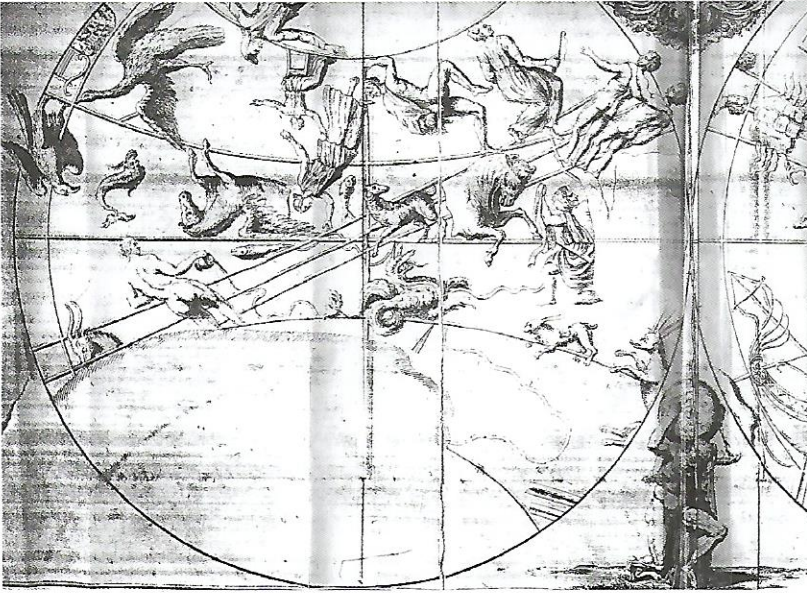


Fig. 7. Martin Folkes, planispheric projection of the Farnese globe, in R. Bentley's edition of Manilius, *Astronomica*, London, 1739.



Fig. 8. Detail of Eridanus from the 'Kugel globe', private collection.



Fig. 9. Roman globe, Römisch-Germanisches Zentralmuseum, Mainz.



Fig. 10. Tetradrachma with river-god from Gela, 450 BC.

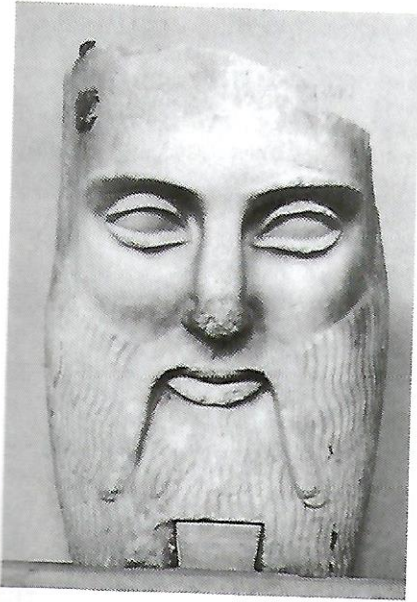


Fig. 11. Mask of Acheloos, 490–470 BC, Staatliches Museum, PKB, Berlin.



Fig. 12. Tyche of Antioch, private collection, Paris.

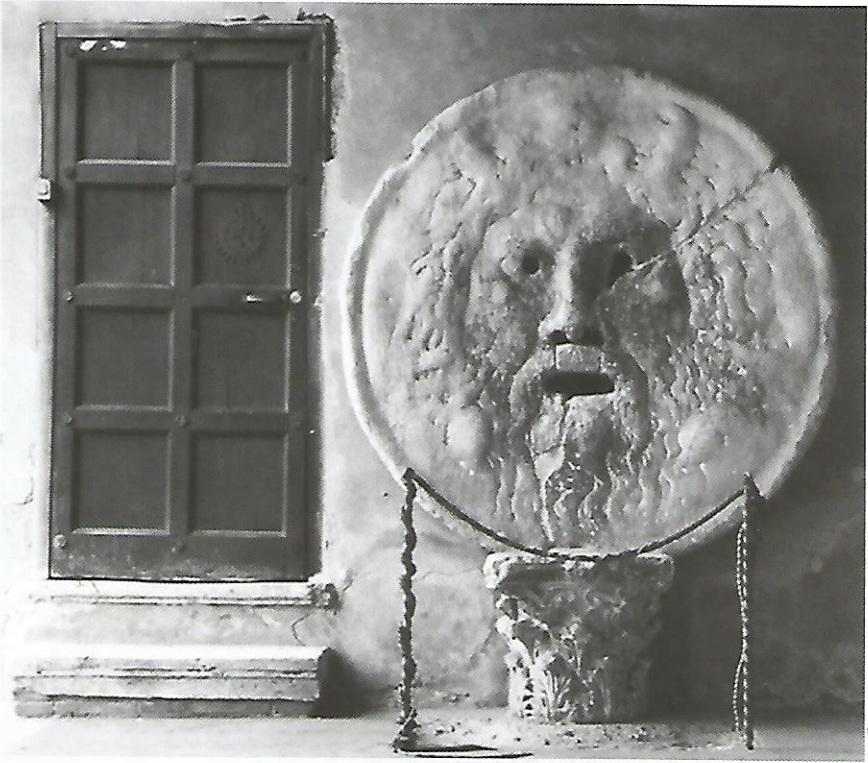


Fig. 13. Bocca della Verità, Sta Maria in Cosmedin, Rome.

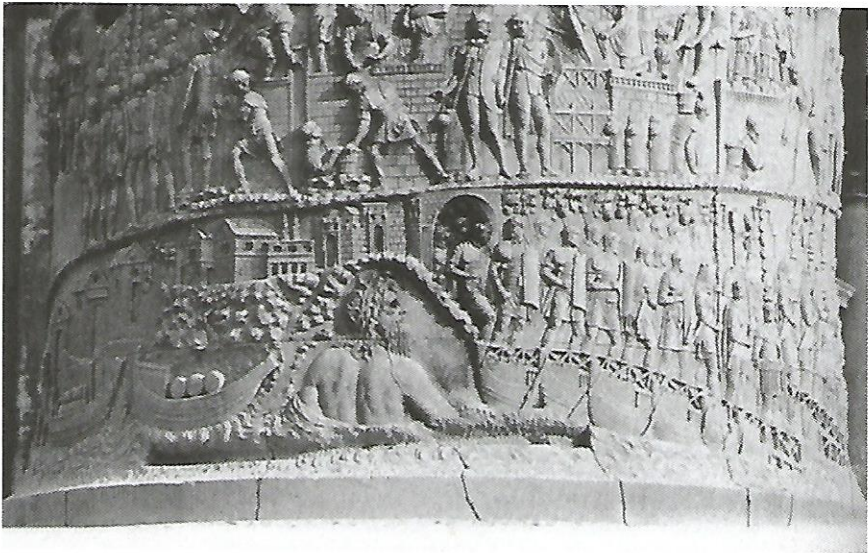


Fig. 14. The Danube, from Trajan's Column.



Fig. 15. River-god (The Tiber), Musée du Louvre, Paris.



Fig. 16. Germanicus, *Aratea*, Universiteitsbibliotheek, Leiden, MS Voss lat 4° 79, f. 68v.



Fig. 17. Cicero, *Aratea*, British Library, London, MS Cotton Tiberius B V, pars 1, f. 30r.



Fig. 18. Germanicus, *Aratea*, Biblioteca Nacional, Madrid, MS 19, f. 67r.

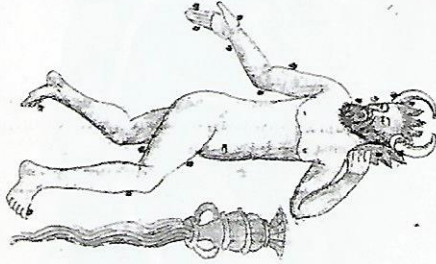


Fig. 19. Phaeton sarcophagus, detail, Paris, Louvre.



Fig. 20. Michael Scot, *Liber Introductorius*, Bodleian Library, Oxford, MS Bodley 266, f. 112v.

da usq; ad gabbum NI. sub ventre .VI. Sunt
omnes. X X III.



D Lanxere ignotus ad eie pro heronide iudas phescomides
Fig. 21. Germanicus, *Aratea*, Collection Bodmer, Cologne, MS 7, f. 41r.

arx meridianus uocatur sed nullum exemplum
prae uentem alius placet aequus simulum appellari
picem minus ameride fuit & subest enormeus stella
quae canobus appellatur qui comen quo gubernaculis
arx quod nullum sidus inferius reparat ob quaerit res
tris uocatur habet stellas primo flexuras secundores
inter caetera ad nouissimum septem quae dicuntur
orandi summae stellas. tredecim.



In firmis hydrochoos sed quae uestigia ficta
sunt aliae stellas quae caudam beluae flecat
quae caput pisces media regione locatae
Nullum nomen ne causa finominis ulla
sicutenus cunctis iampaene euasunt ar dor
paeppocul hmo de cura defundit aquasius undis
accipit rata cadunt errantes signa quoerit
Equibus una magis succauda magna retulca

Fig. 22. Germanicus, *Aratea*, Öffentliche
Bibliothek der Universität, Basel, MS AN. IV.
18, f. 32r.



Fig. 23. Textile fragment depicting the Nile, Pushkin Museum, Moscow.



Fig. 24. Ps-Eratosthenes, *Catasterismi*, Biblioteca Apostolica Vaticana, Vatican City, MS Vat grec 1087, f. 307r (fragments).

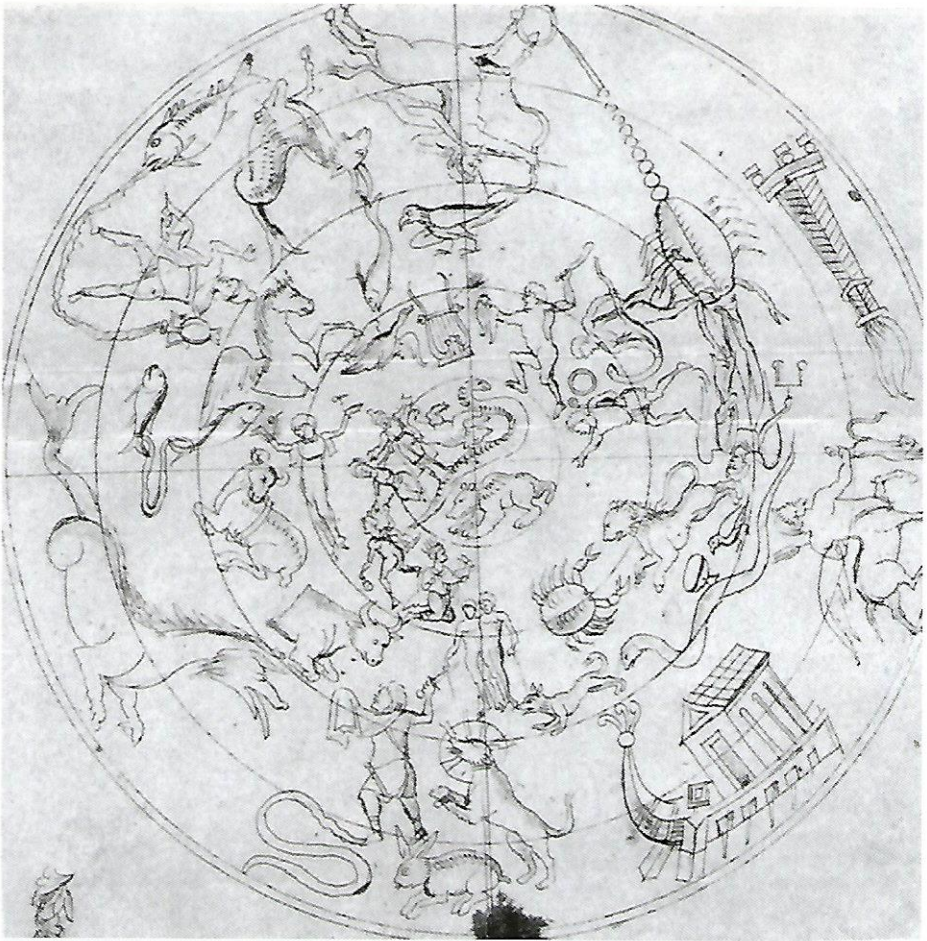


Fig. 28. Ps-Eratosthenes, *Catasterismi*, Biblioteca Apostolica Vaticana, Vatican City, MS Vat grec 1087, f. 310v.



Fig. 29. Ps-Eratosthenes, *Catasterismi*, Biblioteca Apostolica Vaticana, Vatican City, MS Vat grec 1291, f. 2v.

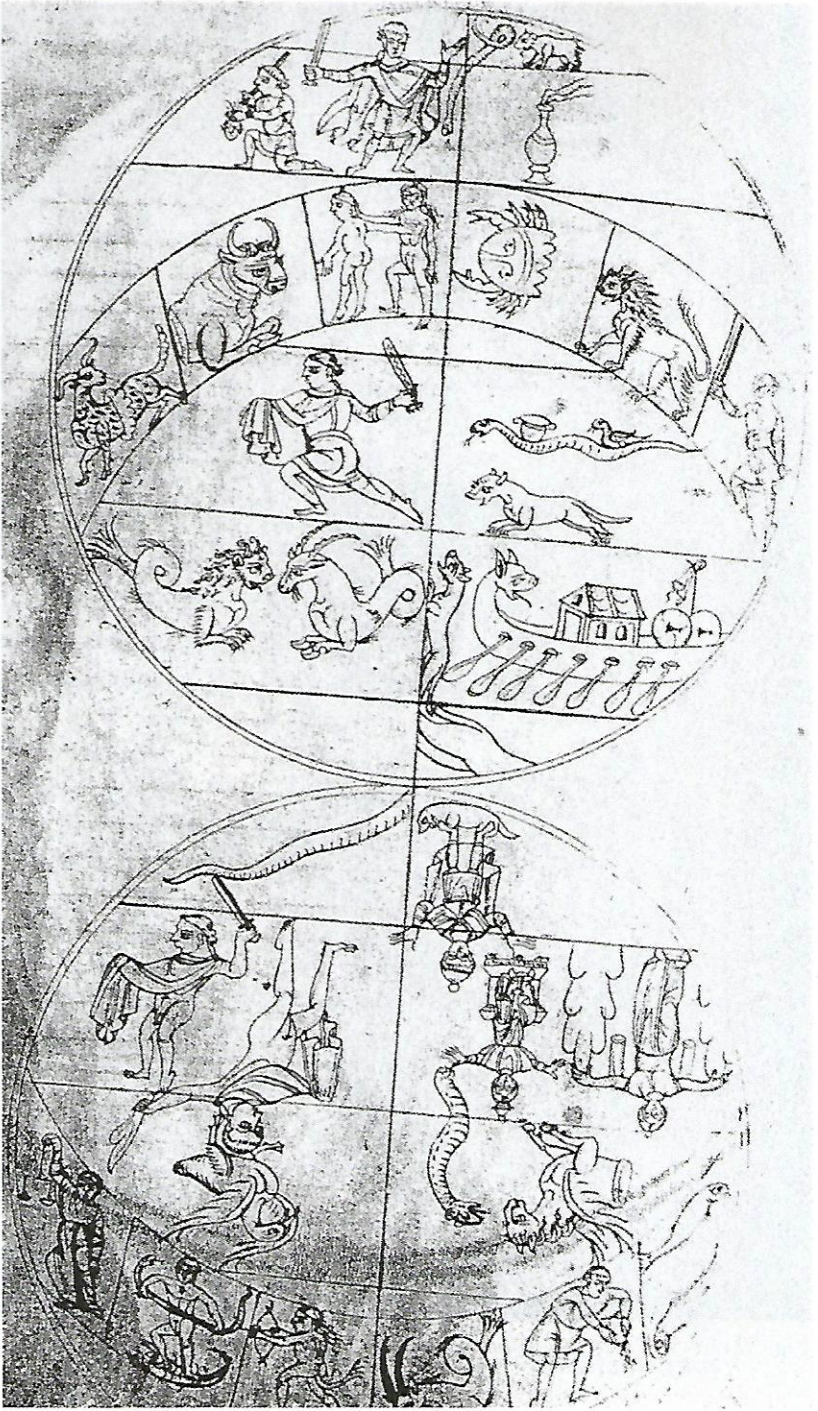
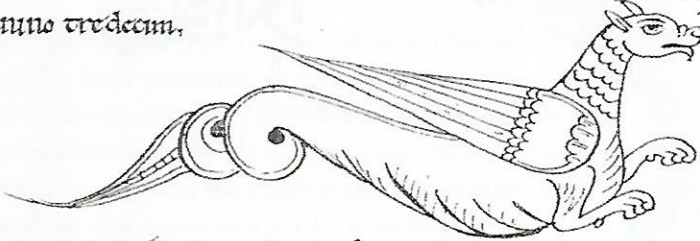


Fig. 30. Revised *Aratus latinus*, Stiftsbibliothek, St Gallen, MS 902, p. 76.

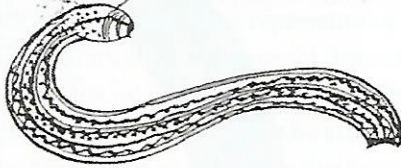


Fig. 31. *Revised Aratus latinus*. Dresden, Landesbibliothek MS Dc 183, f. 8v.

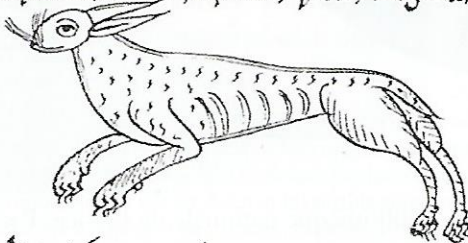
gens huius boream partem corporis que spectat ad exortus ipse alluere flu-
men eridanū uideatur. Hec occidit exorto canero & leone. exortur autem
cum tauro & geminis sed habet in extrema cauda stellas duas obscuras.
Ab eo loco usq; ad reliqui corporis curuaturā. quinq;. Sub uentre sex.
Omnino tredecim.



RIANVS a sinistro pede pfect' orionis & pueniens usq; ad pistrice
Rursus diffundit' ad lepons pedes & puenit ad antarcticū circulū tendit
huc figuratiōe hiemalis circulus diuidit' ab eo loco quo ppe uingit' exo
hic scorpione & sagittario exorto occidit. exortur autem cum geminis & canē
uideatur. habet autē in pima curuatura stellas tres. in secunda tres. Item
intercia usq; ad nouissimam sex. Omīno stellar' tredecim.



epos autē infra sinistrum pedem orionis p hēmatem circulum fu-
git. ^{& hignati circū} habet inferiori parte corporis diuisus occidit sagittario exorto
oritur cum leone. hē autē stellas in utrisq; aurib; singulas. in corpo-
re passim dispositas duas. In pedib; pōtib; singulas. Itas omīno sex.



RIOR. hunc a zona & reliquo corpore equinoctialis circulus diuidit
cum tauro decertantē collocatum. dextra manu clauam tenentem

Fig. 32. Hyginus, *Astronomica*, Universiteitsbibliotheek, Leiden, Vos lat 4°92, f. 103r.



Fig. 33. As-Sufi, *Stellar tables*, Bibliothèque nationale de France, Paris, MS arabe 5036, f. 199v.

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