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THE  
*PHAINOMENA* OR 'HEAVENLY DISPLAY'  
OF  
ARATOS:

*DONE INTO ENGLISH VERSE*

BY

ROBERT BROWN, JUN., F.S.A.

AUTHOR OF 'THE GREAT DIONYSIAC MYTH,' 'LANGUAGE, AND THEORIES OF ITS ORIGIN,'  
'THE RELIGION AND MYTHOLOGY OF THE ARYANS OF NORTHERN EUROPE,' 'THE UNICORN,' 'THE LAW OF  
KOSMIC ORDER,' 'ERIDANUS, RIVER AND CONSTELLATION,' 'THE MYTH OF KIRKË,' ETC.

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# New Work by Mr. Robert Brown, Junr., F.S.A.

Author of *The Great Dionysiak Myth*, *The Unicorn*, *The Law of Kosmic Order*, *Eridanus River and Constellation*, *The Myth of Kirke*, etc.

~~IN THE PRESS~~

## THE PHAINOMENA, OR 'HEAVENLY DISPLAY' OF ARATOS,

DONE INTO ENGLISH VERSE.

With an Introduction, Notes, and Appendices, and lxviii Engravings from rare Works, MSS., Euphratean Boundary-stones, and other sources, of the Constellation-figures and Mythological Personages mentioned in the Poem; together with a Folding Map showing in colours the Constellations on the Equinoctial Circle with the Stars adjacent, for the year B.C. 2084, in illustration of the archaic statements preserved by Aratos, and hitherto unexplained.

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Alone, nor from one star is bright its head ;  
 But two on temples, two on eyes, and one  
 Low on the jaw-tip of the terrible Sign.<sup>1</sup>  
 The head's aslant, and seems as if 'twere nodding  
 Towards the *Twister's* tail-tip ; and in line  
 With this the mouth and right side of its face.

55

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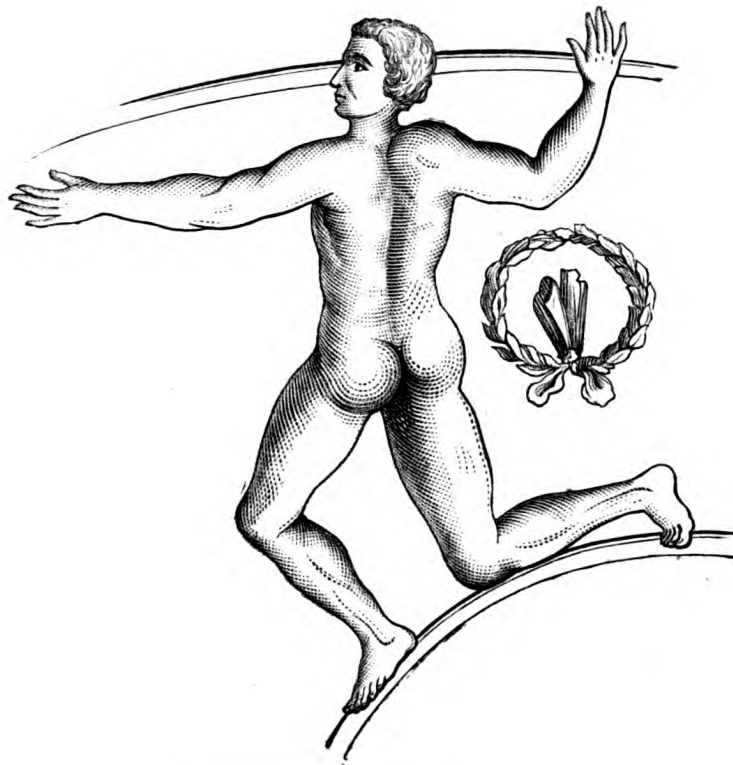


FIG. V.—THE KNEELER AND THE CROWN.

'That head has just its course where with each other  
 The topmost settings and the risings join.'<sup>2</sup>

<sup>1</sup> Δεινοῖο πελώρου. An Homeric phrase (cf. *Il.* v. 741; *Od.* xi. 634), applied to 'a Gorgeian head,' such as that of Medousa the Gorgô (vide *U.* Sec. vii). The principal star of the *Caput Medusae* in the constellation *Perseus* is now called Algol = Al Ghul ('the Ghoul'), and, according to astrologers, is 'the most unfortunate, violent, and dangerous star in the heavens.' Aratos does not mention Medousa in connexion with *Perseus*. It is not necessary to render πελώρ 'monster.' The essential meaning of the word is portent (cf. *Il.* ii.

321: πελώρα θεῶν, 'portents sent from the gods').

<sup>2</sup> The Schol. says: αἱ δύσεις καὶ ἀνατολαὶ πλησιάζουσιν ἀλλήλαις, λήγουσα μὲν ἡ ἀνατολή, ἀρχομένη δὲ ἡ δύσις, κατὰ τὸν μεσημβρινὸν πόλον ἴγουν κύκλον, ὅς ἐστι μεσαίτατος πάσης τῆς σφαίρας. κ.τ.λ. And quotes *Od.* x. 86: ἐγγὺς γὰρ νυκτὸς καὶ ἡματός εἰσι κέλευθοι. Micyllus observes, 'Caput Draconis pertingit usque ad maximum circulum semper apparentium. Sub hoc circulo miscetur extremi ortus et occasus. Nam quae proxime sunt intra hunc circulum occidere, quae extra,



Near this, and like a toiling man, revolves  
 A form. Of it can no one clearly speak,  
 Nor to what toil he is attached ; but, simply,  
*Kneeler*<sup>1</sup> they call him. Labouring on his knees,  
 Like one who sinks he seems ; from both his shoulders  
 His arms are raised ; each stretching on its side  
 About a full arm's length. And his right foot

65

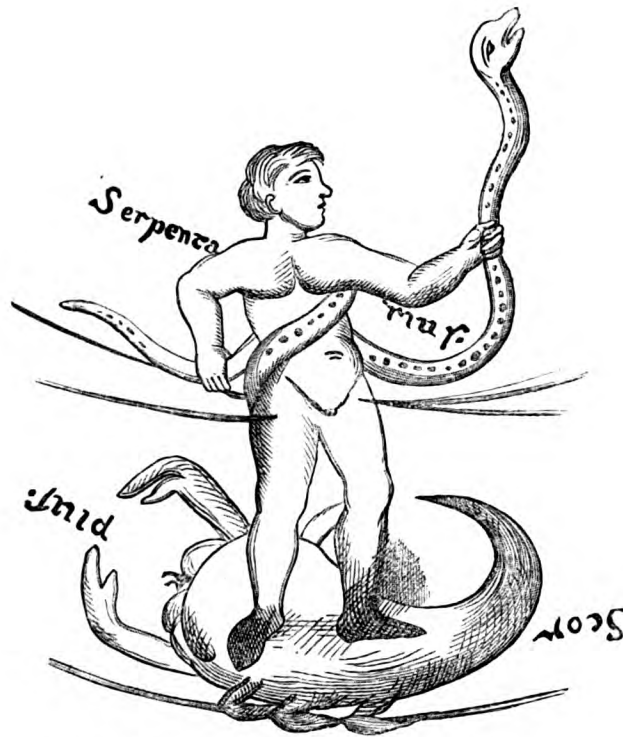


FIG. VI.—THE SNAKE-HOLDER AND THE SCORPION.

Is planted on the twisting *Serpent's* head.  
 And here that *Crown*<sup>2</sup> which Dionysos placed,  
 Of Ariadnê dead a glorious sign,<sup>3</sup>  
 Revolves behind the weary toiler's shape.

70

semper apparere incipiunt.' So Strabo: 'The arctic circle is the limit of the rising and the setting stars' (Strabo, I. i. 6).

<sup>1</sup> Originally the Kneeling Izdubar, the great solar Euphratean hero, a phase of the god Bel who, in the grand strife of Kosmos against Chaos, overcomes

Tiamat the Dragon. The *Kneeler* was afterwards very properly called Héralês—Hercules, the corresponding personage in the Hellenic Pantheon (vide *L. K. O.* 86 ; *E. Sec.* xxix).

<sup>2</sup> As to this myth, vide *E. Sec.* xxix.

<sup>3</sup> Vide Ovid, *Fasti*, iii. 459 *et seq.*

To his back the *Crown* is near, but by his head  
 Seek the *Snake-holder's*<sup>1</sup> head ; and then from it  
 You may behold his shining form itself ;  
 So bright the gleaming shoulders 'neath his head  
 Appear. These even when the moon is full  
 Can be beheld ; the hands are quite unequal ;  
 For feeble glitter flickers here and there.  
 Yet nathless they are seen, since they are large.<sup>2</sup>  
 Both of them grasp a *Snake*, which round the waist  
 Of the *Snake-holder* twines ; but he well-fixed,

75

80

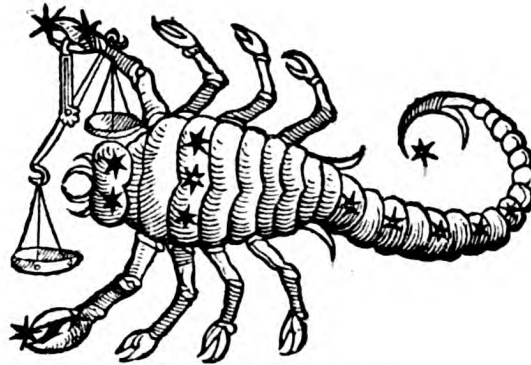


FIG. VII.—THE SCORPION.

With each foot presses on a monster huge,  
 The *Scorpion*, o'er eye and breast-scale standing  
 Upright, the *Snake*, meanwhile, in both hands writhing ;  
 Less in the right, most holds the left on high.  
 By the *Crown's* side the jaw-end lies along ;  
 Beneath the coils search for the mighty *Claws*,<sup>3</sup>  
 But they are scant of light and nothing fair.

85

90

<sup>1</sup> The two heads still appear almost close together on a modern uranographic globe.

<sup>2</sup> Aratos does not refer to the great size of the whole constellation, the 'Ophiuchus huge' of Milton (*Paradise Lost*, ii. 709). Delambre observes that he could not have had the constellation itself 'sous les yeux. Les mains sont comme les épaules.'

<sup>3</sup> The *μεγάλας Χηλᾶς* being extended through a

whole zodiacal Sign, must of course have been out of proportion with the rest of the *Scorpion* ; and, suitably enough with the symbolical character of this creature as a most archaic type of the Darkness which stung to death the solar hero, as *e.g.* in the *Orión*-myth (vide *inf.* Vs. 641-6), the *Claws* were *φαίων ἐπιθενέες οὐδὲν ἀγαυαί*.

Behind the *Twister* moves, as if he drove,  
 The *Bearward*, whom mankind the *Ploughman*<sup>1</sup> call,  
 Because he seems to touch the wainlike *Bear*.  
 The whole is well in sight ; but neath his waist  
 The star *Bear-watcher*<sup>2</sup> brighter than the rest.

95

Beneath the *Ploughman's* feet the *Virgin*<sup>3</sup> seek,  
 Who carries in her hand the brilliant *Ear of corn*.<sup>4</sup>



FIG. VIII.—THE VIRGIN.

Whether she be *Astraios*-sprung,<sup>5</sup> whom men  
 Of old call sire of stars, or of another,

<sup>1</sup> Vide V. 585, note.

<sup>2</sup> *Arcturus*, fourth amongst stars of the first magnitude (vide V. 609).

<sup>3</sup> Originally the Euphratean Istar. Her primary phase was lunar, her secondary phase planetary (*Venus*). As connected with the Morning-star she was goddess of war, and as connected with the Evening-star, goddess of love.

<sup>4</sup> *Stachys* (*spica*) also signifies *pubes*. The cruel and dissolute Istar, who wearied her lover the solar-

power Dumuzi (Tammuz, vide *K.* 57 *et seq.*), was the exact opposite of *Dikê-Parthenos*, a beautiful Hellenic idea.

<sup>5</sup> *Astraios* ('Starry'), a personification of the starlighted heaven, was mythic sire of the Winds, the 'fratres *Astraei*' (Ovid, *Metam.* xiv. 545), of the ἀστέρια Ἐωσφόρον (*Venus-Istar*), and of 'the brilliant stars with which heaven is crowned' (Hesiod, *Theogonia*, 378-82; the Homeric *τείρεα πάντα, τὰ τ' οὐρανὸς ἐστεφάνωται*, *Il.* xviii. 485).

Calm may she glide. A further tale obtains,— 100  
 That once she was a denizen of earth,  
 Met mortals face to face, and ne'er disowned  
 Or men or women of the race of old,  
 But though immortal sat amid them all.  
 They used to name her Justice ; she would call 105  
 The elders to broad street or city-square,  
 Declare men's rights, and see that right was done.  
 As yet they knew not aught of grievous strife,  
 Nor aught of blameful faction, or of din ;  
 But thus they lived. Nor recked of ocean-toil, 110  
 For life<sup>1</sup> not yet did vessels bring afar ;  
 But ploughs and oxen, and the people's queen  
 Justice, right-giver, richly all things gave.  
 This was whilst earth maintained the golden race.<sup>2</sup>  
 In silver days she little mixed with man, 115  
 Changed, for she missed the ways of those of yore.  
 Yet through the silver age she still remained.  
 She came at even from the echoing hills  
 Alone, nor spoke to mortal soothing word ;  
 But when the highlands were replete with men, 120  
 These she would threaten, and their sins would chide,  
 And vow she ne'er would come in sight though called.  
 ' Oh what a race the golden sires have left,  
 Inferior to themselves ; but you will father worse.  
 Then wars and slaughter will prevail with men, 125  
 And woe shall fall upon them for their sins.'  
 She spake and sought the heights, and left the hosts  
 Whilst on her all were gazing earnestly.  
 But when these too had died, and others came,  
 The brazen race, more hurtful than their sires, 130  
 They for themselves first forged the highway knife—  
 An evil work, and first plough oxen ate ;

<sup>1</sup> *Bίον*, i.e., ' food.'

<sup>2</sup> As to the *γένος χρύσειον*, vide Hesiod, *Erga*, 109 *et seq.*

Then Justice, hating such a race as these,  
 Soared up to heaven, selecting this abode,  
 Whence yet at night she shows herself to men 135  
 The *Virgin*, near the *Ploughman* seen afar.<sup>1</sup>

O'er both her shoulders there revolves a star  
 [In the right wing, *Fruit-plucking-herald* called,]<sup>2</sup>  
 So large in size, and having such a gleam<sup>3</sup>  
 As to show forth beneath the *Great Bear's* tail.<sup>4</sup> 140  
 For that is bright, and bright the neighbouring stars ;  
 When you see these you have no need to doubt.<sup>5</sup>

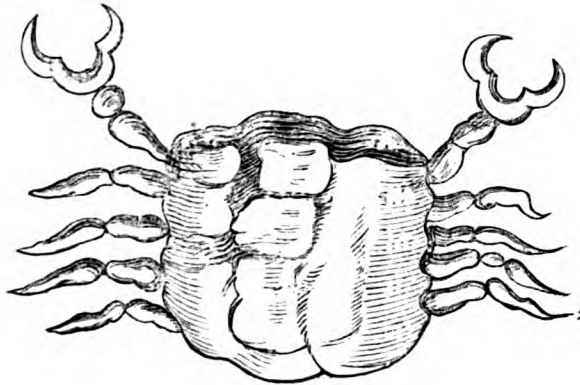


FIG. IX.—THE CRAB.

Before the paws a fair large star is borne,  
 One from the front, one from the hinder feet,  
 Another near the knees and tail. But all, 145  
 Each after each, ungrouped, unnamed revolve.

The *Twins* are 'neath its head, in midst the *Crab* ;<sup>6</sup>

<sup>1</sup> For further notice of this mythic legend, vide Hyginus, *Poeticon Astronomicum*, ii. 25 ; Ovid, *Metam.* i. 149.

<sup>2</sup> A very doubtful line.

<sup>3</sup> Whatever its brightness may have been, at present *Vindemiatrix* (vide *sup.* p. 10) is only a star of the third magnitude. It is, however, always to be remembered that great changes in light-power take place amongst the stars : thus  $\eta$  *Argus*, 'now barely visible with the naked eye,' at one time, like the lamps of Kleopatra, 'outburn'd Canopus,' and threatened to rival *Sirius*.

<sup>4</sup> The *Canes Venatici* and the *Coma Berenices*, which at present intervene between *Benetnasch* (= *Banät nasch*, 'Daughters of the Bier'), the tail-tip star of the *Great Bear*, and *Vindemiatrix*, being then 'ungrouped,' the *Bear* was the adjoining constellation ; and I understand the poet to mean that *Vindemiatrix* shone as brightly as the three tail-stars of the *Bear*, which are all of the second magnitude.

<sup>5</sup> (Where the *Bear* is.)

<sup>6</sup> *I.e.*, Under the middle of the *Bear's* body, between the *Twins* and the *Lion*.

And 'neath the hinder legs the *Lion* grandly shines.  
 These are the hottest pathways of the sun ;  
 And bare most fields appear of ears of corn  
 When first the sun advances to the *Lion*.<sup>1</sup>  
 On the wide sea then fall with sudden force  
 Whistling Etesian <sup>2</sup> blasts, nor fits a voyage with oars.  
 Then do broad ships best suit the deep, and then

150



FIG. X.—THE LION.

May helmsmen keep the rudder to the wind.  
 If you would see the *Charioteer*<sup>3</sup> and stars  
 Belonging to him, if of *Goat* and *Kids*  
 Report has reached you—they who oft behold  
 Men tossed about on the dark stormy sea<sup>4</sup>—

155

<sup>1</sup> So that the *Spica Virginis* was not originally connected with harvest (vide V. 97, note).

<sup>2</sup> *I.e.* 'Periodical.' As to the periodical winds of the Aigaion, the *βορέαι ἐρησιαί*, and the Aquilones Etesiae of Pliny, vide Hérodotos, ii. 20 ; vi. 140 ; vii. 168.

<sup>3</sup> At Troizên the Hêniochos was identified with Hippolytos the son of Theseus (Pausanias, II. xxxii. 1 ; cf. Euripidês, *Hippolytos*, 1423 *et seq.*).

<sup>4</sup> 'Insana Caprae sidera' (Horace, *Carmina*, III. vii. 6). 'Pluvialibus Hoedis Verberat imber humum'

All his huge form towards the left of the *Twins* 160  
 Inclining, you will find : the *Twister's* head  
 Revolves just opposite. On his left shoulder  
 The sacred *Goat*<sup>1</sup> which men say offered Zeus its dug ;  
 Zeus' servants<sup>2</sup> call it the *Olenian*<sup>3</sup> *Goat*.  
 She is both large and bright ; but they—the *Kids*— 165  
 Shine somewhat feebly on the wrist of the hand.<sup>4</sup>  
 The horned<sup>5</sup> *Bull* fallen near the *Driver's*<sup>6</sup> feet



FIG. XI.—THE CHARIOTEER.

Behold. And very like him lie the stars ;  
 Thus is his head distinguished ; other mark  
 Is needless to discern the head, since stars 170  
 On both sides shape it as they roll along.<sup>7</sup>

(Vergil, *Aeneid*, ix. 668-9). 'Oleniae signum pluviale Capellae' (Ovid, *Fasti*, v. 113). The connexion of the mythological Goat, Aix ('the Springer'), with storm, is, however, much deeper than this (vide *L. K. O.* Sec. xix).

<sup>1</sup> The Goat Amaltheia. Another Kretan legend of the nurturing of Zeus (cf. Vs. 31-5). The LXX amusingly render Keren-happuch ('Horn-of-stibium,' *Job*, xlii. 14) by 'Αμαλθαιίας κέρας. None of the usual derivations of the name are satisfactory.

<sup>2</sup> Ὑποφῆται, i.e., the priests as expounders of oracles and revealers of sacred things, such as the Selloi (*Il.* xvi. 234).

<sup>3</sup> The mythic Ôlenos, a son of Hêphaistos, had two daughters, Aigê and Helikê, who, having nurtured Zeus, were severally changed into *Capella* and *Ursa*

*Major*. Aigê = Amaltheia. To treat the myth exhaustively would require a short monograph, but I may add with Delambre, 'Olénie, c'est-à-dire portée sur les bras, ὠλένη, ulna.'

<sup>4</sup> Χεῖρ is often used of hand + arm.

<sup>5</sup> Κεράων Ταῦρον. The original zodiacal Bull was probably represented by the *Urus* (*Bos primigenius*), the Assyrian *Rimu*, Heb. *Rém*, and Akkadian *Am-si* ('Horned-bull'), i.e., the Bull with huge horns, which latter name is exactly reproduced by Aratos. The animal appears in the A.V. of the Old Test. as the Unicorn.

<sup>6</sup> I.e., the feet of the *Charioteer*.

<sup>7</sup> An obvious resemblance between the natural position of stars and a constellation-figure is quite exceptional (vide *E.* Introduction, x).







THE  
'HEAVENLY DISPLAY.'

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FIG. I.—SIGN-POTENT NIGHT.

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TO  
THE RIGHT HONOURABLE  
WILLIAM EWART GLADSTONE, M.P.  
WHO, AMID THE MOST ARDUOUS PUBLIC LABOURS,  
HAS NEVER CEASED TO FIND REFRESHMENT  
IN THE STUDY OF ARCHAIC TIMES.





## P R E F A C E .

---

IN the present work I place before the reader in an English form, the famous Poem of Aratos which has supplied our modern world with the now familiar ancient constellations. The *Phainomena* was one of the most popular productions of antiquity, and its theme is replete with a many-sided interest—astronomical, historical, mythological, and psychological. On Hellenic astronomy generally I have touched only slightly, for reasons mentioned in the following pages ; and the work purports far more to indicate than to exhaust the numerous lines of thought and branches of investigation which are connected with stellar research generally and with the *Phainomena* in particular. The statements of Aratos are frequently very incorrectly quoted, and it seemed desirable, in the first place, to place them plainly on record, and to accompany them with a short Introduction and some brief illustrative notes. Certain lines of investigation and study of the Poem have become obsolete, for reasons which will appear to the reader as he proceeds. One of the chief points of interest in the enquiry is the connexion, ever becoming clearer, between Hellenic and Euphratean astronomy, a subject necessarily almost entirely unknown to earlier writers.

This work is also in strict continuation of my former studies on

The Sun (*The Great Dionysiak Myth*),

The Moon (*The Unicorn, and The Myth of Kirkê*), and

The Stars (*The Law of Kosmic Order, and Eridanus: River and Constellation*).

The same system, mythological and general, which I have supported and illustrated in former monographs reappears in these pages. It does not pretend

to resolve all archaic stories into accounts of natural phenomena ; but it fully recognizes the immense influence which natural phenomena, and anthropomorphic and other analogies drawn from the animal kingdom, exercised upon the mind of early man.

My hearty thanks are due to my kind friends Dr. F. A. Paley and Mr. John T. Plummer for their valuable assistance, most freely given, Dr. Paley's in the purely classical, and Mr. Plummer's in the purely astronomical, portion of the work ; whilst, at the same time, I am alone responsible for the form in which it appears.

For an account of the earlier history of the Signs of the Zodiac, and for a general theory of the constellation-figures, mythological principles adopted, and details respecting numerous special asterisms, I must refer the reader to my works on stellar research above mentioned, and to my Paper *On the Origin of the Signs of the Zodiac in Archaeologia*, xlvii. part ii.

BARTON-UPON-HUMBER :

May, 1885.

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## MAP.

## ABBREVIATIONS.

BROWN, ROBT. JR., *G. D. M.*—*The Great Dionysiak Myth.* (London : Longmans, 1877-8).

————— *U.*—*The Unicorn : a Mythological Investigation.* (London : Longmans, 1881).

————— *L. K. O.*—*The Law of Kosmic Order.* (London : Longmans, 1882).

————— *E.*—*Eridanus : River and Constellation.* (London : Longmans, 1883).

————— *K.*—*The Myth of Kirkê : including the Visit of Odysseus to the Shades. An Homerik Study.* (London : Longmans, 1883).





# INTRODUCTION.

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## SECTION I.

### CHARACTER AND OUTLINE OF THE POEM.

ARATOS, upon whom the composition of the *Diosêmeia*, and the versification of the *Phainomena* of the astronomer Eudoxos, who lived cir. B.C. 403–350, have conferred immortality,<sup>1</sup> was a native of Soloi, in Kilikia; and therefore, as has frequently been noticed, a fellow-countryman of S. Paul, who shows evident familiarity with his principal poem. This work was undertaken at the request of Antigonos Gonatas, King of Makedonia, whose reign extended from B.C. 277 to 239, and at whose court Aratos lived and died. The composition of the *Phainomena* is generally placed cir. B.C. 270, and few works have been more popular. Numbers of commentators, at the head of whom stands Hipparchos, have exercised their learning and ingenuity upon it; whilst Cicero<sup>2</sup> and Germanicus<sup>3</sup> turned it into Latin verse. With the former it was evidently an especial favourite, and he remarks: ‘Constat inter doctos *hominem ignarum astrologiae, Aratum, ornatissimis atque optimis versibus de coelo stellisque dixisse.*’<sup>4</sup>

That Aratos was personally innocent of any scientific astronomical knowledge all the world has always agreed with Cicero; and it is questionable whether even Eudoxos himself was so very greatly the poet’s superior in this respect. But, notwithstanding, the *Phainomena* is of the highest interest, not only because it is the foundation of all the uranographic maps and lists now used by modern science, but also because it contains most valuable reminiscences of earlier stages

<sup>1</sup> ‘Cum Sole et Luna semper Aratus erit’ (Ovid, *Amorum*, I. xv. 16).

<sup>2</sup> Vide *De Naturâ Deorum*, xli.–xliv.

<sup>3</sup> Possibly the Emperor Domitian.

<sup>4</sup> *De Oratore*, i. 16.

of sidereal observation and mythologico-religious belief in Western Asia. This phase of the enquiry I do not propose to consider exhaustively here, inasmuch as I have already treated of it elsewhere;<sup>1</sup> and I now merely place before the English reader a faithful translation of the poem, as distinguished from a loose and inaccurate paraphrase. It is equally beyond my present purpose to enter into any detailed account of the rise and progress of early Hellenic astronomy; especially since this field has already been ably explored by Delambre, Sir G. C. Lewis, and others.

Cicero, in an interesting passage, states that 'Gallus assured us [that the] solid and compact [model] globe was a very ancient invention, and that the first [Hellenic] model had been originally made by Thales of Miletus,' cir. B.C. 636-546, renowned, amongst other things, for having fallen into a well whilst stargazing.<sup>2</sup> 'That afterwards Eudoxus of Cnidus, a disciple of Plato, had traced on its surface the stars that appear in the sky, and that many years subsequently, borrowing from Eudoxus this beautiful design and representation, Aratos had illustrated it in his verses, not by any science of astronomy, but by the ornament of poetic description.'<sup>3</sup> Anaximandros of Milêtos, B.C. 610-547, the immediate philosophical successor of Thalês, according to Diogenês Laertios, 'was the first discoverer of the gnomon; and he placed some in Lakedaimôn on the sun-dials there, and they showed the solstices and the equinoxes. He was the first person, too, who drew a map of the earth and sea, and he also made a globe.'<sup>4</sup> In statements of this kind by classical writers the introducer or the popularizer is constantly described as the inventor. Thus, in the present instance, Anaximandros was not 'the first discoverer' of the gnomon; for, as Hêrodotos truly says, 'the gnomon with the division of the day into twelve parts, was received by the Greeks from the Babylonians.'<sup>5</sup> But the point to be here noticed is, that the Asiatic Hellenes had long been familiar with maps and other representations uranographic<sup>6</sup> and geographic. Thus, Hêrodotos saw and derided 'numbers of

<sup>1</sup> Vide R. B. Jr., *L. K. O.; E.; On the Origin of the Signs of the Zodiac*, 1882 (in *Archæologia*, xlvii. part 2).

<sup>2</sup> Vide Platôn, *Theaitetos*, lxxix.

<sup>3</sup> *De Republicâ*, i. 14, ap. Yonge.

<sup>4</sup> *Peri Biôn*, ii. 3; vide Strabo, I. i. 11.

<sup>5</sup> Hêrodotos, ii. 109, ap. Rawlinson.

<sup>6</sup> Euripidês describes a uranographic representation on tapestry which formed the ceiling of a tent. The figures portrayed were Ouranos collecting the stars in

the ethereal circle; Hêlios driving his horses down the west, drawing Hesperos with him; black-robed Night in a two-horsed chariot, the Stars following her; the Pleiad in mid ether; 'sword-bearing Oriôn' (vide p. 38); above, Arktos twisting around the pole; the Full-moon, the month-divider; the Hyades, the surest sign for sailors; and, lastly, light-bearing star-chasing Eôs (*Iôn*, 1146-58. As to the Hellenic view of the kosmic and stellar dance, vide *G. D. M.* i. 105 *et seq.*).

persons drawing maps of the world';<sup>1</sup> and states that Aristagoras of Milêtos, which city, it should be noticed, was the abode of the sages above mentioned, cir. B.C. 500, produced to Kleomenês of Sparta 'a bronze tablet, whereupon the whole circuit of the earth was engraved, with all its seas and rivers.'<sup>2</sup> This tablet was a *pinax*, a term meaning (1) a board; (2) a plate or wooden trencher; (3) a plate with anything drawn or engraved on it (= a map); and (4) the plate etc. on which in later times astrological schemes were erected, so that ἡ περὶ πίνακα μέθοδος means 'the art of casting nativities.'

Aratos, then, had before him the two prose works of Eudoxos—namely, the *Phainomena* ('Appearances,' or 'Heavenly Display'), and the *Enoptron* ('Mirror'), which seem to have greatly resembled each other, one or several star-maps with constellation-figures, and a globe; and from these materials, and not from any observations of his own, he produced the poem. Eudoxos was to some extent an original observer, but whilst his compilations would include the results of his own investigations, they were otherwise no more original than the poem of Aratos itself. That is to say, the scheme of constellation-figures was already archaic in his time; and statements such as that Oinopidês of Chios, a sage of uncertain date, 'discovered' the Zodiac, are about as valuable as an assertion that 'Homer' discovered the *Great Bear*. As to the Zodiac, Pliny gravely informs us that 'Signa in eo Cleostratus [who 'lived some time between B.C. 548 and 432'] et prima Arietis ac Sagittarii.'<sup>3</sup> He might as well have stated that So-and-So put the letters in the alphabet. A far more important assertion, when rightly understood, and one which was literally received by Sir Isaac Newton, is made by Clement of Alexandria, who says, 'Hermippus of Berytus [cir. A.D. 100] calls Cheiron the Centaur wise; about whom, he that wrote *The Battle of the Titans* [probably either Arktinos, cir. B.C. 776, or Eumêlos of Korinth, cir. B.C. 760] says, "that he first led the race of mortals to righteousness, by teaching them the solemnity of the oath, and propitiatory sacrifices and the figures of Olympus"'<sup>4</sup> (σχήματ' Ὀλύμπου<sup>5</sup>). Thus Eudoxos summarized the astronomical observations

<sup>1</sup> Hérodotos, iv. 36.

<sup>2</sup> *Ibid.* v. 49.

<sup>3</sup> *Hist. Nat.* ii. 6.

<sup>4</sup> *Stromata*, i. 15, ap. Wilson.

<sup>5</sup> The reading σχήματ' Ὀλύμπου has also been suggested. Sir G. C. Lewis (*Astronomy of the Ancients*, 76) vainly endeavours to show that the constellations are not intended, whilst admitting that Clement

understood the passage as referring to them. His objection that 'the third subject of his [Cheirôn's] instruction can hardly be the forms of the constellations, which have no connexion with morality,' is completely answered by a perusal of the poem of Aratos, where their connexion with 'morality' and the goodness of the gods is remarkably set forth. As to Cheirôn ('the Handy'), vide *E. Sec.* ix.

of previous times and of his own era ; and the practical object in view was to facilitate the finding of the hour of the night, to note the passing seasons,<sup>1</sup> and in various ways to assist travellers, especially sailors. Stars and constellations obtained in connexion with travelling a new and derivative significance, being rainy, raging, or otherwise, in accordance with synchronous weather occurrences. These humble but useful objects were in agreement with an age which was ignorant of the precession of the equinoxes, and shrank back in alarm from any attempt to describe the courses of the planets.<sup>2</sup> Aratos always speaks of the constellation-figures as of unknown antiquity :—

‘Some man of yore  
A nomenclature thought of and devised,  
And forms sufficient found.’<sup>3</sup>

The stars are so numerous and so much alike that some such classification was absolutely necessary to enable us to speak of them with any exactness, and therefore the wonderful discoverer and inventor stepped in to assist mankind :—

‘So thought he good to make the stellar groups,  
That each by other lying orderly,  
They might display their forms. And thus the stars  
At once took names and rise familiar now.’<sup>4</sup>

This gifted individual must certainly have been the chief of those shadowy ‘Chaldean shepherds’ who kindly organized stellar nomenclature and arrangement in the course of a few clear evenings.

The style of the poem has, as noticed, been highly praised ; and a considerable degree of elegance and, in one or two passages, even of elevation may be fairly conceded to it ; yet on the whole the poet, independently of the fettering effect produced by the constant repetition of similar detail, falls sadly under the benumbing influence of a late and imitative age, devoid of original fire. In several instances when he wanders from the immediate subject his flights are of the feeblest, as where he compares alarmed sailors desirous to reach haven to water-birds, though these latter are particularly free from any such wishes or troubles ;<sup>5</sup> or where, again, he expatiates at some length on the fact that when at sea, it is more advantageous to be prepared for bad weather than to be taken

<sup>1</sup> Cf. Aischylos, *Agamemnon*, 4-5 :—  
*ἄστρον κάτοιδα νυκτέρων δμήγγυριν,*  
*καὶ τοὺς φέροντας χεῖμα καὶ θέρος βροτοῖς.*

<sup>2</sup> Vide vs. 454-61.

<sup>3</sup> Vs. 373-5.

<sup>4</sup> Vs. 379-82.

<sup>5</sup> Vs. 296-9.

altogether by surprise.<sup>1</sup> Dialectic peculiarities, moreover, and an occasional great obscurity of meaning render him, upon the whole, a not unworthy citizen of Soloi. The poem consists of :—

The Prelude (Vs. 1–18) ; an invocation of Zeus and the Muses. The Signs of heaven are shown by Zeus to his children—mankind, in order to instruct and stimulate them to worthy effort. The poet also salutes ‘the earlier race of men,’ who were in some way more specially connected with the stars than are their successors.

A notice of the axis. The *Bears*, and a Kretan tale about them (Vs. 19–44). Phoinikians steer by the *Lesser Bear*, which is the better plan.

The *Serpent* (Vs. 45–62).

The *Kneeler* (Vs. 63–73. Vide also Vs. 614–24, 669–73). This constellation was evidently the subject of much curiosity ; all tradition respecting the personage represented had been lost.<sup>2</sup>

The *Snake-holder* and other Signs (Vs. 74–95).

The *Virgin*, and the elegant legend of Justice (Vs. 96–140). This unusually lengthy episode was probably intended to be in some way complimentary to Antigonos.

Notice of certain ungrouped stars (Vs. 141–6), which afterwards became the *Coma Berenices*.

The *Lion* and other Signs (Vs. 147–55).

The *Charioteer* with the *Olenian Goat* and *Kids* (Vs. 156–66).

The *Bull* with the *Rainy-ones* (Vs. 167–78). The stars of this constellation are said to naturally resemble the form of a bull.<sup>3</sup>

*Kêpheus* and Family (Vs. 179–204).

The *Horse*, and the legend of the Horse’s Fount (Vs. 205–24).

The *Ram* and other Signs (Vs. 225–47).

*Perseus* (Vs. 248–53).

The *Clusterers* (Vs. 254–67).

The *Lyre* and other Signs (Vs. 268–84).

The *Goat* : dangers at sea (Vs. 285–99).

The Signs in the previous month (Vs. 300–10).

<sup>1</sup> Vs. 420–9.

<sup>2</sup> Cf. Manilius : ‘Nixa venit species genibus, sibi conscia causae’ (*Astronomicon*, i. 322).

<sup>3</sup> Vide Rev. Wm. Houghton, *Picture Origin of the Characters of the Assyrian Syllabary*, 16.

The *Arrow, Eagle and Dolphin* (Vs. 311–18).

The Southern Stars—*Orión* (Vs. 319–25).

The *Dog* (Vs. 326–37).

Other southern Signs (Vs. 338–66).

Ungrouped stars : the archaic star-arranger (Vs. 367–85).

The *Southern Fish* : nameless stars (Vs. 386–401).

The *Altar* ; kindliness of Night, dangers at sea (Vs. 402–35).

The *Centaur*, with the *Wild-beast* (Vs. 436–42).

The *Water-snake, Bowl, and Crow* (Vs. 443–9).

The star ‘*Dog’s-precursor*’ ; stellar regularity (Vs. 450–3).

Reference to the *Five Planets* ; an account of them not within the scope of the work (Vs. 454–61).

Four *Circles* of the heavens (Vs. 462–8).

The *Milky Way* (Vs. 469–79).

The *Tropic of Cancer* and Signs adjacent (Vs. 480–500).

The *Tropic of Capricorn* and Signs adjacent (Vs. 501–10).

The *Equinoctial* and Signs adjacent (Vs. 511–24).

The *Ecliptic* and Signs adjacent (Vs. 525–68).

The Twelve Signs of the Zodiac and their Paranatellons (Vs. 569–732).

The Sun, except in a stellar connexion, and the Moon are not treated of, and the poem is free from any astrological colouring. The *Phainomena* is the Lay of the Unwandering Stars, and is quite distinct in every way from the *Diosêmeia* (‘Omens of the Sky’) with which it is generally printed, as if one poem. A feeling of pronounced piety pervades the work, and Aratos would seem to have been, like Hêrodotos, an eminently god-fearing man. Soudas highly praises the Prelude, τὰ Φαινόμενα· ὧν θαυμάσιος ἡ εἰσβολὴ καὶ ὁ ζῆλος Ὀμηρικός. It is certainly at once tender, refined and elevated. Soudas also attributes numerous other works to the poet, all of which except the *Diosêmeia* are lost. ‘It appears,’ says Ottley, in his very interesting and important essay, ‘to have been customary, from the first, to illustrate the Phaenomena of Aratus with drawings ; and in doing this the artists employed are said to have sometimes taken unwarrantable liberties with the text in order to make it accord with their figures.’<sup>1</sup> He justly attributes the preservation of the poem mainly to the interest lent it by these designs.

<sup>1</sup> On a MS. of Cicero’s Translation of Aratus, 105 (in *Archaeologia*, xxvi.) ; vide V. 518 and Appendix III.

The *Phainomena*, both from what it states and from what it does not state, gives rise to a vast amount of considerations astronomical, mythological and historical. Many of these have been dealt with by the ancient commentators, and, by Grotius, Buhle, Delambre, and others ; but more yet remain for investigation and treatment in connexion with modern discovery in Euphratean regions. The great Hipparchos, whose map was the heavens themselves, was the first Hellene to catalogue the stars, of which he names 1,080 ; and this really fine achievement continued to excite the extreme admiration of posterity for ages. Even in the time of Pliny it seems to have been spoken of with bated breath ; for the Roman compiler observes, ‘ Hipparchus, nunquam satis laudatus, . . . ausus, rem etiam Deo improbam, annumerare posteris stellas.’<sup>1</sup> The star-catalogue of Hipparchos<sup>2</sup> is, in the main, preserved in the seventh and eighth books of the *Megalê Syntaxis tês Astronomias* of Ptolemy, commonly called by its Arabic title the *Almagest* (*i.e.* ‘ The Greatest ’) ; and by mapping out the stars in the constellations of Ptolemy, with such due allowance for precession as would broadly harmonize with the general description in the *Phainomena*, it would be possible, with the assistance of the ancient MS. called Cicero’s Aratos, and other classical representations, and aided by archaeological knowledge, to reconstruct the constellation-figures ; and to reproduce them in a form not very unlike that in which they must have first appeared in the original pages of Aratos.

In the following translation I have nearly always followed the text of Bekker. The 732 lines of Greek having been rendered into the same number of English lines, in most cases the number of a verse applies to the original as well as to the translation. The nature of the subject, involving as it does an almost ceaseless repetition, including tautology, to which latter incident the ancients were not sensitive, weighs heavily against an original composition, and still more against any rhythmical translation which has claims to fidelity. But the attempt to improve facts when it is our duty to reproduce them, constitutes one of those faults which, however common, is, when applied to ancient art or literature, almost unpardonable.

<sup>1</sup> *Hist. Nat.* ii. 26.

<sup>2</sup> Vide Baily, *The Catalogue of Ptolemy, etc.* (Memoirs of the Royal Astronomical Society, vol. xiii.).



## SECTION II.

## THE CONSTELLATIONS OF ARATOS.

THE following constellations are more or less described in the poem :—

- I. The *Lesser Bear* (Arktos Oligê). The *Arktos Mikra* of Ptolemy, *Ursa Minor* ; called, like her fellow, *Wain* (Amaxa), but known distinctively as *Trail-of-light*<sup>1</sup> (Kynosoura).
- II. The *Greater Bear* (Arktos Megalê). *Ursa Major*, also called the *Wain* (Amaxa<sup>2</sup>), but known distinctively as the *Twister* (Helikê).
- III. The *Serpent* (Drakôn). *Draco*. *Anguis* (Manilius).
- IV. The *Kneeler* (Engonasin). *Nixus* (Cicero), *Genunixus* (Ovid, Germanicus), *Nixa* genu species (Manilius), *Ingeniculatus* (Vitruvius), *Ingeniculus* (Firmicus). Afterwards called *Hêraklês* (Hercules).
- V. The *Crown* (Stephanos). *Corona Borealis*.
- VI. The *Snake-holder* (Ophiouchos). *Anguitenens*, *Serpentarius*. In this is the *Snake* (Ophis), *Serpens*.
- VII. The *Scorpion* (Skorpios.) *Nepa* (Cicero), said to be an 'African' word. *Scorpius*, *Scorpio*.
- VIII. The *Claws* (of the Scorpion. Chelai). Subsequently superseded by the *Balance* (Libra).
- IX. The *Bearward* (Arktophylax). Also called the *Ploughman* (Boötes).
- X. The *Virgin* (Parthenos). *Virgo*. Indian form, *Pathona*.
- XI. The *Twins* (Didymoi). *Gemini*. Indian form, *Tituma*.
- XII. The *Crab* (Karkinos). *Cancer*. Indian form, *Kulira*.<sup>3</sup>

<sup>1</sup> Vide Sir G. W. Cox, *Mythology of the Aryan Nations*, edit. 1882, p. 233.

<sup>2</sup> V. 27 ; cf. II. xviii. 487 ; Od. v. 273.

<sup>3</sup> *I.e.*, Kolouros, a term used by Proklos of the

great circle passing through the solstitial points, and hence equivalent to *Cancer*. The Indians borrowed the zodiacal and planetary names from the Hellenes (vide *L. K. O.* 30).

- XIII. The *Lion* (Leôn). *Leo*. Indian form, *Leya*.
- XIV. The *Charioteer* (Hêniochos). *Auriga*. In this are the Olenian *Goat* (*Aix*), *Capra*, *Capella*<sup>1</sup>; and the *Kids* (Eriphoi), *Hoedi*.
- XV. The *Bull* (Tauros). *Taurus*. Indian form, *Tavuri*. In this are the *Rainy-ones* (Hyades).
- XVI. *Kêpheus*. *Cepheus*. Indian form, *Capuja*. Cf. the Great Pyramid King Khufu.
- XVII. *Kassiopeia*. *Cassiopeia*. Indian form, *Casyapi*.
- XVIII. *Andromedê*. *Andromeda*. Indian form, *Antarmada*.<sup>2</sup>
- XIX. The *Horse* (Hippos). *Equus* (Manilius), *Pegasus*.
- XX. The *Ram* (Krios). *Aries*. Indian form, *Kriya*.
- XXI. The *Delta* (Deltôton). *Triangula*.
- XXII. The *Fishes* (Ichthyês). *Pisces*.
- XXIII. *Perseus*. Perhaps the Parsondas of Ktêsias. Indian form, *Parasiea*.
- XXIV. The *Clusterers*<sup>3</sup> (Plêiades). The *Pleiades*.
- XXV. The *Lyre* (Lura). *Lyra*. Otherwise the *Shell* (Chelus). *Fidicula* (Pliny).
- XXVI. The *Bird* (Ornis). *Cygnus* (Manilius).
- XXVII. The *Water-pourer* (Hydrochoös). *Aquarius*. Indian form, *Hridroga*.
- XXVIII. The *Horned-goat* (Aigokerôs). *Capricornus*, *Caper*. Indian form, *Akokera*.
- XXIX. The *Archer* (Toxotês). *Arcitenens*, *Sagittipotens* (Cicero). *Sagittarius*. Indian form, *Taukshika*.
- XXX. The *Arrow* (Oïstos). *Sagitta*.
- XXXI. The *Eagle* (Aetos). *Jovis ales* (Manilius), *Aquila*.
- XXXII. The *Dolphin* (Delphis). *Delphinus*.
- XXXIII. *Oriôn*. Older Hellenic forms of the name—Aoriôn, Oariôn, Uriôn.<sup>4</sup>

<sup>1</sup> Called in Akkadian Dilgan ('the Messenger-of-light').

<sup>2</sup> Vide *U.* 55; *K.* 28.

<sup>3</sup> Vide Hahn, *Tsuni-||Goam*, 147. I think this derivation is decidedly preferable to that which connects the name with a 'sailing season.' Note also the description of the *Cluster* (Vs. 254-6), and cf. the Heb. Kimah (*Job*, ix. 9; xxxviii. 31; *Amos*, v. 8),

the Pleiades, which 'is evidently nothing but the Assyrian *kimtu*, "family." The stem is *kamû*, "to tie," the family being called *kimtu* because its members are connected by one common tie' (Delitzsch, *The Hebrew Language viewed in the Light of Assyrian Research*, 1883, pp. 69-70).

<sup>4</sup> Oriôn = the Akkadian Ur-ana ('Light of heaven,' vide *K.* 148, note 4).

- XXXIV. The *Dog* (Kuôn). *Canis Major*.  
 XXXV. The *Hare* (Lagôs). *Lepus*.  
 XXXVI. *Argô*. *Navis*, *Navis Argo*.  
 XXXVII. The *Sea-monster* (Kêtos). *Pistrix* (Cicero), *Cetus* (Manilius).  
 XXXVIII. The *Stream* (Potamos). *Amnis* (Manilius).  
 XXXIX. The *Fish* (Ichthys). Called Notios. *Notius Piscis* (Manilius).  
 XL. The *Altar* (Thytêrion). *Ara*. *Thymiatêrion* (Ptolemy), *Nektar*  
 (the *Katasterismoi*, in voc.), *Pharos*, *Sacrarius* (Schol. in German-  
 icus), *Thuribulum* (Germanicus).  
 XLI. The *Centaur* (Kentauros). *Centaurus*. In this is the *Wild-beast*  
 (Thêrion), *Lupus*.  
 XLII. The *Water-snake* (Hudra). *Hydra*.  
 XLIII. The *Bowl* (Krêtêr.) *Crater*.  
 XLIV. The *Crow* (Korax). *Corvus*.

The poet also notices <sup>1</sup> but does not name :—

- XLV. The *Southern Crown* (Stephanos Notios). *Corona Australis*.

The following particular stars are noticed by name :—

- I. *Bear-watcher* <sup>2</sup> (Arktouros). *Arcturus* ( $\alpha$  Boötis).
- II. *Ear-of-corn* <sup>3</sup> (Stachys). *Spica* ( $\alpha$  Virginis).
- III. *Fruit-plucking-herald* <sup>4</sup> (Protrygêtêr). *Vindemiatrix* ('Mistress of  
 the vintage.'  $\epsilon$  Virginis), *Vindemitor* (Ovid).
- IV. The *Scorcher* <sup>5</sup> (Seirios). *Sirius* ( $\alpha$  Canis Majoris). Kun' Oriônos  
 (Homer). Kuôn Seirios (Aischylos).
- V. The *Dog's-precursor* <sup>6</sup> (Prokyôn). *Antecanis* (Cicero), *Procyon*  
 ( $\alpha$  Canis Minoris). Even in the Hipparchos-Ptolemy star-list  
*Prokyon*, then become a constellation, has only two stars.

It is unnecessary for me to refer to the examination of the works of Eudoxos and Aratos by Hipparchos, not only because this study has been already fully analysed by Delambre ; but also, and chiefly, because the standpoint of Hipparchos in the matter was essentially incorrect. Being himself a practical astronomer he

<sup>1</sup> Vs. 399-402.

<sup>2</sup> V. 95.

<sup>3</sup> V. 97.

<sup>4</sup> V. 138. A doubtful line.

<sup>5</sup> Vs. 331, 340.

<sup>6</sup> V. 450.

naturally thought that the statements of Eudoxos and Aratos were intended to apply wholly to their own times, and embodied their own original observations ; whereas the facts which they report are to a great extent traditional and archaic, and belong to another and a far earlier epoch. Hipparchos was consequently much surprised at their apparently obvious and gross mistakes ; and, in the interests of science, proceeded to correct them.



THE  
HEAVENLY DISPLAY.

---

FROM Zeus we lead the strain,<sup>1</sup> he whom mankind  
Ne'er leave unhymned ; of Zeus all public-ways,  
All haunts of men are full, and full the sea  
And harbours ; and of Zeus all stand in need.  
We are his offspring ;<sup>2</sup> and he, mild to man, 5  
Gives favouring signs and rouses us to toil,  
Calling to mind life's wants ; when clods are best  
For plough and mattock, when the time is ripe  
For planting vines and sowing seeds he tells.  
Since he himself hath fixed in heaven these signs, 10  
The stars dividing ; and throughout the year  
Stars he provides to indicate to men  
The seasons' course, that all things duly grow.  
Him, therefore, first and last they aye appease.  
Hail, Sire, vast wonder, blessing to mankind ! 15  
Hail earlier race of men !<sup>3</sup> And Muses hail !  
Most merciful to all ; for me who hymn  
The stars with reverent mind make clear the song.

<sup>1</sup> ' Ab Jove principium magno deduxit Aratus  
Carminis ' (Germanicus).

<sup>2</sup> The famous *Τοῦ γὰρ καὶ γένος ἑσμέν* (vide *Acts*,  
xvii. 28).

<sup>3</sup> Including such personages as Orión, Képheus,  
Perseus, etc., whom the poet considers to have been  
especially connected with the stars.

Now some<sup>1</sup> in numbers, going divers ways,  
 Are ever drawn by heaven and ever joined ;<sup>2</sup>  
 Yet never doth the axis change the least,  
 Aye fixed e'en as it is ; and has in midst  
 The earth in equipoise, and carries round the sky.  
 This axis forms on either side a pole ;<sup>3</sup>  
 The one we see not, but the opposite

20

25



FIG. II.—KRONOS.

Is high o'er ocean in the north ; two *Bears*<sup>4</sup>  
 Called *Wains* move round it, either in her place.

<sup>1</sup> *I.e.* the ἀπλανεῖς ἀστέρες of the early Hellenic stargazers, the ἄστρα ἐνδεδεμένα ('fixed stars') of Aristotle.

<sup>2</sup> *I.e.*, maintain the same relative positions.

<sup>3</sup> Clement of Alexandria explains 'Atlas' (as if ἄ-τλας) as 'the unsuffering pole' = 'motionless eternity' (*Stromata*, v. 6 ; vide V. 598, note).

<sup>4</sup> Euripides inappropriately says: 'Twin bears

with the swift-wandering rushings of their tails (περὶ γων) guard the Atlanteian pole' (*Peirithoös*, *Frag.* iii. ap. Clement. Alex., *Stromata*, v. 6). The *Bears*, whose 'slow and solemn motion' (cf. Vs. 225-7) caused the Arabs to style them the *Great* and *Little Coffins*, are anything but 'twins' either in size or age.

Each has her head towards her fellow's back,  
 And downwards from the shoulder are they borne,  
 To shoulders heads reverted.<sup>1</sup> If 'tis true, 30  
 From Krete to heaven these by the will of Zeus  
 Mounted, what time they him concealed a babe  
 In odorous Diktê, near the Idaian hill,  
 Within a cave, and nourished him a year,  
 Whilst the Kouretes<sup>2</sup> Kronos<sup>3</sup> were deceiving. 35  
 And *Trail-of-light* the one men call by name,



FIG. III.—THE SERPENT AND THE BEARS.

The other *Twister*. By it on the deep  
 Achaians gather where to sail their ships ;  
 Phoinikians to her fellow trust at sea.  
*Twister* is clear and easy to perceive,  
 Shining with ample light when night begins ;  
 Though small the other, 'tis for sailors better,  
 For in a smaller orbit all revolves :

<sup>1</sup> 'Placées de manière que la queue de l'une répond aux épaules de l'autre' (Delambre, *Histoire de l'Astronomie Ancienne*, i 61).

<sup>2</sup> As to the mysterious Kouretes, vide *G. D. M.*

i. 128 *et seq.* ; ii. 215 *et seq.*

<sup>3</sup> As to Kronos, a non-Aryan personage unconnected with Chronos ('Time'), vide *Ibid.* ii. 125 *et seq.* ; Duncker, *Hist. of Greece*, i. 431.



By it Sidonians make the straightest course.<sup>1</sup>

Between these two, like to a river's branch,  
A mighty prodigy, the *Serpent* twines  
In bendings vast around ; on either side  
His coil they move, and dread the dark-blue sea.<sup>2</sup>  
But o'er the one his lengthy tail is stretched,  
The other's wrapped in coil. And thus beside

45

50



FIG. IV.—THE SERPENT-DRAGON.

Bear *Twister's* head leaves off the *Serpent's* tail :  
The other has her head in coil ; and this  
Winds o'er the head itself, and gains the paw,<sup>3</sup>  
Then darting backward hastes away. Nor here

<sup>1</sup> Cf. Schol. *Il.* xviii. 487 ; Kallimachos, *Fragment* xciv. ; Diogenes Laertios, *Peri Bion*, i. 23 ; Hyginus, *Poeticon Astronomicum*, ii. 2 ; Ovid, *Tristia*, IV. iii. 1 ; *Fasti*, iii. 107 ; Manilius, *Astronomicum*, i. 304-8.

<sup>2</sup> Οὗ δ' ἄμμορός ἐστι λοετρῶν Ὀκεανοῖο (*Il.* xviii.

489 ; *Od.* v. 275) ; 'Arctos, oceani metuentes aequore tingi' (Vergil, *Georgicon*, i. 246). The *Lesser Bear* is not an archaic constellation (cf. Diogenés Laertios, *Thales*, ii.).

<sup>3</sup> The hind paw (Schol.).

Alone, nor from one star is bright its head ;  
 But two on temples, two on eyes, and one  
 Low on the jaw-tip of the terrible Sign.<sup>1</sup>  
 The head's aslant, and seems as if 'twere nodding  
 Towards the *Twister's* tail-tip ; and in line  
 With this the mouth and right side of its face.

55

60

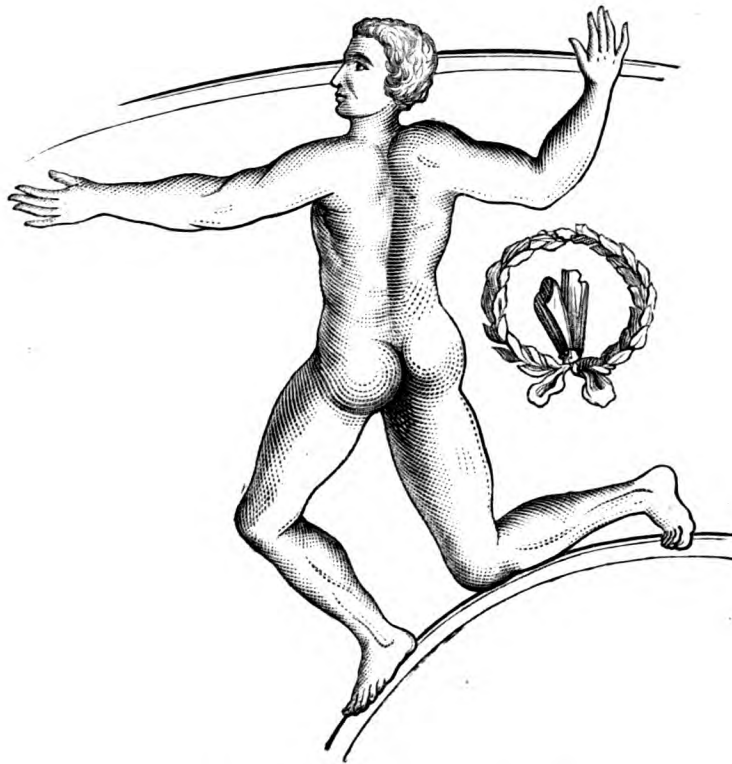


FIG. V.—THE KNEELER AND THE CROWN.

That head has just its course where with each other  
 The topmost settings and the risings join.<sup>2</sup>

<sup>1</sup> Δεινοῖο πελώρου. An Homeric phrase (cf. *Il.* v. 741; *Od.* xi. 634), applied to 'a Gorgeian head,' such as that of Medousa the Gorgó (vide *U. Sec.* vii). The principal star of the *Caput Medusae* in the constellation *Perseus* is now called Algol = Al Ghul ('the Ghoul'), and, according to astrologers, is 'the most unfortunate, violent, and dangerous star in the heavens.' Aratos does not mention Medousa in connexion with *Perseus*. It is not necessary to render πελώρ 'monster.' The essential meaning of the word is portent (cf. *Il.* ii.

321: πέλωρα θεῶν, 'portents sent from the gods').

<sup>2</sup> The Schol. says: αἱ δύσεις καὶ ἀνατολαὶ πλησιάζουσιν ἀλλήλαις, λήγουσα μὲν ἡ ἀνατολή, ἀρχομένη δὲ ἡ δύσις, κατὰ τὸν μεσημβρινὸν πόλον ἵγουν κύκλον, ὅς ἐστι μεσαίτατος πάσης τῆς σφαίρας. κ.τ.λ. And quotes *Od.* x. 86: ἐγγύς γὰρ νυκτὸς καὶ ἡματός εἰσι κέλευθοι. Micyllus observes, 'Caput Draconis pertingit usque ad maximum circulum semper apparentium. Sub hoc circulo miscetur extremi ortus et occasus. Nam quae proxime sunt intra hunc circulum occidere, quae extra,

Near this, and like a toiling man, revolves  
 A form. Of it can no one clearly speak,  
 Nor to what toil he is attached ; but, simply,  
*Kneeler*<sup>1</sup> they call him. Labouring on his knees,  
 Like one who sinks he seems ; from both his shoulders  
 His arms are raised ; each stretching on its side  
 About a full arm's length. And his right foot

65

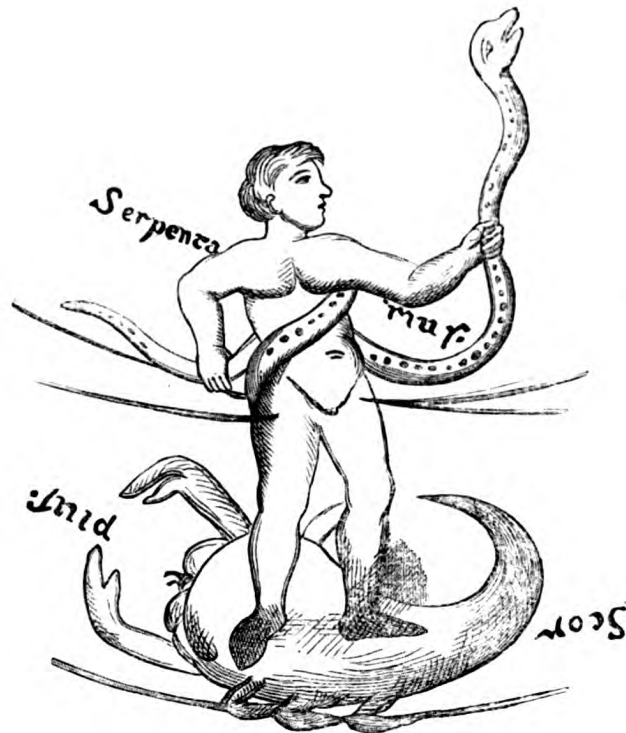


FIG. VI.—THE SNAKE-HOLDER AND THE SCORPION.

Is planted on the twisting *Serpent's* head.  
 And here that *Crown*<sup>2</sup> which Dionysos placed,  
 Of Ariadnê dead a glorious sign,<sup>3</sup>  
 Revolves behind the weary toiler's shape.

70

semper apparere incipiunt.' So Strabo: 'The arctic circle is the limit of the rising and the setting stars' (Strabo, I. i. 6).

<sup>1</sup> Originally the Kneeling Izdubar, the great solar Euphratean hero, a phase of the god Bel who, in the grand strife of Kosmos against Chaos, overcomes

Tiamat the Dragon. The *Kneeler* was afterwards very properly called Héralês—Hercules, the corresponding personage in the Hellenic Pantheon (vide *L. K. O.* 86 ; *E. Sec.* xxix).

<sup>2</sup> As to this myth, vide *E. Sec.* xxix.

<sup>3</sup> Vide Ovid, *Fasti*, iii. 459 *et seq.*

To his back the *Crown* is near, but by his head  
 Seek the *Snake-holder's*<sup>1</sup> head ; and then from it  
 You may behold his shining form itself ;  
 So bright the gleaming shoulders 'neath his head  
 Appear. These even when the moon is full  
 Can be beheld ; the hands are quite unequal ;  
 For feeble glitter flickers here and there.  
 Yet nathless they are seen, since they are large.<sup>2</sup>  
 Both of them grasp a *Snake*, which round the waist  
 Of the *Snake-holder* twines ; but he well-fixed,

75

80

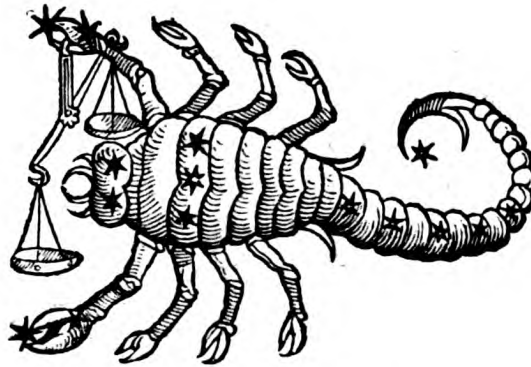


FIG. VII.—THE SCORPION.

With each foot presses on a monster huge,  
 The *Scorpion*, o'er eye and breast-scale standing  
 Upright, the *Snake*, meanwhile, in both hands writhing ;  
 Less in the right, most holds the left on high.  
 By the *Crown's* side the jaw-end lies along ;  
 Beneath the coils search for the mighty *Claws*,<sup>3</sup>  
 But they are scant of light and nothing fair.

85

90

<sup>1</sup> The two heads still appear almost close together on a modern uranographic globe.

<sup>2</sup> Aratos does not refer to the great size of the whole constellation, the 'Ophiuchus huge' of Milton (*Paradise Lost*, ii. 709). Delambre observes that he could not have had the constellation itself 'sous les yeux. Les mains sont comme les épaules.'

<sup>3</sup> The *μεγάλας χηλᾶς* being extended through a

whole zodiacal Sign, must of course have been out of proportion with the rest of the *Scorpion* ; and, suitably enough with the symbolical character of this creature as a most archaic type of the Darkness which stung to death the solar hero, as e.g. in the Orión-myth (vide *inf.* Vs. 641-6), the Claws were *φαίων ἐπιδενέες οὐδὲν ἀγναί.*

Behind the *Twister* moves, as if he drove,  
 The *Bearward*, whom mankind the *Ploughman*<sup>1</sup> call,  
 Because he seems to touch the wainlike *Bear*.  
 The whole is well in sight ; but neath his waist  
 The star *Bear-watcher*<sup>2</sup> brighter than the rest.

95

Beneath the *Ploughman's* feet the *Virgin*<sup>3</sup> seek,  
 Who carries in her hand the brilliant *Ear of corn*.<sup>4</sup>



FIG. VIII.—THE VIRGIN.

Whether she be *Astraios*-sprung,<sup>5</sup> whom men  
 Of old call sire of stars, or of another,

<sup>1</sup> Vide V. 585, note.

<sup>2</sup> *Arcturus*, fourth amongst stars of the first magnitude (vide V. 609).

<sup>3</sup> Originally the Euphratean *Istar*. Her primary phase was lunar, her secondary phase planetary (*Venus*). As connected with the Morning-star she was goddess of war, and as connected with the Evening-star, goddess of love.

<sup>4</sup> *Stachys* (*spica*) also signifies *pubes*. The cruel and dissolute *Istar*, who wearied her lover the solar-

power *Dumuzi* (*Tammuz*, vide *K.* 57 *et seq.*), was the exact opposite of *Dikê-Parthenos*, a beautiful Hellenic idea.

<sup>5</sup> *Astraios* ('Starry'), a personification of the star-lighted heaven, was mythic sire of the Winds, the 'fratres *Astraei*' (Ovid, *Metam.* xiv. 545), of the ἀστέρια 'Ἐωσφόρον' (*Venus-Istar*), and of 'the brilliant stars with which heaven is crowned' (Hesiod, *Theogonia*, 378-82; the Homeric τείρεα πάντα, τὰ τ' οὐρανὸς ἐστεφάνωται, *Il.* xviii. 485).

Calm may she glide. A further tale obtains,— 100  
 That once she was a denizen of earth,  
 Met mortals face to face, and ne'er disowned  
 Or men or women of the race of old,  
 But though immortal sat amid them all.  
 They used to name her Justice ; she would call 105  
 The elders to broad street or city-square,  
 Declare men's rights, and see that right was done.  
 As yet they knew not aught of grievous strife,  
 Nor aught of blameful faction, or of din ;  
 But thus they lived. Nor recked of ocean-toil, 110  
 For life<sup>1</sup> not yet did vessels bring afar ;  
 But ploughs and oxen, and the people's queen  
 Justice, right-giver, richly all things gave.  
 This was whilst earth maintained the golden race.<sup>2</sup>  
 In silver days she little mixed with man, 115  
 Changed, for she missed the ways of those of yore.  
 Yet through the silver age she still remained.  
 She came at even from the echoing hills  
 Alone, nor spoke to mortal soothing word ;  
 But when the highlands were replete with men, 120  
 These she would threaten, and their sins would chide,  
 And vow she ne'er would come in sight though called.  
 ' Oh what a race the golden sires have left,  
 Inferior to themselves ; but you will father worse.  
 Then wars and slaughter will prevail with men, 125  
 And woe shall fall upon them for their sins.'  
 She spake and sought the heights, and left the hosts  
 Whilst on her all were gazing earnestly.  
 But when these too had died, and others came,  
 The brazen race, more hurtful than their sires, 130  
 They for themselves first forged the highway knife—  
 An evil work, and first plough oxen ate ;

<sup>1</sup> *Bίον*, i.e., 'food.'<sup>2</sup> As to the *γένος χρύσειον*, vide Hesiod, *Erga*, 109 *et seq.*

Then Justice, hating such a race as these,  
Soared up to heaven, selecting this abode,  
Whence yet at night she shows herself to men 135  
The *Virgin*, near the *Ploughman* seen afar.<sup>1</sup>

O'er both her shoulders there revolves a star  
[In the right wing, *Fruit-plucking-he. ald* called,]<sup>2</sup>  
So large in size, and having such a gleam<sup>3</sup>  
As to show forth beneath the *Great Bear's* tail.<sup>4</sup> 140  
For that is bright, and bright the neighbouring stars ;  
When you see these you have no need to doubt.<sup>5</sup>

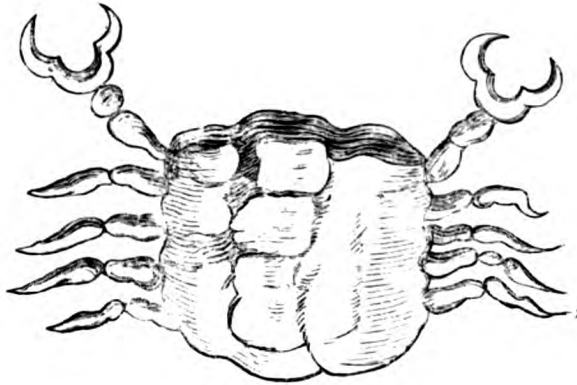


FIG. IX.—THE CRAB.

Before the paws a fair large star is borne,  
One from the front, one from the hinder feet,  
Another near the knees and tail. But all, 145  
Each after each, ungrouped, unnamed revolve.  
The *Twins* are 'neath its head, in midst the *Crab* ;<sup>6</sup>

<sup>1</sup> For further notice of this mythic legend, vide Hyginus, *Poeticon Astronomicum*, ii. 25 ; Ovid, *Metam.* i. 149.

<sup>2</sup> A very doubtful line.

<sup>3</sup> Whatever its brightness may have been, at present *Vindemiatrix* (vide *sup.* p. 10) is only a star of the third magnitude. It is, however, always to be remembered that great changes in light-power take place amongst the stars : thus  $\eta$  *Argus*, 'now barely visible with the naked eye,' at one time, like the lamps of Kleopatra, 'outburn'd Canopus,' and threatened to rival *Sirius*.

<sup>4</sup> The *Canes Venatici* and the *Coma Berenices*, which at present intervene between *Benetnasch* (= *Banät nasch*, 'Daughters of the Bier'), the tail-tip star of the *Great Bear*, and *Vindemiatrix*, being then 'ungrouped,' the *Bear* was the adjoining constellation ; and I understand the poet to mean that *Vindemiatrix* shone as brightly as the three tail-stars of the *Bear*, which are all of the second magnitude.

<sup>5</sup> (Where the *Bear* is.)

<sup>6</sup> *I.e.*, Under the middle of the *Bear's* body, between the *Twins* and the *Lion*.

And 'neath the hinder legs the *Lion* grandly shines.  
 These are the hottest pathways of the sun ;  
 And bare most fields appear of ears of corn  
 When first the sun advances to the *Lion*.<sup>1</sup>  
 On the wide sea then fall with sudden force  
 Whistling Etesian <sup>2</sup> blasts, nor fits a voyage with oars.  
 Then do broad ships best suit the deep, and then

150



FIG. X.—THE LION.

May helmsmen keep the rudder to the wind.  
 If you would see the *Charioteer* <sup>3</sup> and stars  
 Belonging to him, if of *Goat* and *Kids*  
 Report has reached you—they who oft behold  
 Men tossed about on the dark stormy sea <sup>4</sup>—

155

<sup>1</sup> So that the *Spica Virginis* was not originally connected with harvest (vide V. 97, note).

<sup>2</sup> *I.e.* 'Periodical.' As to the periodical winds of the Aigaion, the *βορέαι ἐτησίου*, and the Aquilones Etesiae of Pliny, vide Hérodotos, ii. 20 ; vi. 140 ; vii. 168.

<sup>3</sup> At Troizên the Héniochos was identified with Hippolytos the son of Theseus (Pausanias, II. xxxii. 1 ; cf. Euripidés, *Hippolytos*, 1423 *et seq.*).

<sup>4</sup> 'Insana Caprae sidera' (Horace, *Carmina*, III. vii. 6). 'Pluvialibus Hoedis Verberat imber humum'



All his huge form towards the left of the *Twins* 160  
 Inclining, you will find : the *Twister's* head  
 Revolves just opposite. On his left shoulder  
 The sacred *Goat*<sup>1</sup> which men say offered Zeus its dug ;  
 Zeus' servants<sup>2</sup> call it the Olenian<sup>3</sup> Goat.  
 She is both large and bright ; but they—the *Kids*— 165  
 Shine somewhat-feeblely on the wrist of the hand.<sup>4</sup>  
 The horned<sup>5</sup> *Bull* fallen near the *Driver's*<sup>6</sup> feet



FIG. XI.—THE CHARIOTEER.

Behold. And very like him lie the stars ;  
 Thus is his head distinguished ; other mark  
 Is needless to discern the head, since stars 170  
 On both sides shape it as they roll along.<sup>7</sup>

(Vergil, *Aeneid*, ix. 668-9). 'Oleniae signum pluviale Capellae' (Ovid, *Fasti*, v. 113). The connexion of the mythological Goat, Aix ('the Springer'), with storm, is, however, much deeper than this (vide *L. K. O.* Sec. xix).

<sup>1</sup> The Goat Amaltheia. Another Kretan legend of the nurturing of Zeus (cf. Vs. 31-5). The LXX amusingly render Keren-happuch ('Horn-of-stibium,' *Job*, xlii. 14) by 'Αμαλθαίας κέρας. None of the usual derivations of the name are satisfactory.

<sup>2</sup> 'Υποφῆται, i.e., the priests as expounders of oracles and revealers of sacred things, such as the Selloi (*Il.* xvi. 234).

<sup>3</sup> The mythic Ólenos, a son of Hêphaistos, had two daughters, Aigê and Helikê, who, having nurtured Zeus, were severally changed into *Capella* and *Ursa*

*Major*. Aigê = Amaltheia. To treat the myth exhaustively would require a short monograph, but I may add with Delambre, 'Olénie, c'est-à-dire portée sur les bras, ὠλένη, ulna.'

<sup>4</sup> Χεῖρ is often used of hand + arm.

<sup>5</sup> Κεραὸν Ταύρον. The original zodiacal Bull was probably represented by the Urus (*Bos primigenius*), the Assyrian *Rîmu*, Heb. *Rém*, and Akkadian *Am-si* ('Horned-bull'), i.e., the Bull with huge horns, which latter name is exactly reproduced by Aratos. The animal appears in the A.V. of the Old Test. as the Unicorn.

<sup>6</sup> I.e., the feet of the *Charioteer*.

<sup>7</sup> An obvious resemblance between the natural position of stars and a constellation-figure is quite exceptional (vide *E.* Introduction, x).

Much mentioned is their name, nor, soothly, are  
 The *Rainy-ones*<sup>1</sup> unheard of. They have place  
 On the whole front of the *Bull* ;<sup>2</sup> his left horn's tip,  
 And the adjoining *Charioteer's* right foot 175  
 One star's possessed of, and they closely glide.  
 The *Bull* doth ever lead the *Charioteer*  
 In setting, yet companions do they rise.  
 Of *Kepheus Iasos*'<sup>3</sup> son the woeful race  
 Shall not recline unsung ; in truth, their names 180



FIG. XII.—THE BULL.

Reached unto heaven, for they were near to Zeus.<sup>4</sup>  
*Kepheus*, behind the *Bear* called *Trail-of-light*,  
 Is like to one who stretches forth both hands :  
 From the tail tip to either foot extends

<sup>1</sup> The 'pluviae Hyades' (Vergil, *Aeneid*, i. 744 ; iii. 516), and 'tristes Hyades' (Horace, *Carmina*, I. iii. 4) ; 'Hyadas Graius ab imbre vocat' (Ovid, *Fasti*, v. 166). Thalés, B.C. 636-546, said they were two in number, a northern and a southern ; Euripidés made them three.

<sup>2</sup> The principal members of the group are  $\alpha$ ,  $\theta$ ,  $\gamma$ ,  $\delta$  and  $\epsilon$  *Tauri*.

<sup>3</sup> There are various obscure mythological personages of this name, one of whom is called a son of Argos Panoptés (the Bright-starry-heaven) and father of Ió (the Horned-moon), from whom the Schol. traces the pedigree :— Epaphos—Libyè—Bélos—Agénór—Képheus. Agénór ('the Mighty-one'), father of Kadmos ('the Easterner'), is generally called the

twin-brother of Bélos (Bel—Baal) ; and his name 'is only a Greek translation of the name of the god Baal, the lord' (Lenormant, *Les Premières Civilisations*, ii. 316 ; Movers, *Phönizier*, ii. 131) ; so that he is really identical with Bélos. In accordance with this, Képheus, the Aithiopian king, husband of Kassiepeia, and father of Andromédé, is generally described as the son of Bélos. The rivalry of this Non-Aryan family with Aryan personages and the consequent punishment of the luckless Aithiopians by the Sea-monster and otherwise, are referred to in the poem ; especially in the amusing passage (Vs. 653-8), which describes the endless degradation of 'sad Kassiepeia' (As to Képheus and family, vide *U.* 55 ; *L. K. O.* 86 ; *E. Sec.* xxx).

<sup>4</sup> In race (Schol.).

An equal line, the like from foot to foot.  
 But from his girdle 'tis not far to look  
 For the first bending of the mighty *Snake*.<sup>1</sup>

185

In front the luckless <sup>2</sup> *Kassiepeia* moves,  
 But faintly shining on a moon-lit night ;  
 Few changing stars of those which, ranged around,  
 Give the whole Sign its name, make her look bright.  
 E'en as a folding door, fitted within

190



FIG. XIII.—KÊPHEUS.

With key, is thrown back when the bolts are drawn,—  
 Such seem the stars beneath her singly placed.<sup>3</sup>  
 And thus from shoulders small she stretches arms ;  
 It might be said she sorrowed for her child.

195

For there, too, moves along a tristful form,  
*Andromedê*, below her mother, fairer,  
 Nor only to be seen on moonless nights ;

<sup>1</sup> *I.e.*, Δράκοντος.<sup>2</sup> Δαιμονίη.<sup>3</sup> Vide V. 171, note.

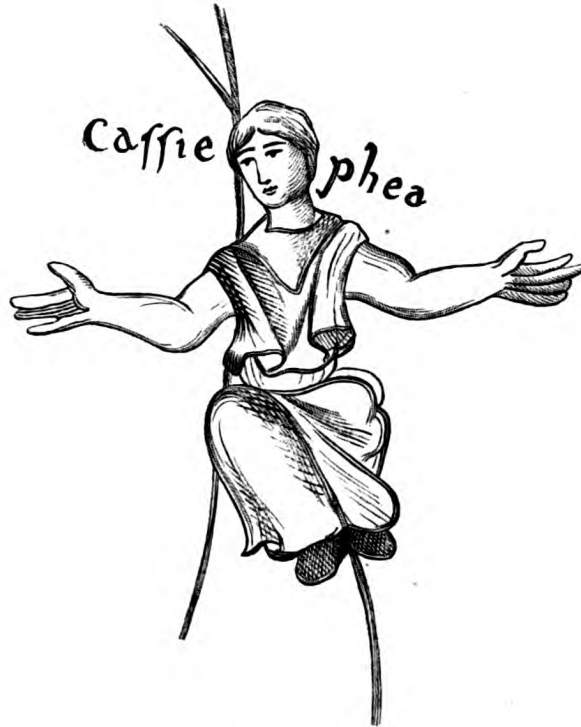


FIG. XIV.—KASSIPEIA.



FIG. XV.—ANDROMEDÈ.

So bright her head, so bright are both her shoulders, 200  
 The outlines of her feet and all her robes.  
 And there, too, hath she both her arms outspread  
 With chains upon them e'en in heaven ; aloft  
 And thus outstretched those hands are ever held.  
 But o'er her head a *Horse* portentous urged, 205  
 Shows half his belly ; and a common star  
 Shines at his navel, and upon her head.  
 Three other stars upon his sides and shoulders  
 Betwixt each other equal distance show,  
 Beauteous and great. His head is nothing like, 210



FIG. XVI.—THE HORSE.

Nor neck, although 'tis lengthy. The last star  
 Of the bright chin can even match the four  
 Forenamed, and these his form conspicuous gird.  
 Four feet he has not ; from his navel's end  
 A demi-form the sacred *Horse* revolves. 215  
 And he, they say, down lofty Helikôn  
 Brought the pure water from the Horse's Fount.<sup>1</sup>  
 For Helikôn poured down no streams as yet ;  
 But the *Horse* smote it ; and the water thence  
 Flowed straightway from the stroke of his forefoot ;<sup>2</sup> 220  
 Shepherds first called this water Horse's Fount.

<sup>1</sup> The famous Hippokrênê, the 'Fons Caballinus' of Perseus.

<sup>2</sup> Vide Pausanias, II. xxxi. 12.

Down from a rock that streamlet flows, and it  
Is seen amongst the Thespians ; but the *Horse*  
Revolves in heaven, and can be seen at will.

The rapid transits of the *Ram*<sup>1</sup> are there,  
Who, truly, though round mighty circles chased;  
Nor feebler runs than doth bear *Trail-of-light* ;  
Himself is faint and starless to behold,

225

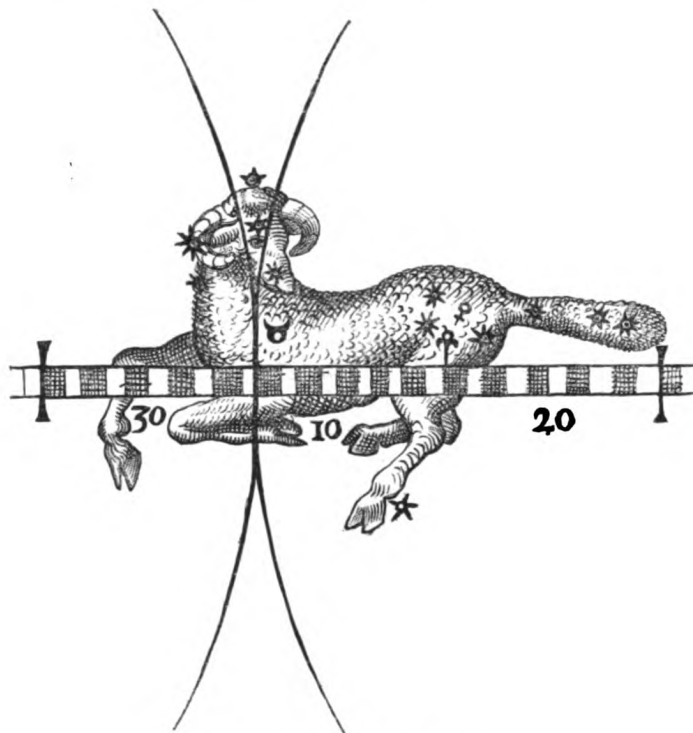


FIG. XVII.—THE RAM.

As stars by moonlight ; yet *Andromedê*  
Reveals him by her belt, for he is near.  
In midst of the vast heavens he moves, just where  
The *Claw-tips* and *Oriôn's belt*<sup>2</sup> revolve.  
Another sign is formed, too, near at hand  
Below *Andromedê*, in three sides measured  
*Like-to-a-Delta* ; equal two of them

230

235

<sup>1</sup> For a full account of the origin of the zodiacal *Ram*, and the reason of his location as the 'dux et princeps Signorum,' vide *L. K. O.* Sec. x.

<sup>2</sup> Head (vide V. 518).

As it has, less the third, yet good to find  
 The sign, than many better stored with stars.  
 The *Ram's* stars lie a little to the south.

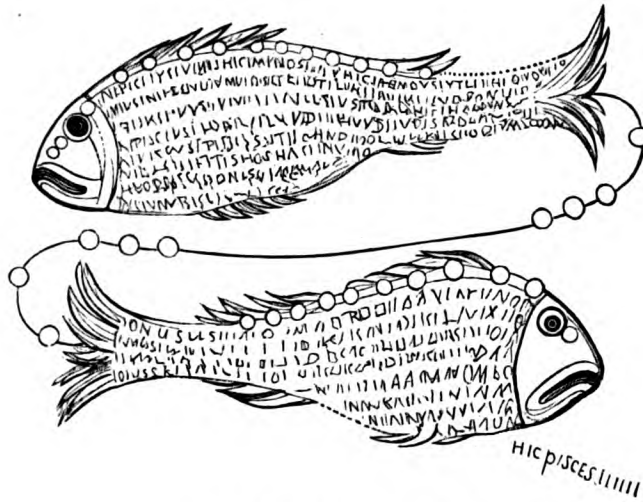


FIG. XVIII.—THE FISHES.

Then, yet beyond, towards the southern bounds  
 The *Fishes* ; one superior<sup>1</sup> to the other,  
 North gales it better hears when first they come.<sup>2</sup>  
 From both their tails extends as 'twere a chain,

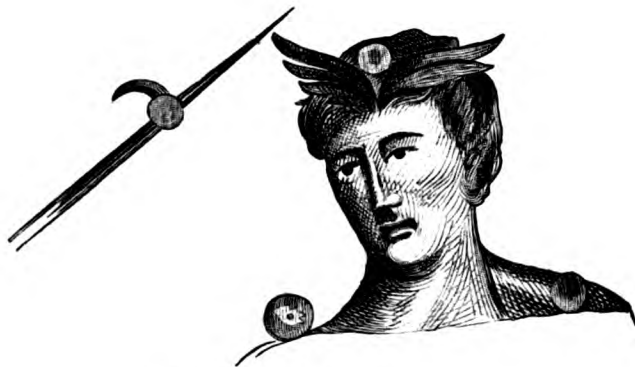


FIG. XIX.—HEAD OF PERSEUS.

<sup>1</sup> In brightness (Schol.).  
<sup>2</sup> 'Magis horrissonis Aquilonis tangitur alis'  
 (Cicero. Cf. Ovid, *Fasti*, iii. 401). This *Northern Fish*

Χαλδαίοι καλοῦσιν ἰχθὺν χελιδονίαν (Schol.) The *chelidonias* was a kind of tunny-fish, but the term has probably a further meaning.

Each joined with each on each side as they go.  
 These have a star both beautiful and large,  
 And this men call the tail-connecting link.  
 Let the left shoulder of *Andromedê*  
 Mark the more northern *Fish*, for it is nigh.

245

And both her feet her husband *Perseus* show,  
 For o'er his shoulders they are ever borne.



FIG. XX.—THE CLUSTERERS.

Taller than others<sup>1</sup> moves he in the north ;  
 Towards the seat of his wife's mother's chair  
 His right hand stretches ; wide his steps, like one  
 Hasting, dust-covered even in realms of Zeus.

250

Near his left thigh together sweep along  
 The flock of *Clusterers*.<sup>2</sup> Not a mighty space  
 Holds all, and they themselves are dim to see.

255

<sup>1</sup> *Kepheus* and *Kassiopeia* (Schol.).

<sup>2</sup> Vide *sup.* p. 9, note 3.



And seven paths aloft men say they take,  
 Yet six alone are viewed by mortal eyes.<sup>1</sup>  
 From Zeus' abode no star unknown is lost  
 Since first from birth we heard,<sup>2</sup> but thus the tale is told : 260  
 These seven are called by name Alkyonê,  
 Kelainô, Meropê, and Steropê,  
 Têÿgetê, Elektrê, Maia queen.  
 They thus together small and faint roll on,  
 Yet notable<sup>3</sup> at morn and eve through Zeus, 265  
 Who bade them show when winter first begins,  
 And summer, and the season of the plough.<sup>4</sup>



FIG. XXI.—ALCYONÊ.

There is the *Shell*, but small. And this, whilst yet  
 Encradled, Hermês pierced and called it *Lyre* ;<sup>5</sup>  
 Fronting the unknown form he set it down 270  
 When brought to heaven. And near the legs<sup>6</sup> the *Shell*  
 Hard by the left knee comes ; the crown of the head  
 Turns opposite the *Bird* ; and it<sup>7</sup> in midst  
 Between the *Bird's* head and the knee is fixed.  
 For, soothly, moves with Zeus the spangled *Bird*. 275  
 But it is dusky, though the wings are decked

<sup>1</sup> 'Quae septem dici, sex tamen esse solent' (Ovid, *Fasti*, iv. 169).

<sup>2</sup> (Of anything.)

<sup>3</sup> Vide *Il.* xviii. 486; *Od.* v. 272.

<sup>4</sup> Vide Hesiod, *Erga*, 596, 607-15. For the con-

nexion of the *Clusterers* with *Orión*, vide *Ibid.* 619; Pindar, *Nemeonikai*, ii. 11.

<sup>5</sup> Vide the Homeric Hymn *Eis Hermên*.

<sup>6</sup> Of the 'unknown' *Kneeler*.

<sup>7</sup> The *Lyre*.

With stars not very large, yet plain to see.  
 Now he, like bird with flight in a clear sky,  
 As breeze-born sinks below, right side the hand  
 Of *Kepheus* stretching his right pinion tips.  
 By the left wing the leaping horse-hoofs lie.

280



FIG. XXII.—HERMES-STILBON-MERCURIUS.

The bounding *Horse* the *Fishes* both attend ;  
 The *Waterpouurer's* right hand near his head  
 Is stretched. Behind the *Horned-goat*<sup>1</sup> doth he rise ;  
 But he—the *Goat*—lies rather lower down  
 In front, where retrogrades the solar might.<sup>2</sup>

285

<sup>1</sup> *Capricorn* thus distinguished from *Capella*.

<sup>2</sup> Vide Vs. 501-2.

In that month, oh ! may not the briny wave  
 Surround thee sailing on the open main.  
 Small way wouldst make by day, since days are swift ;  
 When night alarmed no dawn from nigh at hand  
 Would come, though much invoked. Then grievous blasts  
 Break southward on the sea, when coincide  
 The *Goat* and sun ; and then a heaven-sent cold  
 Is worst for the numbed sailor. Nathless, now

290



FIG. XXIII.—THE WATER-POURER.

Through all the year the sea is churned by keels ;  
 And often, like to diving water-birds,  
 We sit on deck and gaze upon the main,  
 Turned towards the shores ; whilst they, wave-washed, are yet  
 Afar ; and a thin plank alone from death divides.

295

Even in the previous month, much tossed at sea,  
 When the sun burns the *Archer* and his bow,<sup>1</sup>

300

<sup>1</sup> 'Sagittipotens solis cum sustinet orbem' (Cicero).



FIG. XXIV.—THE GOAT.

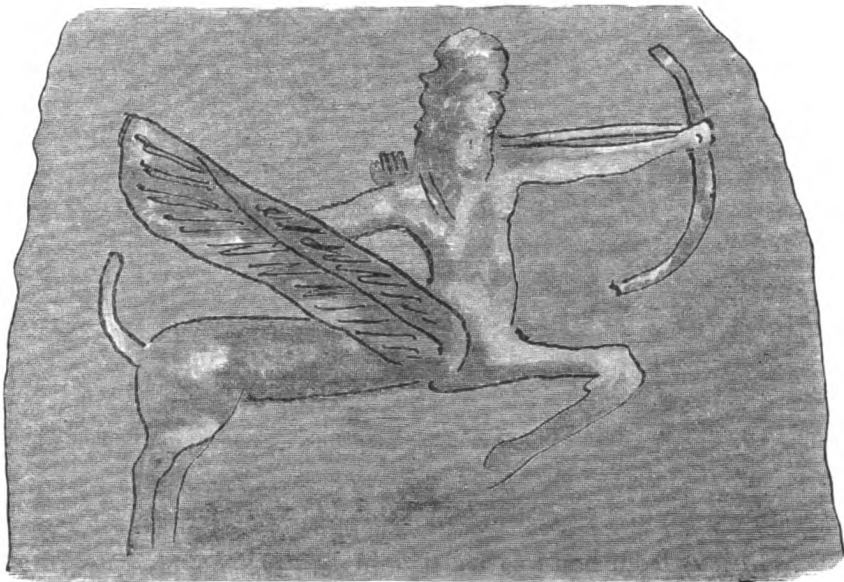


FIG. XXV.—THE ARCHER.

At eve you land, nor longer trust to night.  
 In sooth, that month's and season's Sign would be  
 The *Scorpion* rising at the end of night.  
 For, soothly, near its sting the *Archer* draws

*Sol m Scorpione.*



FIG. XXVI.—THE SCORPION.

His mighty bow ; and, as he rises, nigh  
 In front the *Scorpion* stands, but he comes quicker up.  
 Then, too, the head of *Trail-of-light* runs high



FIG. XXVII.—THE BIRD.

When night begins, and ere the morning sets  
*Kepheus* from hand to waist, and sets *Orión's* host.  
 There is in front another *Arrow* cast  
 Without a bow ; and by it flies the *Bird*

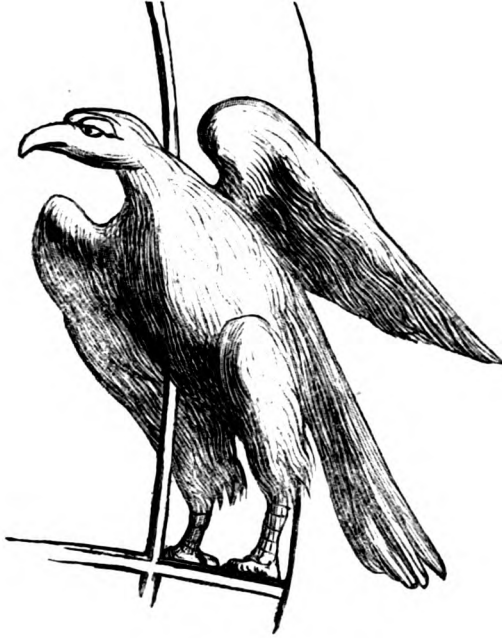


FIG. XXVIII.—THE EAGLE.



FIG. XXIX.—THE DOLPHIN.

Nearer the north. And nigh a second sails<sup>1</sup>  
 Lesser in size, but dangerous to come  
 From ocean when night flies; the *Eagle* named.  
 Now near the *Goat* the *Dolphin* speeds along,  
 Dim in the mist; and round it lie four stars

315



FIG. XXX.—ORION.

Which parallel are fixed by two and two.

Between the wandering sun-path and the north  
 These stars are placed; but many others rise  
 Below, between the south and solar way.

320

In the *Bull's* section-of-the-sphere<sup>2</sup> aslant

<sup>1</sup> A play on words, ἀγραι—'Αγρόν. Cf. Aquila—Aquila.

Τομή. For πᾶς ζωδιακὸς κύκλος δώδεκα τομαῖς διαίρεται (Schol.). But there is a further meaning: Orión ὑπὸ τὸ διχοτόμημα [the divided half part] τοῦ ταύρου ἐστίν (Schol.); therefore on the Sphere of

Aratos a *Demi-bull* was represented, as on the Farnese Globe, in the Planisphere of Geruvigus, in the edition of *Hyginus* by Micellus, and generally at the present time. The *Horse* was similarly portrayed (V. 215; vide p. 28).

*Orión* lies. And who, when night is clear,  
Beholds him stretched aloft, need not expect  
To see his better though he search the sky.

325

Such, too, beneath his rising back appears  
His guard the *Dog*, standing on both hind<sup>1</sup> feet,  
Varied,<sup>2</sup> nor wholly seen ; upon his belly  
Revolves a dim star ; his portentous jaw



FIG. XXXI.—THE DOG-STAR GUIDING THE SOLAR ORION-OPHIUCHOS.

Bears at the end a star which scorches most,  
Resplendent ; so men it the *Scorcher*<sup>3</sup> call.  
When he, growth-checking, rises with the sun,  
No more do vineyards cheat with leaves alone ;<sup>4</sup>  
In his swift course throughout the rows he sifts

330

<sup>1</sup> And so nearly always now represented.

<sup>2</sup> *I.e.*, of different degrees of brightness in different parts. So Micyllus, 'Varius.'

<sup>3</sup> *Seirios*, the Latin *Sirius* and Persian *Tistar* (cf. the Vedic *Surya*, 'the Shining,' *i.e.*, *Hêlios—Sol*), 'the Dog of *Orión*' (*Il.* xxii. 29), *Kuôn Seirios*' (*Aischylos*,

*Agamemnôn*, 967), brightest of stars. So *Plutarch*: 'Ὀρομάζης. . . τὸν οὐρανὸν ἀστροῖς ἐκόσμησεν, ἕνα δ' ἀστέρα πρὸ πάντων οἷον φύλακα καὶ προόπτην ἐγκατέστησε τὸν σείριον (*Peri Isidos*, xlvi.). As to *Seirios*, vide *E. Sec.* iv.

<sup>4</sup> Cf. *Il.* v. 5-6.



With ease ; some strengthens, others quite destroys.<sup>1</sup>  
 And this we see when setting ; but the rest  
 Which form the limbs lie round, too small to be a mark.

335

'And ceaselessly beneath *Oriôn's* feet  
 The *Hare* is ever chased.<sup>2</sup> For, from behind  
 The constant *Scorcher* comes as in pursuit,  
 And rises with it, and its setting spies.

340

Sternforward *Argô* by the *Great Dog's* tail  
 Is drawn ; for hers is not a usual course,  
 But backward turned she comes, as vessels do

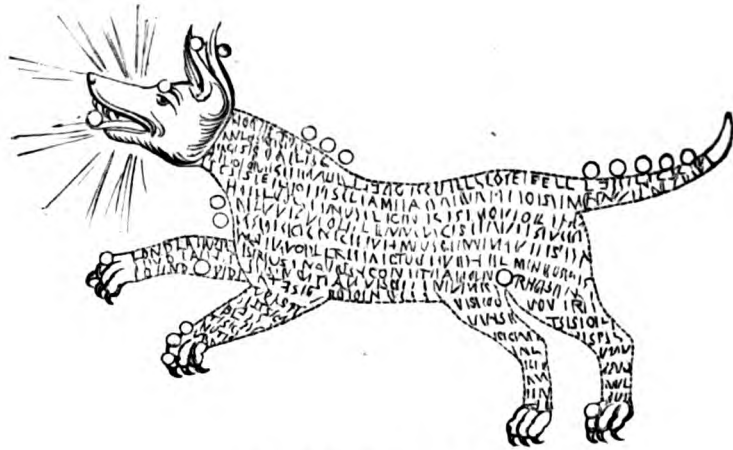


FIG. XXXII.—THE DOG.

When sailors have transposed the crooked stern  
 On entering harbour ; all the ship reverse,  
 And gliding backward on the beach it grounds.  
 Sternforward thus is Jason's *Argô* drawn.  
 And part moves dim and starless from the prow  
 Up to the mast, but all the rest is bright.  
 The slackened rudder has been placed beneath

345

350

<sup>1</sup> Cf. Archilochos:—

πολλούς μὲν αὐτῶν Σεῖριος καταναεῖ  
 ὄξυς ἐλάμπων (*Fragment* lxi. ap. Bergk).

This is imitated by Lykophrôn:—ἀκτίς Σεῖριου καταναεῖ (*Kassandra*, 327). Hesychios defines *Seirios* as ὁ ἥλιος καὶ ὁ τοῦ κυνὸς ἀστήρ.

<sup>2</sup> The problem, which perplexed the ancients, why the Mighty-hunter and his Dog should pursue the most timid of creatures, is solved when we recognize that *Oriôn* was originally a solar type, and that the *Hare* is almost universally a lunar type (vide Hahn, *Tsunigom*, 137 et seq.; R. B. Jr. *E.*, Secs. iv., xxviii).



FIG. XXXIII.—ARGÔ.

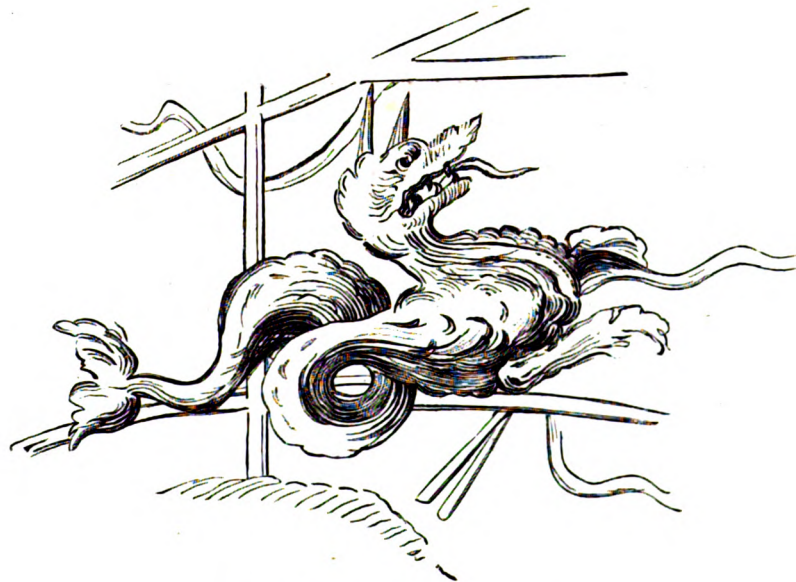


FIG. XXXIV.—THE SEA-MONSTER.

The hind-feet of the *Dog*, who goes in front.

*Andromede*, though lying far away,  
Dreads the *Sea-monster* <sup>1</sup> as he comes along.

For she towards the northern Thracian blast

355

Inclined is borne ; the south wind brings her foe

The *Ocean-beast*, beneath the *Ram* and *Fishes*,

But little placed above the starry *Stream*.<sup>2</sup>

For this a remnant of Eridanos,

That stream of tears, 'neath the gods' feet is borne.

360

And it beneath *Oriôn's* left foot wends ;

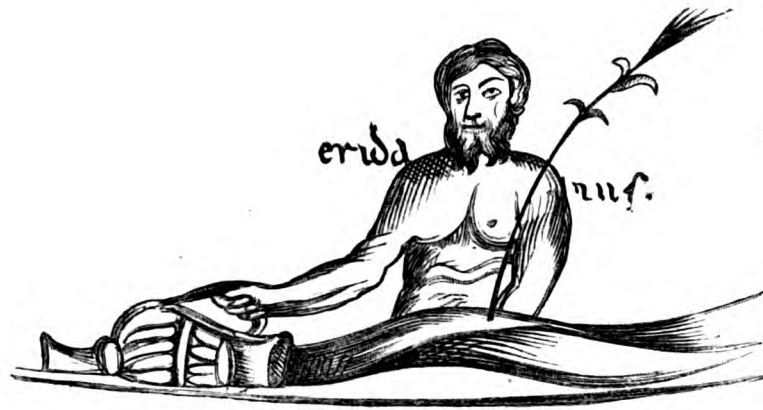


FIG. XXXV.—THE STREAM.

But the tail links which bind the pair of *Fish*

Both join it when descending from their tails ;

Behind the *Monster's* crest they move together

Tending to one : they finish in a star

365

Of the *Sea-beast* which lies at his spine end.

But small in size and with a feeble light,

Between the rudder and the *Monster* move

The nameless stars that lie beneath the flanks

Of the pale *Hare* ;<sup>3</sup> these do not strew heaven's floor

370

<sup>1</sup> From whom in the myth Perseus delivered her.

<sup>2</sup> In *Eridanus, River and Constellation*, I have treated at length of the archaic Southern Signs, and their Euphratean connexion.

<sup>3</sup> The *Hare* is a dark constellation, its brightest member being a single star of the third magnitude. As Sun to Moon, so *Oriôn* to *Lepus*.

With limbs resembling an imagined form,  
 As many, ranged in order, pass on paths  
 The same each year, for which some man of yore  
 A nomenclature thought of and devised,  
 And forms sufficient found.<sup>1</sup> For men could not  
 Or tell or learn the separate names of all :  
 Since everywhere are many, size and tint  
 Of multitudes the same, but all are drawn around.  
 So thought he good to make the stellar groups,  
 That each by other lying orderly,

375

380



FIG. XXXVI.—THE FISH.

They might display their forms. And thus the stars  
 At once took names and rise familiar now.  
 And some supplied with obvious forms appear,  
 Whilst others, underneath the hunted *Hare*,  
 All very dim and nameless glide along.<sup>2</sup>

385

Beneath the *Goat*, below the southern blasts,  
 Turned towards the *Monster* hangs on high a *Fish*  
 The *Southern* called, distinct from those forenamed.  
 And others scattered 'neath the *Waterpouer*,

<sup>1</sup> Vide *sup.* p. 4.

<sup>2</sup> 'As Aratos remarks, there are numbers which have not received any designation' (Strabo, I. i. 6). It was highly unnecessary to fill up spaces or supposed spaces with the *Giraffe*, *Lizard*, *Lynx*, etc.; or, still worse, with utterly tasteless forms, all these being the product of a merely arbitrary arrangement and absolutely devoid of any archaic, or, indeed, other, meaning in a stellar connexion. But here, just as generally in the case of the archaic Signs, the actual appearance of the stars had little or nothing to do with

the constellation-figures. Thus, *e.g.*, to pretend that the stars of *Cancer* struck any ancient observer as resembling a *Crab*, is ridiculous; and, moreover, merely begs the question. Yet there was a line of thought (the key to the position) which induced early man to make a Sign of a monstrous-seizing-creature, now familiar to us as the *Crab* (vide V. 89, note); and this creature being an archaic type of darkness we find that accordingly, 'Cancer was called "the dark sign," because it shows so few stars' (Proctor, *Easy Star Lessons*, 29).

In midst between the *Monster* and the *Fish*,  
 Are seen in ether, dim and nameless ; near  
 The right hand of the famous *Waterpouurer*,  
 Like a slight flow of water here and there  
 Scattered around, bright stars revolve but small.  
 More clearly 'mid them move a pair of orbs,  
 Nor very far away nor very near,  
 One large and bright by both the *Pouurer's* feet,<sup>1</sup>  
 The other<sup>2</sup> 'neath the dusky<sup>3</sup> *Monster's* tail,  
 And all are called the *Water*.<sup>4</sup> Other few  
 Below the *Archer*, under his *forefeet*,

390

395

400



FIG. XXXVII.—THE SEA-MONSTER.

Led round in circle roll without a name.<sup>5</sup>

Now 'neath the glowing sting of that huge Sign  
 The *Scorpion*, near the south, the *Altar*<sup>6</sup> hangs.

<sup>1</sup> *Fomalhaut* (= *Fom al hut*, 'the Mouth-of-the-Fish'), 17th of the stars of the first magnitude.

<sup>2</sup> *Diphda* ('the Frog'),  $\beta$  *Ceti*.

<sup>3</sup> *Kváneos*. 'Obscure' (*Micyllus*). So *κτανέη κάπερος* (*Il. xviii. 564*), 'a deep, dark trench.' A most suitable epithet to apply to the *Monster*, an archaic type of Darkness and thus slain by the solar *Perseus*. It expresses the 'blue-black' of the nocturnal sky. So Mr. Gladstone observes of Homer, 'His word *kuaneos*, which is more like indigo, does not seem to have been clearly separated in his mind from black' (*Juventus Mundi*, 541). In V. 702 the epithet is applied to the *Goat*, a comparatively dark constellation.

<sup>4</sup> The three *Fish* and the *Monster* all swam in water and streams which were united, the constellations *Eridanus*, *Cetus*, *Pisces*, *Aquarius*, and *Piscis Australis* lying together.

<sup>5</sup> The *Stephanos Notios*.

<sup>6</sup> For an account of the remarkable myth connected with this Sign, vide *L. K. O. Secs. x, xvi; E. Sec. viii*. The *Altar* was probably the lost zodiacal Sign subsequently represented by the *Claws*, and afterwards by the *Balance*. This latter Sign is Egyptian in origin; *τὰς χηλὰς, τὰς καλουμένας ἐπ' Αἰγυπτίων Ζυγόν* (*Achilleus Tatios*), *Jugum*, the *Balance* being considered as a yoke placed upon something. The Sign reappears in the borrowed astronomy of India as *Juka*. Hyginus observes, when speaking of the *Scorpion*, 'Hic propter magnitudinem membrorum in duo signa dividitur, quorum unius effigiem nostri *Libram* dixerunt' (*Poeticon Astronomicum*, ii. 9). *Orion* being a giant, the avenging *Scorpion* had to be 'huger still' (V. 643).

And this you note but little time aloft ;  
 For opposite *Bear-watcher* doth it rise. 405  
 And whilst his course is wholly high in air,  
 It quickly speeds beneath the western sea.  
 Yet as regards that *Altar* ancient Night,  
 In pity for man's woes, placed it a mighty Sign  
 Of storm at sea. For breaking ships she hates ; 410  
 And other Signs elsewhere she lets be seen,  
 Grieving for mortals tossed upon the main.  
 When on the deep wish not to view in heaven

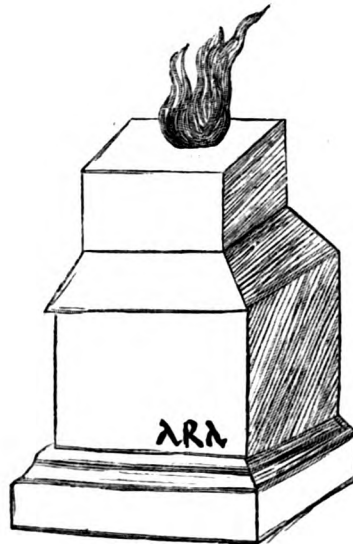


FIG. XXXVIII.—THE ALTAR.

That Sign 'mid others mantled by the mists,<sup>1</sup>  
 Cloudless and bright itself, but higher up 415  
 Beset with surging spume, as clouds are oft  
 Rolled up back-driven by an autumn wind.  
 For often in the south this Sign doth Night  
 Herself provide, respecting sailors' woes.  
 And if the portents shown by her they mark, 420  
 And quickly make all gearing trim and taut,

<sup>1</sup> Reading *ειλυμένων*. 'Nubibus obductis aliis' (Micyllus).

Forthwith their toil is less ; but if from high  
 Upon the ship a grievous whirlwind fall  
 Quite unexpected, and derange the sails,—



FIG. XXXIX.—THE ALTAR.



FIG. XL.—THE CENTAUR AND THE ALTAR.

Now shipping seas from stem to stern they voyage,  
 And now, if Zeus through prayers comes forth to save,

And if the north wind peril should avert,  
 Then, much enduring, once again they see  
 Each other on the ship. In the Sign fear  
 The south wind, till you note light flashing from the north. 430  
 But if the *Centaur's* shoulder stands as far  
 From western as from eastern sea, and mist

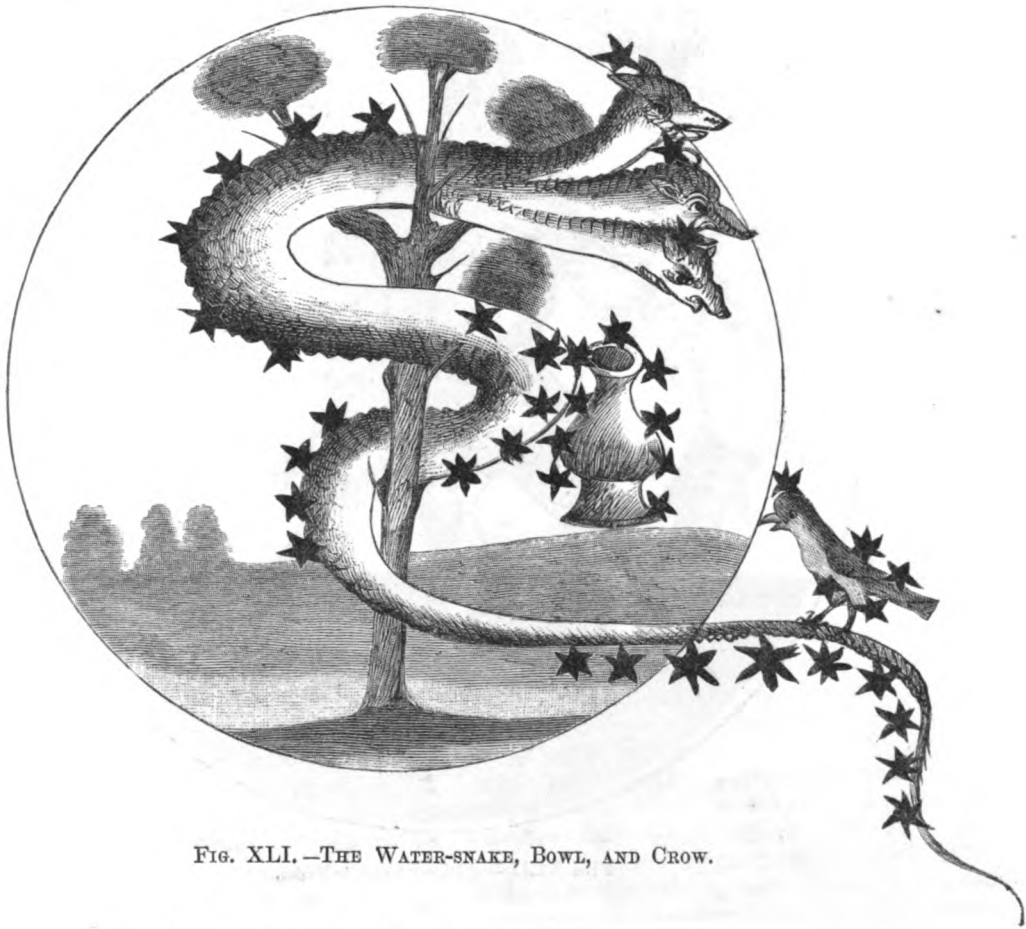


FIG. XLI.—THE WATER-SNAKE, BOWL, AND CROW.

But slight enwraps him, and if night should set  
 The Signs we view when shines the *Altar* full,  
 Regard not much the south, but watch the eastern blast. 435  
 That constellation <sup>1</sup> underlies two Signs ;  
 Its human part beneath the *Scorpion* rests,

<sup>1</sup> The *Centaur*.



The hinder-horse-part is below the *Claws*.  
 But his right hand he ever seems to stretch  
 Before the *Altar's* circle. The hand grasps  
 Another creature very firmly clutched,  
 The *Wild-beast*; <sup>1</sup> so the men of old it named.  
 And opposite another Sign is drawn ;

440



FIG. XLII.—ARÈS-PYROEIS-MARS.

The *Water-snake* they call it. As alive  
 It crawls far-stretching, for the head extends  
 'Neath the *Crab's* midst, the main coil 'neath the *Lion* ;  
 Whilst even o'er the *Centaur* hangs its tail.  
 On the mid coil is placed the *Bowl* ; the end

445

<sup>1</sup> Afterwards known as *Lupus*. The Wolf is a constant mythological symbol of Darkness, and as such, is slain by the solar *Centaur*, a reduplication of *Sagittarius* (vide *E. Sec. ix*).

Bears a *Crow's* form which seems to peck the fold.

The *Dog's-precursor*, too, shines bright beneath the *Twins*. 450

These may you see as roll the fleeting years,

Each at its season regular ; for all

Are thus arranged in heaven, the moving gems of night.

Five differing stars<sup>1</sup> are intermixed with these ;

Through the Twelve Forms<sup>2</sup> on every side they roll. 455

The sight of others is no guide for them,

Where they may lie, since each can change its place.<sup>3</sup>



FIG. XLIII.—HEAD OF APHRODITË-PAPHIË-VENUS.

The years their revolutions make are long,

And omens lie remote from when they shall unite.<sup>4</sup>

<sup>1</sup> The Planets, Kronos-Phainôn (*Saturn*), Zeus-Phaëthôn (*Jupiter*), Arês-Pyroëis (*Mars*), Aphroditê-Paphië (*Venus*), and Hermês-Stilbôn (*Mercury*).

<sup>2</sup> The Signs of the Zodiac.

<sup>3</sup> By some the Planets were thought to 'walk disorderly.' Thus in the Baktrio-Iranian scheme of nature the fixed stars, being regular in their movements, are part of the good creation ; but the planets, being wanderers, are evil. So we read :—

'The Planets with many demons, dashed against the sphere' (*Bundahis*, iii. 27, ap. West).

'Their ringleaders are those Planets' (*Ibid.* xxviii. 44).

So Angrômainyush (Ahriman, 'the Dark' Spirit) exclaims :—

'Opposed to those revolving [Probably the zodiacal Constellations] are the Glooms and Planets arranged by me' (*Zad-sparam*, iv. 3).

But as Platôn says : 'That doctrine about the wandering of the sun and the moon and the other stars [*i.e.*, the planets] is not the truth, but the very reverse of the truth' (*Laws*, vii, ap. Jowett).

<sup>4</sup> The Schol. quotes a dictum ascribed to Platôn, that when 'the Seven Stars' came together ἐν ἐνὶ ζῳδίῳ. . . τότε συμπέρασμα τῆς οἰκουμένης γίνεται καὶ ἀπόλλυται ὁ κόσμος. The idea was Euphratean, for Seneca states that Bêrosos, the great Chaldaean historian and philosopher, asserted that when all the Planets met in *Cancer* there would be a general conflagration ; and a deluge when they all met in *Capricorn*. 'Arsura enim terrena contendit, quando omnia sidera, quae nunc diversos agunt cursus, in cancrum convenerint. . . inundationem futuram, quum eadem siderum turba in capricornum convenerit' (*Quaest. Nat.* iii. 29). Mr. Proctor well remarks, 'I suppose the origin of the superstition was somewhat on this wise : They saw that when the sun was in *Cancer* his rays were warmest ; when he was in *Capricorn*, his rays were feeblest, and the air usually damp and cold. If such effects followed when one planet was in these constellations, much more might be expected when several of the planets were together in *Cancer*, and floods of rain when several were together in *Capricorn*. But when all were together in either constellation, then

Of these I dare not speak with certainty,  
 As of the fixed stars' orbits and their Signs.<sup>1</sup>  
 And, soothly, these<sup>2</sup> like circles lie around.  
 In number four, of those most sought by one  
 Who watches seasons as the years roll on.

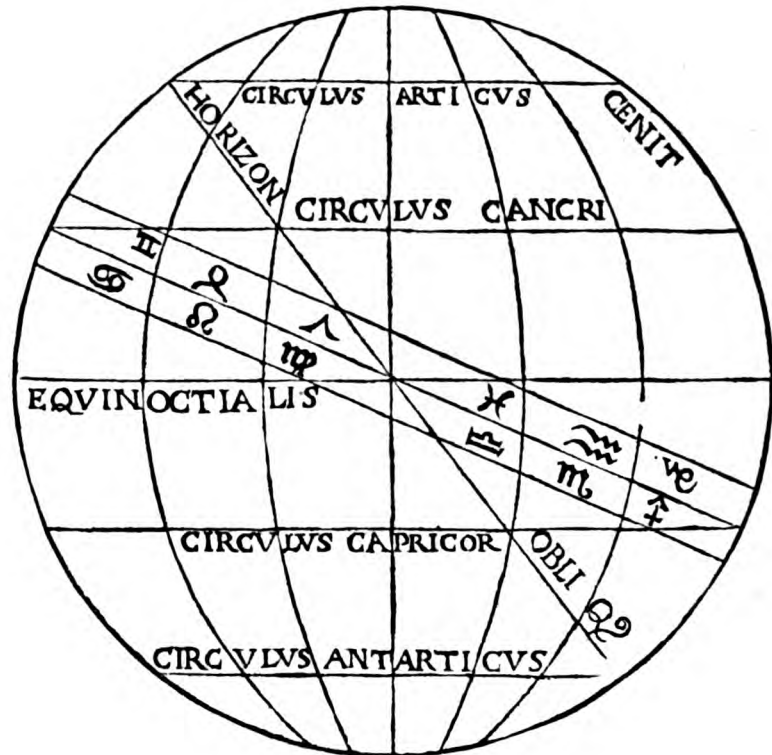


FIG. XLIV.—SPHAERA MUNDI.

the greatest heat or the worst floods possible might be expected' (*Easy Star Lessons*, 1882, p. 172). The Pythagoreans called the Planets 'the Dogs of Persephoné' (Clemens Alex. *Stromata*, v. 8).

<sup>1</sup> Sir G. C. Lewis (*Astronomy of the Ancients*, 151) quotes this passage about the planets from a 'translation (?) of the poem of Aratus by Dr. Lamb.' The so-called 'translation' is as follows:—

*'Five other stars remain of various size,  
 That lawless seem to wander through the skies:  
 Hence planets called; yet still they ever run  
 Through the twelve Signs, the circuit of the sun.  
 Thousands of ages come, thousands depart,  
 Ere all return and meet where once they start.  
 Rash the attempt for artless hand like mine  
 To trace their orbits and their bounds define:  
 My easier task the circles to rehearse  
 Of the fixed stars, and trace Sol's annual course.'*

In this passage the words in italics represent renderings of the original; all the rest is padding from the 'artless hand' of Dr. Lamb. Of his omissions and mistranslations I will not speak.

<sup>2</sup> The Poet, continuing the description of the heavens from his star-map or globe, now proceeds to speak of the Zone-circles. So Vergil:—

*'Certis dimensum partibus orbem  
 Per duodena regit mundi Sol aureus astra.  
 Quinque tenent coelum zonae: quarum una corusco  
 Semper Sole rubens, et torrida semper ab igni:  
 Quam circum extremae dextrâ laevâque trahuntur,  
 Caeruleâ glacie concretæ atque imbribus atris.  
 Has inter mediamque duae mortalibus aegris  
 Munere concessae Divum, et via secta per ambas,  
 Obliquus quâ se signorum verteret ordo.'*

(*Georgicon*, i. 231-9).

Round all the Signs which show them clearly lie  
 In numbers nigh at hand, compact in every part.  
 And fixed they<sup>1</sup> are, and fitted each to each ;  
 But two are larger than the other two.<sup>2</sup>

465

If, in nocturnal splendour, when to men  
 Each brilliant star in heaven night displays,

470



FIG. XLV.—THE MOON AMID THE STARS.

Not one enfeebled by the moon at full,  
 But all from out the darkness keenly gleam,—  
 At such a time if wonder sways the mind  
 To see the whole by one broad circle cleft,  
 Or, if another, standing at your side,

475

<sup>1</sup> The Circles.

<sup>2</sup> ' L'équateur et le zodiaque ; les deux petits cercles

sont les tropiques' (Delambre, *Histoire de l'Astronomie Ancienne*, i. 67).

Points out that shining wheel,<sup>1</sup> men call it *Milk*.<sup>2</sup>  
 No circle like to this in hue revolves,  
 But of the four a couple are as large,  
 Whilst less in size the others gird the sky.

The northern blast down-sweeping one<sup>3</sup> is near,  
 And on it move the heads of either *Twin*;<sup>4</sup>  
 The knees, too, of the neighbouring *Charioteer*,  
*Perseus*' left shin and shoulder lie on it,<sup>5</sup>  
 The right arm of *Andromede* it holds  
 Above the elbow; but the hand itself

480

485



FIG. XLVI.—THE MILKY WAY.

Lies higher, nearer north, whilst south the elbow turns.  
 The *Horse*'s hoofs, the *Bird*'s neck, and its head,  
 And the bright shoulders of the *Serpent-holder*  
 Around this zone, as driven on, revolve.  
 A little to the south is borne the *Maid*,  
 Nor touches it, as do the *Crab* and *Lion*.  
 These two lie placed together. But the zone  
 The one beneath the breast and belly cuts

490

<sup>1</sup> We are reminded of the 'wheel in the middle of a wheel,' and the rings 'so high that they were dreadful, and full of eyes,' in the Chaldaean vision of the Hebrew prophet (Ezekiel, i. 16, 18).

<sup>2</sup> Personified as the nymph Galaxaurê, 'the Famous' (*Il.* xviii. 45), and 'the Lovely' (Homeric Hymn *Eis Démétran*, 423).

<sup>3</sup> The Tropic of *Cancer*.

<sup>4</sup> The reader should compare the statements of Aratos with the present position of the constellations as shown on a modern globe.

<sup>5</sup> 'This was the case rather more than 4,000 years ago' (Proctor).

Unto the loins ; the *Crab* beneath the shell  
 From end to end, where a straight line would best  
 Divide it with an eye on each side of the zone.

495



FIG. XLVII.—THE CHARIOTEER.

Signs eight in number measure out the band,  
 Five roll above the earth in upper realms,

*Sol in cancro.*



FIG. XLVIII.—THE CRAB.

And three below ; in it the summer turnings are.  
 And in the north 'tis fixed about the *Crab*.  
 Another <sup>1</sup> in the fronting south divides

500

<sup>1</sup> The Tropic of *Capricorn*.

The *Goat*, the *Pourer's* feet, the *Monster's* tail ;  
 The *Hare* is on it ; of the *Dog* not much  
 It takes, except his feet ; *Argô* is on it,  
 The *Centaur's* mighty back, the *Scorpion's* sting, 505  
 And on it is the glittering *Archer's* bow.  
 From the clear north when passing to the south  
 This last the sun arrives at, here he turns  
 In winter. Of the eight three roll on high,  
 The other five revolve below the earth. 510

In midst of both, vast as the *Milky Way*,  
 A circle <sup>1</sup> trends 'neath earth like one in twain ;  
 And on it twice are equal days and nights,  
 At summer's close and when the spring begins.



FIG. XLIX.—THE GOAT.

As mark there lies the *Ram*, and the *Bull's* knees ; 515  
 The *Ram* along the circle stretched at length,  
 But the *Bull's* crouching legs <sup>2</sup> alone appear.  
 And on it is the bright *Oriôn's* belt,<sup>3</sup>  
 The *Water-serpent's* gleaming bend ; the *Bowl*  
 But small, the *Crow*, some few stars of the *Claws* ; 520  
 The *Serpent-holder's* knees are in it borne.  
 It does not share the *Eagle*, messenger  
 Of might who flies nigh to the throne of Zeus.  
 On it the *Horse's* head and neck revolve.

And these <sup>4</sup> the axis casts in parallels,<sup>5</sup> 525

<sup>1</sup> The Equinoctial.

<sup>2</sup> Cf. V. 167.

<sup>3</sup> Head (vide Appendix III.).

<sup>4</sup> (three circles).

<sup>5</sup> 'Ces trois cercles sont coupés perpendiculairement par l'axe du monde' (Delambre).

Having them all in midst ; the fourth <sup>1</sup> is fixed  
 Aslant in both ; in front on either side  
 The turnings <sup>2</sup> gird it, and their midst it cleaves.  
 Not otherwise would one whose hands were skilled  
 By Athênaiê <sup>3</sup> knit the rolling wheels,  
 So as to cycle round as do all these,  
 Which thus aslant the heavenly circle fit,  
 And ever speed along from dawn to night,  
 Some rise and quickly set below, but all

530



FIG. L.—ATHÊNÊ, THE DAWN QUEEN.

In parallels ; on each side orderly  
 One of them rises and another sets.  
 But this so much of Ocean occupies  
 As that in which it rolls from when the *Goat*  
 Rises until the rising of the *Crab*.  
 As much its rising as its setting holds.  
 And far as human eye can stretch its sight,

535

540

<sup>1</sup> The Ecliptic.<sup>2</sup> Τροπικοί.<sup>3</sup> Cf. *Od.* xxiii. 160-1 ; vide Ruskin, *Queen of the Air*, 67 *et seq.* Athena in the Earth ; Appendix V.



Six times as much the circle spans.<sup>1</sup> But each  
Equally measured cuts away two Signs.  
By name the *Zodiac*<sup>2</sup> men this circle call.  
And in it is the *Crab*, the *Lion*, then  
The *Virgin* and the *Claws*, the *Scorpion*,



FIG. LI.—THE MOON.

The *Archer* and the *Goat*, and next the *Goat*  
The *Pourer*, and by him the *Fishes* shine,

<sup>1</sup> *I.e.*, six times as far as the distance from earth to the zenith, that being equal to one half of the diameter of the circle.

<sup>2</sup> The  $\delta$  κύκλος τῶν ζῳδίων of Aristotle. 'Zodiacum hunc Graeci vocitant, nostrique Latini Orbem signiferum' (Cicero).

And after them the *Ram*, the *Bull*, the *Twins*.<sup>1</sup>  
 In these Twelve Signs the Sun is borne along 550  
 The whole year leading ; by him as he goes  
 This circle all the seasons are matured.  
 As much as sets beneath the hollow deep,  
 So much is borne o'er earth ; and every night  
 Six of the twelve parts of the circle set,<sup>2</sup> 555  
 And ever rise as many. And each night  
 Stretches so far as o'er the earth is raised  
 The semicircle when the night begins.  
 Who notes the seasons may with profit scan  
 When each of these divisions doth arise ; 560  
 For aye with one of them arrives the sun.  
 You best observe them when you can descry  
 The Signs themselves ; but if obscured by clouds  
 They chance to be, or rise by hills concealed,  
 Note their positions by the neighbouring stars. 565  
 And Ocean from its horns<sup>3</sup> will furnish you  
 As marks the many stars with which 'tis crowned,  
 When from below it brings each one of these.  
 When the *Crab* rises brilliant are the stars  
 Which lying round on either side revolve, 570  
 Some setting and some rising opposite.  
 Then sets the *Crown*, and on his back the *Fish*.  
 Half of the *Crown* you see aloft, but half  
 The farthest edges of the vista catch.  
 The *Fish* reversed still shows his belly's stars, 575  
 But those above<sup>4</sup> are carried out of sight.  
 The toiling *Serpent-bearer*, too, the *Crab*  
 Brings down from knees to shoulders, and the *Snake*

<sup>1</sup> Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libraque, Scorpius, Arcitenens, Caper, Amphora, Pisces.'

For their original (pre-constellational) character, vide *L. K. O. Secs. vii-xxii*.

<sup>2</sup> 'In which number he seems to include the sign

occupied by the sun' (Sir G. C. Lewis, *Astronomy of the Ancients*, 186).

<sup>3</sup> Vide V. 589, note.

<sup>4</sup> *I.e.*, those uppermost in the natural position of the Figure.

To nigh the neck. The *Bearward* now, part seen  
 But more obscured, near the horizon lies. 580  
 For with four Signs<sup>1</sup> the *Ploughman* as he sinks  
 The deep receives ; and he, when tired of day,  
 At even lingers more than half the night,<sup>2</sup>  
 When with the sinking sun he likewise sets.  
 These nights from his late setting bear their name.<sup>3</sup> 585  
 Thus set they, whilst *Oriôn* opposite,  
 In nothing mean, but gleaming well in belt  
 And both his shoulders,<sup>4</sup> trusting to his blade,<sup>5</sup>  
 Brings the whole *Stream*,<sup>6</sup> and from one branch<sup>7</sup> extends.  
 The *Lion* comes ; those setting with the *Crab* 590  
 Pass wholly, and the *Eagle*. But the *Kneeler*  
 Not yet beneath the surging ocean turns  
 His knee and left foot, though the rest is gone.  
 The dusky<sup>8</sup> *Hare*, the *Water-serpent's* head  
 Rise, and the *Dog's-precursor*, and the feet 595  
 Of the bright *Dog*.

The *Maid* when rising casts  
 Beneath the earth not few. The well-shaped *Dart*,  
 The *Lyre* Kyllênian,<sup>9</sup> and the *Dolphin* set.

<sup>1</sup> 'Chelis, Scorpio, Sagittario et Capricorno coëcidit' (Micyllus).

<sup>2</sup> Cf. Ovid, 'Piger Bootes' (*Fasti*, iii. 405).

<sup>3</sup> The Schol. quotes in illustration *Od.* v. 272 :  
 ὄψε δύοντα Βοώτην.

<sup>4</sup> So Ovid speaks of the 'validos lacertos' of  
*Oriôn* (*Fasti*, vi. 719).

<sup>5</sup> 'Ensifer Orion' (Ovid, *Fasti*, iv. 388).

<sup>6</sup> Ποταμόν. 'The River' (Eridanus. Vide Appendix IV.).

<sup>7</sup> Κέρασ. Primarily 'horn.' So Hesiod, 'Ὠκεανοῖο  
 κέρασ (*Theogonia*, 789; cf. *sup.* V. 566; Pindar,  
 Νείλου κέρασ, *Fragment* clxxxiv). I do not think  
 the poet intends to refer to the bovine horns with  
 which personified rivers are often furnished in art and  
 poetry, but uses the word in the simpler sense as in  
 the passages cited. Ἡπί, the personified Nile, was  
 represented in human form. It is, therefore, unne-  
 cessary to consider here the instance of Acheloüs,  
 'anthropomorphic, with a bovine head' (Sophoklés,  
*Trachiniai*, 13), to match whom Vergil speaks of the

Eridanus-Padus, largest river in Italy, as 'gemina  
 auratus taurino cornua vultu' (*Georgicon*, iv. 371),  
 whilst Horace styles the Aufidus 'tauriformis' (*Car-  
 mina*, IV. xiv. 25; vide *G. D. M.* i. 388). As to the  
 branches of the heavenly river, vide V. 399, note.

<sup>8</sup> Χαροπός. 'Grayish,' and as applied to a dim  
 constellation 'dusky.' 'Glaucus' (Micyllus). As to  
 the *Hare*, vide V. 370, note, and R. B. Jr. *Letters in  
 Academy*, dated January 26 and February 25, 1884.

<sup>9</sup> So called from the Arkadian Kyllêné, highest  
 mountain of the Peloponnésos, and sacred to Hermés  
 the inventor of the Shell (vide V. 269); the god is  
 hence called 'Ἐρμῆς Κυλλήνιος (*Od.* xxiv. 1). As to  
 Hermés, the Wind-power and Cloud-lord, son of Maia  
 ('Mother,' V. 263) and Zeus, vide Ruskin, *Queen of  
 the Air*, 31 *et seq.*; Sir G. W. Cox, *Mythology of the  
 Aryan Nations*, 446 *et seq.*; *U.* 76-7. Maia is a  
 daughter of Atlas, the 'Enduring' power, which  
 supports the Kosmos (vide K. 6. As to the woes of  
 Atlas, vide Aischylos, *Prométheus Desmôtés*, 435  
*et seq.*).

With these are hid the edges of the *Stream*,  
 And the *Bird's* plumage even to the tail. 600  
 Then sets the *Horse's* head, and sets his neck.  
 The *Water-serpent* rises to the *Bowl*.  
 The *Dog*, part risen, lifts his hinder legs,  
 And draws behind him *Argô's* starry<sup>1</sup> stern.  
 She runs from earth divided by her mast, 605  
 With all the *Maid* just risen from below.

Nor will the *Claws* on coming, though but faint,<sup>2</sup>  
 Pass by unnoticed, since, a mighty Sign,  
 At once the *Ploughman* rises by *Bear-watcher* marked.  
 And now all *Argô* stands aloft in sky ; 610



FIG. LII.—THE ARCHER.

The *Water serpent*—for 'tis stretched afar  
 In heaven—still wants its tail. The *Claws* bring on  
 [The mighty *Snake-holder* above them. Then]<sup>3</sup>  
 The *Kneeler's* right leg even to the thigh,  
 He who is ne'er far distant from the *Lyre* ; 615  
 Whoe'er this stranger of the heavenly forms  
 May be,<sup>4</sup> we oft behold him on one night  
 Set and then rise upon the other side.  
 With both the *Claws* his leg alone appears ;  
 And he himself with head still turned away, 620

<sup>1</sup> Lit. 'very-starry.'<sup>2</sup> Cf. V. 90.<sup>3</sup> A doubtful line.<sup>4</sup> Vide V. 66, note.

The *Scorpion's* rising and the *Archer* waits :  
 These bring him on, the first his middle part,  
 The *Bow* at once his head and left hand leads ;  
 Thus limb by limb he tripartite<sup>1</sup> is borne.  
 The *Centaur's* hind parts, and one half the *Crown*  
 The *Claws* still rising bear with them along.  
 Then sets the *Horse*, whose head has gone from sight ;

625



FIG. LIII.—ARTEMIS-SELÊNÊ.

The tailtip of the *Bird* in front<sup>2</sup> is drawn.  
*Andromedê* bows down her head ; towards her  
 The misty south wind brings her fishy fear ;<sup>3</sup>  
 Whilst northern *Kêpheus* with his mighty hand  
 Enjoins from opposite. Then to the crest

630

<sup>1</sup> *I.e.*, rising with three zodiacal Signs.

<sup>2</sup> *I.e.*, placed in heaven in front of the *Horse*, 'prioris avis' (Micyllus).

<sup>3</sup> Cf. V. 354.

It sets, and *Kêpheus*—shoulder, head, and hand.

The *River's* windings, when the *Scorpion* comes,  
 In the full-flowing deep will straightway fall ;  
 And great *Oriôn*, too, his advent fears.  
 Content thee, Artemis! A tale of old  
 Tells how the strong *Oriôn* seized thy robe,

635

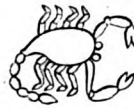


FIG. LIV.—THE SCORPION.

When he in Chios with his sturdy mace  
 A hunter, smote the beasts to gain *Oinopiôn's* thanks.  
 But she, forthwith, another monster bade—  
 The *Scorpion*, having cleft the island's hills  
 In midst on either side : this, huger still,  
 His greatness smote and slew, since Artemis he chafed.

640

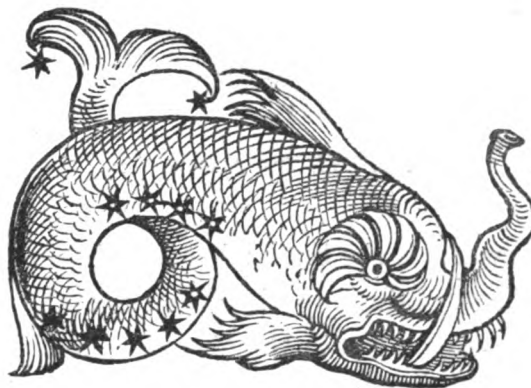


FIG. LV.—THE SEA-MONSTER.

And so 'tis said that, when the *Scorpion* comes,  
*Oriôn*<sup>1</sup> flies to utmost end of earth.<sup>1</sup>  
 Part of the *Monster* and *Andromedê*,  
 When he arises are no more unmoved,

645

<sup>1</sup> As to the very remarkable myth of *Oriôn* and the *Scorpion*-darkness, vide *G. D. M.* ii. 270 *et seq.* ; *L. K. O.* Sec. xviii.

But quickly fly ; and *Kêpheus* with his belt  
 Earth touches, all his upper parts to the head 650  
 In ocean dipping ; not the rest, for these  
 The *Bears* prevent,<sup>1</sup> the feet, and knees, and waist.  
 And now she, too, her daughter's form pursues,  
 Sad *Kassiepeia* ; nor seemly still  
 Show from her seat her feet and knees above ; 655  
 But she head foremost like a tumbler sits :  
 With knees divided ; since a doom must fall  
 On boasts to equal Panopê and Doris.<sup>2</sup>



FIG. LVI. THE ARCHER.

Thus elsewhere is she borne ; but from below  
 Others the sky brings up, the *Crown* again,<sup>3</sup> 660  
 The *Water-serpent's* tail ; the *Centaur's* head  
 And body brings it ; and the *Wild-beast*, which  
 The *Centaur's* right hand holds.<sup>4</sup> But there await  
 The coming *Bow*, the fierce *Steed's* foremost feet.  
 And with the *Bow* the *Serpent-holder's* form, 665  
 And the *Snake's* coil arise ; the *Scorpion* brings

<sup>1</sup> Cf. V. 48.<sup>2</sup> Nêreids. Δωρίς και Πανόπη (II. xviii. 48). The fortunes of the family of *Kêpheus* afford an instance of that rivalry between personages Aryan and Non-Aryan of which I have given numerous examples (vide *G. D. M.* ii. 251 *et seq.*).<sup>3</sup> Δεύτερα κύκλα.<sup>4</sup> Cf. V. 440.

Their heads when rising; and the *Holder's* hands,  
And the first bending of the starry *Snake*.

But of the *Kneeler*—who will ever rise  
Reversed—there comes forth part from opposite; 670  
The lower limbs, and waist, and breast, and shoulder,  
The right hand too. The head and other hand  
Mount with the bow and *Archer* as they rise.  
With these the *Lyre* of *Hermês*,<sup>1</sup> and, breast high  
*Kêpheus*, drive onward from the eastern sea. 675

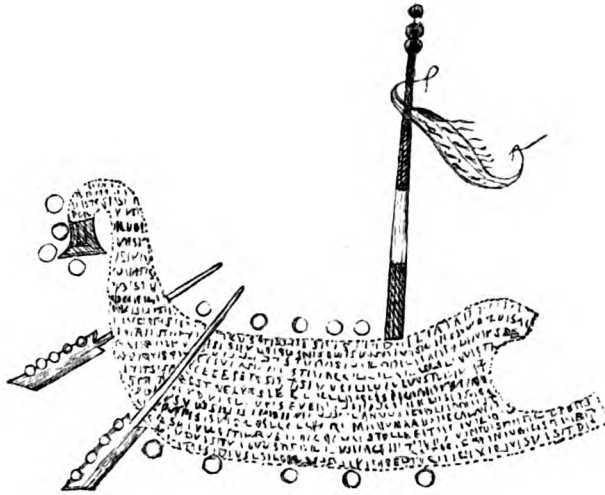


FIG. LVII.—ARGÔ.

Then, too, the glitterings of the mighty *Dog*  
Set, and descends *Oriôn's* whole extent,  
And all the *Hare* for ever chased in vain.<sup>2</sup>  
Yet speed not quickly with the *Charioteer*  
*Kids* or *Olenian*<sup>3</sup> *Goat*; on his vast hand 680  
They shine, distinguished from his other limbs  
For raising storms,<sup>4</sup> when moving with the sun.

Some parts,<sup>5</sup> both head, a single hand, and waist  
The rising *Goat*<sup>6</sup> brings down; all lower parts

<sup>1</sup> Vide V. 598, note.

<sup>2</sup> Vide V. 339.

<sup>3</sup> Vide V. 164.

<sup>4</sup> Vide V. 159, note.

<sup>5</sup> (Of the *Charioteer*.)

<sup>6</sup> *Aigokerôs-Capricorn*, not the *Olenië Air*.



Sink with the *Archer*. Neither *Perseus* then, 685  
 Nor the high stern of starry<sup>1</sup> *Argô* stays.  
 Then, soothly, save the knee and the right foot,  
 Sets *Perseus*, and the *Ship* to the stern curve ;  
 And when the *Goat* arises she goes down ;  
 Then sets the *Dog's-precursor* ; others mount, 690  
 The feathered *Arrow's* stars,<sup>2</sup> the *Eagle*, *Bird*,  
 And, last, the southern *Altar's* sacred seat.<sup>3</sup>

The *Horse*, when first the *Waterpouer* comes,  
 In feet and head revolves ; but opposite  
 Sign-potent Night draws *Centaur* by the tail.<sup>4</sup> 695



FIG. LVIII.—THE GOAT.

His breastplate and his head and shoulders broad  
 As yet she cannot take. But all the heads<sup>5</sup>  
 And neck of the bright *Water-snake* she sinks.  
 Most of its hinder part remains ; yet this,  
 The *Centaur*, too, when first the *Fishes* rise, 700  
 She<sup>6</sup> quickly swallows. With the *Fishes* comes  
 The *Fish* which lies beneath the dusky<sup>7</sup> *Goat* ;  
 Not all, part waits another of the Twelve.<sup>8</sup>

<sup>1</sup> Vide V. 604, note.

<sup>2</sup> *τείρα* (cf. *Il.* xviii. 485).

<sup>3</sup> Vide V. 710, note.

<sup>4</sup> 'Signipotens [a splendid rendering] Nox Caudâ Centaurum retinens' (Cicero).

<sup>5</sup> Πάντα μέτωπα. 'Omnemfrontem' (Micyllus). But probably the *Hydra* of Aratos, the 'Lernaeus turbâ capitem anguis' (Vergil, *Aeneid*, viii. 300), which is in origin a reduplication of the Sea-monster (*Kêtos*) and the equivalent of the Norse Midhgardh-

sormr, and which ultimately appears as the 'Hydra Septiceps' of Aldrovandus (*Serpentum et Draconum Historia*, 386), was at least trikephalic, like the mystical Kemic (Egyptian) snake 'Ruhak, the great charmer.' But Akkad is the original home of the many-headed-serpent-myth (vide *G. D. M.* i. 120; *E. Sec.* vii).

<sup>6</sup> 'Sign-potent Night.'

<sup>7</sup> Vide V. 398, note.

<sup>8</sup> Vide V. 550.

And thus *Andromedé's* sad hands and knees  
 And shoulders are divided ; part in front, 705  
 Whilst part is stretched behind, when from the deep  
 Both *Fish* come forth. Then these her right-hand parts  
 Draw with them ; but the sinister the *Ram*  
 In rising raises. And when he ascends  
 You may behold the *Altar* from the west ;<sup>1</sup> 710

<sup>1</sup> This connexion between the '*Altar's* sacred seat' (V. 692. Cf. Manilius: '*Ara mundi templum est, Astronomicon*, i. 427) and the *Ram* is very interesting, being a reduplication of the prior connexion between the original solar *Ram* and the Heaven-altar on which he is offered up daily; so that the Akkadian name of the First Month, the zodiacal Sign of which is *Aries*, is *Bara ziggur* ('The Altar of the Demiurge,' or 'The Upright Altar;,' called in the abbreviated form 'The Altar' or 'The Sacrifice'). The Seventh Month (present zodiacal Sign *Libra*, vide V. 403, note) is called in Akkadian *Tul ku* ('The Holy Altar,' 'Le Tumulus pur,' Lenormant; 'The Illustrious Mound,' Sayce), and in the abbreviated form becomes also simply 'the Altar,' the patron divinity of the month being *Samas* (the Sun-god, Heb. *Shemesh*); and there is very strong reason to believe that the original Euphratean Zodiac showed a circular altar (cf. V. 440; vide Appendix I. Figs. xxxviii-xl), or perhaps merely a solar circle, the Crown (vide E. 70) of the Sun-god *Dianisi* (*Dionysos*), to be afterwards reduplicated in the *Stephanos* (*Corona Borealis*) and the *Stephanos Notios* (*Corona Australis*). This solar Crown-altar was almost grasped by the adjoining *Claws* of the *Scorpion*, type of *Darkness* (vide Appendix I. Fig. xxvi). Now certain stars in the constellation *Libra* form a very decided circle, and a Euphratean seal in the British Museum shows a large scorpion grasping a circle with both claws (vide Menant, *Empreintes de Cachets Assyro-Chaldéens*, Fig. x. p. 9), a design evidently symbolical. Thus, again, on a very remarkable Euphratean uranographic Stone (vide E. Fig. iv. p. 77) we see the Sun (solar circle), next which a *Scorpion*, and below the latter an *Altar*, in the same relative positions as *Libra*, *Scorpio*, and *Ara*. On this Stone the arrangement of the figures is, to a considerable extent, arbitrary, and the *Altar* mentioned is connected with the planet *Venus* and not with any constellation; but still the coincidence is too remarkable to pass unnoticed, and shows how sun, darkness and *Venus* might reappear, in variant reduplication, constellationally as *Crown-altar*, *Scorpion*, and *Altar*. Euphratean altars, like Classical altars, were of different

shapes, square, pyramidal, and pillar-shaped (apparently round, vide Lajard, *Culte de Mithra*, Pl. xxxii. Fig. 11; Pl. l. Fig. 3; Pl. lii. Fig. 4). Some of these latter were evidently small altars of incense with circular covers, in fact lofty censers. An Assyrian cylinder (Smith, *Chaldean Account of Genesis*, Fig. xxvii. p. 276) shows one of these *Altar-censers* guarded by two *Scorpionmen*, one on either side, *i.e.* *Darkness*, morning and evening, guarding the Sun, a late imitation of which I have shown in Fig. xxxix. (p. 46), and which supplies a further instance in art of the connexion between *Scorpio* and *Ara* (vide L. K. O. 41). But the Euphratean altar-censer clears up a question which perplexed the learned Ideler who, having observed that the Arabs call *Ara El-midschmara* ('the Censer'), remarks:—'The ancients were not agreed on the form of this figure. The *Θυρήριον* of Aratus and the *Ara* of Cicero, Manilius, Hygin and Avien is a sacrificial-table; the *Θυμιατήριον* and *Thuribulum* of Ptolemaeus, Geminus, Vitruvius, and Germanicus is a censer. The former is on the Borgia Globe; the latter is represented on the Dresden.' The reason of this is now apparent; both were archaic Euphratean variant forms of an altar. Ideler continues:—'In Eratosthenés [*i.e.* in the *Katasterismoi*, erroneously ascribed to Eratosthenés], this constellation is called *Nékrap ἢ Θυρήριον*. What *Nékrap* means here I know not' (*Sternnamen*, 280-1). *Nektar*, according to the late usage of the word, means 'fragrance,' and here simply = *Thuribulum*. The constellation is called *Censer* or *Altar*, and we can now see why. In illustration of the connexion between the Sun and fragrance we read in the very fine *Hymn to Amen-Ra*, translated by the late Mr. Goodwin, and considered 'to belong to the nineteenth dynasty, or about the fourteenth century B.C.':—

'Praise to Amen-Ra;  
 The Ancient of heaven, the Oldest of the earth;  
 Single among the gods

['The lonely Bellerophón, the unattended Orión, Melqarth who hunts by himself, Dumuzi the "Only son" of heaven,' K. 147];

Enlightener of the earth;  
 Sailing in heaven in tranquillity.

Elsewhere is *Perseus* rising, head and shoulders ;  
 As for the belt itself, 'tis doubtful whether  
 It shows when ends the *Ram* or with the *Bull*,  
 With which it wholly mounts. The *Charioteer*  
 When the *Bull* rises is not left behind,<sup>1</sup>  
 Since closely linked with it ; yet with this Sign  
 He does but partly rise, the *Twins* his whole reveal.

715



FIG. LIX.—THE SUN.

The *Kids*, the left foot's hollow, and the *Goat*<sup>2</sup>  
 Are carried with the *Bull*, when crest and tail  
 Of the sky *Monster* from below ascend.

720

Most glorious one,  
 Crowned in the house of flame ;  
 Whose fragrance the gods love.'

' King of the East, and girt  
 With song and flame and fragrance.'  
 Tennyson, *Lucretius*.

And again :—

<sup>1</sup> Cf. V. 178.

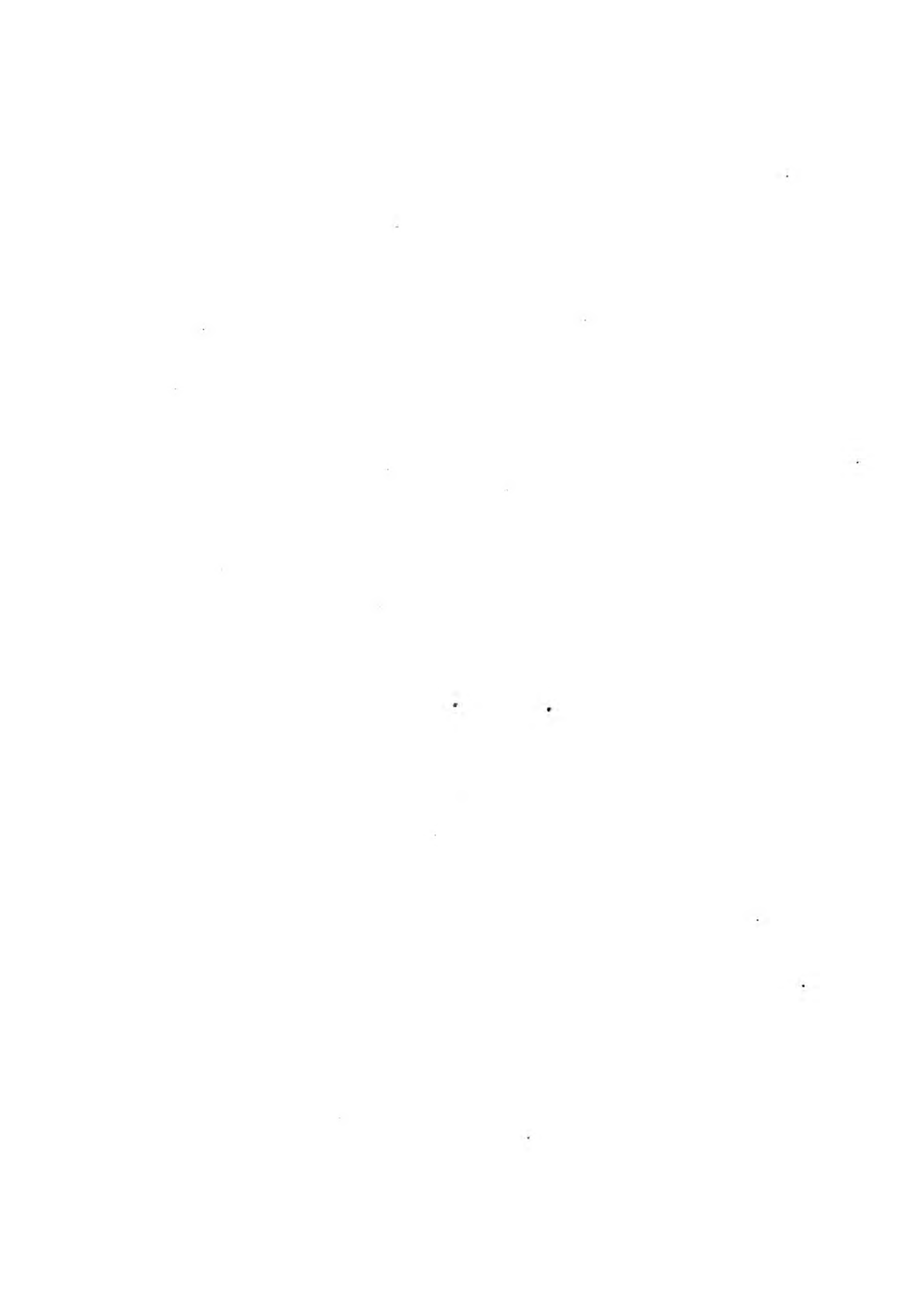
<sup>2</sup> *Capella Olenia*.

With the first Sign of these the *Bearward* sets,  
 Led downwards by the four,<sup>1</sup> save his left hand,  
 For it is placed beneath the *Greater Bear*.  
 The *Serpent holder's* feet, as he descends  
 Up to the knees, may note for you the *Twins* 725  
 Ascending on the other side. No more  
 Is drawn the *Monster* here or there; the whole is seen.  
 On a clear main the sailor now may note  
 The *Stream's* first bend arising from the deep,  
 Whilst waiting for *Orión* to supply 730  
 Some mark of darkness' length or of his voyage.  
 Such signs the gods to men do everywhere reveal.<sup>2</sup>

<sup>1</sup> Vide V. 581, note.

<sup>2</sup> Aratos has greatly exercised scientific astronomers, but the only point which really arises in an astronomical connexion is whether the observations which he has recorded were not fairly true at an earlier period and in another locality (vide Appendix III). For the rest, suffice it to observe with Delambre; 'Aratus n'était point observateur, Eudoxe ne l'était guère davantage. Celui-ci avait fait ou s'était procuré un globe sur lequel, d'après des levers et des couchers, on avait placé grossièrement quelques étoiles brillantes et l'écliptique inclinée de 24°; il fait tourner ce globe, et remarque quelles étoiles se lèvent et se couchent ensemble; quelles constellations seront visibles en différentes saisons de l'année; il fait, de ces remarques faciles et inexactes, un livre pour l'usage des navigateurs' (*Histoire de l'Astronomie Ancienne*, I. xi). 'Il est permis de croire qu'Aratus et même Eudoxe n'avaient observé ni l'un ni l'autre ces couchers qu'ils ont décrits, et qu'ils s'étaient contentés de recueillir des observations faites avant eux, sans trop s'inquiéter si elles avaient été faites à la même époque. . . . On

peut soupçonner qu'au lieu de passer les nuits à observer ces levers et ces couchers, ils auront fait tourner un mauvais globe sur lequel les étoiles auraient été placées fort inexactement. Nous verrons plus tard qu'on faisait de ces globes, qu'on appelait *sphères d'Aratus*, pour l'usage des navigateurs. . . Cette division du ciel en constellations paraît fort ancienne; elle se sera transmise de nation à nation' (*Ibid.* 72-3). In the *Diosêmeia* Aratos notices, amongst other things, the Metonic cycle, the *έννεακαιδεκα κύκλα φαινοῦ ἡελίου* (V. 21); and on this the Schol., after observing that 'tablets' (vide *sup.* p. 3) were placed in the cities 'respecting the nineteen years' cycle of solar revolutions, how that in each year there shall be such and such a winter, spring, summer and autumn, and such and such winds, and many things for the use of men in their daily lives;' and after stating that 'Aratos himself learnt most things therefrom . . . since they are sung from olden time and are familiar to the Hellenes;' adds, 'And the Hellenes received them from the Egyptians and Chaldaeans.'



# A P P E N D I C E S.

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## I.

### NOTES ON THE ILLUSTRATIONS.

I. *Sign-potent Night*.—Vide V. 695. Cf. the triumph of Lêtô (Kosmic-darkness) over Tityos (vide K. 149 *et seq.*).

II. *Kronos*.—As to the curved knife or sickle (the crescent-moon) with which the solar Kronos is often armed, vide *G.D.M.* ii. 129; *U.* 53-4.

III. *The Serpent and the Bears*.—This very incorrect type of representation of these three Signs, which makes no proper difference in size between the *Bears*, and also places the *Greater Bear* within, instead of under, the *Serpent's* tail, obtains also in the *German MS.*, and in the Planisphere of Geruvigus, which latter perhaps first gave the bad example. The three Signs are correctly placed in the map of the Northern Constellations given in the Oxford edition of Aratos of 1672, which is either by Chilmead or Aldrich.

IV. *The Serpent*.—This is an interesting type, inasmuch as the original *Draco* was in all probability more drakontic than serpentine. The *Lesser Bear* was almost certainly a comparatively modern addition to, or rather alteration of, the sphere; which originally commemorated the triumph of Izdubar (the *Kneeler*) over the Euphratean dragon Tiamat (vide *sup.* p. 18). 'This creature, according to the representations of the monuments, was a composite monster, with tail, horns, claws, and wings' (George Smith, *Chaldean Account of Genesis*, 113). Mr. Proctor observes: 'It is impossible not to recognise, from the configuration of this constellation, that the ancients [say rather 'the archaics'] looked on the stars which form the Lesser Bear as forming a wing of *Draco*' (*Half-Hours with the Stars*, 15).

VI. *The Snake-holder and the Scorpion*.—In this instance the artist has strictly followed the poet in every particular (vide Vs. 82-7), except in the size and position of the *Scorpion*, which he has dwarfed to make room for a large meaningless figure holding a pair of scales (*Libra*). He also represents the creature turned the wrong way; its claws, once with the Hellenes a separate Sign (vide Vs. 89, 546), should face the *Scales* which they often hold (vide Fig. vii; V. 710, note). The human figures on the Planisphere of

Geruvigus are generally very roughly drawn and uncouth (vide Figs. xiv, xv); but still, on the whole, display a certain amount of talent and vigour, although shown in a crude form.

VII. *The Scorpion*.—When the *Balance* had been admitted into the Zodiac as a Sign in the place of the *Claws*, the latter still retained a reminiscence of their former position by being depicted as holding the former. *Scorpion* and *Balance* thus appear in the Farnese Globe and in the Oxford Aratos of 1672 (vide V. 710, note).

VIII. *The Virgin*.—Carries in her right hand the *Ear-of-corn* (vide V. 97, note; V. 151, note), and in her left the *caduceus* (formed of the *tuba*, or herald's trumpet, entwined with serpents as usual, cf. Fig. xxii), inasmuch as *Virgo* is one of the Houses of *Mercurius*.

XI. *The Charioteer*.—The *Olenian Goat* (vide V. 164) stands on his hand, a *Kid* fronting it (vide Fig. xlvi, note).

XII. *The Bull* (vide V. 322, note).—As this *Bull* was originally a type of the Horned (Crescent) Moon, *i.e.* of a portion of the lunar orb, he properly appears as a demi-bull. So Ovid: 'Pars prior apparet: posteriora latent' (*Fasti*, iv. 718).

XVI. *The Horse* (vide V. 215).—The *Horse* is generally thus represented; Πήγασος is a type of the Demi-sun as he rises from the springs (πηγαί) of Ōkeanos (*Theogonia*, 282; vide Lajard, *Culte de Vénus*, Pl. xxiv. Fig. 18).

XVII. *The Ram*.—As a rule stars are placed quite vaguely and erroneously on constellation-figures, but a comparison of this illustration with the subjoined list of Ptolemy will show the accuracy of the famous Rosicrucian:—

'The Asterism of the *Ram*—

1. The foremost of the two at the horn. [ $\gamma$ . On the Farnese Globe only the right horn of the *Ram* is shown.]
2. The hindmost [ $\beta$ ].
3. The more northerly of the two at the muzzle [ $\eta$ ].
4. The more southerly of them [ $\theta$ ].
5. The one at the neck [ $\iota$ ].
6. The one at the loins [ $\nu$ ].
7. The one at the root of the tail [ $\epsilon$ ].
8. The foremost of the three in the tail [ $\delta$ ].
9. The centre one of the three [ $\zeta$ ].
10. The hindmost of them [ $\tau^2$ ].
11. The one in the back of the thigh [ $\rho^1$ ].
12. The one under the bend (of the hind leg) [ $\sigma$ ].
13. The one at the end of the hind foot' [87 *Ceti*].

Ptolemy then gives the 5 'unformed stars about it,' the first of them being 'the one below the head, which Hipparchos (places) at the muzzle,' *i.e.* *Hamal* ('*Ovis adultus*'), *a Arietis*, and the original *Krios-Aries* (vide *E.* 28), the 'pecus Athamantidos' (Athamas = Tammuz-Dumuzi, vide *K.* 132), *i.e.* belonging to the Euphratean Sun-god. On

the map of Aratós the *Ram* lay 'stretched at length' on the Equinoctial (vide V. 516), partly in the place now occupied by the head of the *Sea-monster*; and it occupies a similar position on the Farnese Globe. All the principal authorities represent it with head reverted, and looking towards the *Bull*. Similarly, the lunar-power (Unicorn) is often represented looking round towards the solar-power which follows it.

XVIII. *The Fishes*.—This conventional way of representing the *Fishes* generally obtains when they are depicted separately (*e.g.*, on the porch of S. Margaret's Church, York; in the Durham and German MSS.; in the *Hyginus* of Micyllus; and in *The Astrologer of the Nineteenth Century*, 1825); but never when they are drawn with other constellation-figures.

XIX. *Head of Perseus*.—The hero is represented in the original illustration as holding in his right hand the *harpé* or sickle-scimitar (crescent-moon, vide Fig. ii), with which he slew the Gorgô (Pherekydês, *Fragment xxvi*; vide V. 57, note).

XX. *The Clusterers*.—The original shows Steropê, the dark sister, the third figure of the four uppermost wearing a very dark blue headdress. This group was probably identical with the Euphratean constellation, the *Prolific Family* (vide note 3, p. 9).

XXII. *Hermês-Stilbôn-Mercurius*.—The god, from whose shoulders stretch large wings, a feature which appears at times in his representations in Hellenic art, and also in *Virgo*, one of his celestial Houses (vide Fig. viii), holds in his right hand the wine-flask. Similarly, at times, in Dionysiac scenes, Hermês hands Dionysos the *kantheros* (vide *Catalogue of the Greek and Etruscan Vases in the British Museum*, No. 447). His left hand carries the *kerukeion-caduceus*, which is of a usual form. This staff was originally an olive-branch with a wreath or garland twined around it, and Hesychios (In voc. *Drakonta*) seems to imply that Sophoklês (*Philoktêtês en Troia*, *Fragment v*) was the first, or one of the first, to introduce the Serpents (into poetical description). These latter belong to mythological astronomy, in the same way that serpents are connected with the orbits of Sun and Moon (vide U. 72). The planet *Mercury*, called by the Greeks generally *Stilbôn* ('the Glitterer'), is referred to by Platôn as 'the Star sacred to Hermês' (*Timaios*); the reason of the selection being that Hermês was regarded as the analogue of Nabu (Nebo, the 'Proclaimer,' *i.e.* precursor of the Sun), to whom the star was sacred in the Chaldean system. Similarly, the stars of Merodach, Nergal, and Istar became respectively consecrated to Zeus-Jupiter, Arês-Mars, and Aphroditê-Venus. The Hellenic Hermês having been identified, despite a very proper protest on the part of the Fetiales, the college of priests at Rome who were the special guardians of the forms of religion, with the Latin Mercurius, a divinity of commerce and traffic (*merx*), the god is often represented in later art with a purse, which in the present instance hangs with an inkhorn from his girdle. He has the usual ankle-wings (*talaria*). A Euphratean name of *Mercury* is 'the Blue-star,' and in the coloured illustration in the MS. it is noticeable that the mantle, purse, inkhorn, and serpents are coloured blue. Another name of the planet is *Dapinu* ('the Circler'), and the blue serpents would appropriately mark the track of the blue star.



XXIV. *The Goat*.—For a full account of the origin of *Capricorn*, the Sea-goat, vide R.B. Jr., *On the Origin of the Signs of the Zodiac*, Part II. Sec. xi. (In *Archæologia*, xlvi); *L.K.O.* Sec. xix; *E.* 59, 77; cf. Figs. xlix, lviii.

XXV. *The Archer*.—In the Appendix to *L.K.O.* I have given numerous examples of all the 12 (original) Signs of the Zodiac in Euphratean art (cf. Figs. lii, lvi).

XXVI. *The Scorpion*.—The Sign is here shown as ‘a conventional beast with a long pointed and twisted tail’ (cf. the *Scorpion* on a thirteenth-century tile, Shaw, *Tile Pavements from Chertsey Abbey*, Pl. vii).

So on the porch of S. Margaret’s, York, the *Scorpion* appears as a four-footed reptile with a pointed head and nowed tail.

On one of the portals of the cathedral at Amiens it is shown as ‘a kind of six-legged tortoise-looking animal with a fish’s tail.’

The creature represents Darkness, ‘the daughter of the Sun’ (*Kemic Funereal Ritual*, cap. lxxxvi), in monstrous form; and in the original Euphratean Zodiac was next the solar *Altar*, which it seized and followed (vide *L.K.O.* Secs. xvi, xvii.; *E.* 23; V. 710, note). In Euphratean art it is sometimes correctly depicted (cf. Fig. liv), and sometimes shown as a monstrous scorpion-man, or a pair of scorpion-men, representatives of the Darkness Eastern and Western (cf. Figs. xxxix, xlvi).

XXVII. *The Bird* (vide *E.* 69).

XXIX. *The Dolphin*.—The *δελφίς*, or, according to a later form, *δελφίυ*, Middle Eng. *dolphyne* or *delfyn*, is the creature that comes forth from and plunges into the hidden Underworld (*δελφύς*), the ‘belly-fish,’ or fish from ‘the belly of Scheôl’ (cf. *Jonah*, ii. 2). So Mr. Ruskin says:—‘The dolphin in Greek symbolism means secondarily, the ascending and descending course of any of the heavenly bodies from one sea horizon to another—the dolphin’s arching rise and replunge [as shown in the illustration] being taken as a type of the emergence of the sun or stars from the sea in the east, and plunging beneath in the west’ (*Queen of the Air*, i. 39). So Athênê, the Dawn-queen, at times bears the dolphin-sun on her shield; and Apollôn crosses the sea to Pytho (‘the Oracle’) as *Delphinios*, and names his new colony *Delphoi*; which latter place again was said to have been founded by *Delphos* (the Dolphin-sun), son of *Poseidôn* (the Sea) and *Melanthô* (‘the Black’ Night). The original zodiacal fish *Piscis* (afterwards *Pisces*) is constellationally reduplicated in the North by *Delphinus*, and in the South by *Piscis Notius* (vide *E.* Secs. xxix, xxx). Thus, again, the Sun-god *Baal-hamon* (‘the Burning-lord’), called by the Hellenes *Palaimôn* (‘Wrestler’), and hence connected with games, is represented in works of art as dolphin-borne; and, according to mythic legend, was thus carried to the Korinthian shore (*Pausanias*, II. i. 3). The story of the dolphin-borne harper *Ariôn* (cf. *Oriôn*), son of *Poseidôn*, is equally connected with the same locality (*Hêrodotos*, i. 23–24; *Ovid*, *Fasti*, ii. 79 *et seq.*). On Hellenic shields the dolphin generally is represented as *embowed*; in the illustration it is moving to the sinister, and is therefore *counter-embowed*. Being such an ancient and renowned solar emblem it naturally stands at the head of fish in heraldry; and the great estimation in which the Charge was held

is aptly shown by its bearing in France being restricted to the heir to the throne. 'Delphin clarum sidus' (Ovid, *Fasti*, i. 457).

XXXI. *The Dog-star guiding the solar Orión-Ophiouchos*.—For a full explanation of this remarkable representation, vide *E. Sec. iv.*; *K. 89 et seq.*

XXXII. *The Dog* (vide Fig. lxi).—Aratos describes the Dog as *salient* (V. 327), and bearing the star *Sirius* at the end of his jaw (V. 330), a position faithfully represented on the Farnese Globe, where he is depicted radiate, and generally by moderns. The illustration is correct with respect to the position of *Sirius*. It is very remarkable that the same position of the Dog is shown on a Euphratean Boundary-stone.

XXXIII. *Argô*.—This vessel is more usually depicted as a demi-ship (vide Fig. xvi, note). Thus it appears on the Farnese Globe, in Cicero's *Aratos* (vide Fig. lvii), and in the Oxford *Aratos*. (As to *Argô*, vide *E. Sec. v.*; *K. 98.*) Aratos, however, mentions both the prow and the stern.

XXXIV. *The Sea-monster*.—Originally the Euphratean Tiamat (vide *E. Sec. vi.*; cf. Figs. xxxvii, lv). The mysterious sea in which he dwells 'is formed by the undefined blending of the Oversea—the "mare magnum sine fine," in which the solar and lunar barques sail; the Ocean-proper, which of unknown and awful vastness enrings the world, the Midgard; and the Undersea, invisible and fathomless to man, and in which the golden solar boat-cup disappears' (*K. 8*).

XXXV. *The Stream*.—As to the *River*, vide generally *E.*, particularly Appendix IV. Representations of the Constellation *Eridanus*; and Appendix V. The *Eridanus* of Ptolemy.

XXXVI. *The Fish* (cf. Fig. xxix).—For some reason the artist, instead of placing *Fomalhaut* (vide V. 397, note) in the mouth of the *Fish*, has introduced the 'Stella Canopus,' the Kemic *Karbana* and Assyrian *Karbanit*, and which is in the paddle of *Argô* (As to *Kanôpos*, vide *E. 14*).

XXXVIII. *The Altar*.—It has been very customary, contrary alike to ancient writers, the Farnese Globe, and the Planisphere of Geruvigus, to represent the *Altar* as inverted. Manilius speaks of 'Ara ferens turis, stellis imitantibus, ignem' (*Astronomicon*, v. 340), from which it is evident that the flame of the *Altar* was conceived as rising northwards through the *Milky Way* (cf. Fig. xl).

XXXIX. *The Same* (vide V. 403, note).—'In mythological artistic combinations when two personages, creatures, or other objects, stand one on each side of a central object or design, they very frequently represent the powers of morning and evening, e.g. dawn and twilight, the rising and setting sun, darkness eastern and western, etc. . . . Thus in Euphratean design the heavenly altar with its solar flame is guarded or assailed on either side by a Scorpion-darkness-demon' (*K. 153-4*).

XL. *The Centaur and the Altar* (cf. Fig. xxxviii).—The Farnese Globe here slightly differs from Aratos, i.e. the *Centaur* holds the *Wild-beast* in his *left* hand (vide Vs. 439-42), or rather stretches out his left hand towards it. (As to the *Centaur*, vide *L. K. O. 60*; *E.*

Sec. ix.) The *Altar* is circular, in accordance with Aratos, who speaks *διωτοῖο Θυτηρίου*, a point to be remembered in a solar connexion. *Δίση* was the rotating heaven of Empedoklés, the altar on which the solar flame ascends ‘stellis imitantibus.’

XLI. *The Water-snake, Bowl (Cup), and Crow*.—The ‘Lernaean anguis,’ here trikephalic. The zodiacal *Crab* which assisted the *Water-snake* against the solar Héraklés, came out of the same marsh, and so is also at times called Lernaean (vide Ideler, *Sternnamen*, 159). The German MS. makes no pretence of traditional accuracy, but the Farnese Globe (which is generally very correct) shows the *Water-snake* exactly as described by Aratos; the *Cup* is the Bakchic *kantharos*, and the *Crow* ‘seems to peck the fold’ (V. 449; as to *Hydra*, *Crater*, and *Corvus*, vide E. Sec. vii). ‘Anguis, Avis, Crater, sidera juncta micant’ (Ovid, *Fasti*, ii. 266).

XLII. *Arés-Pyroeis-Mars* (vide Fig. xxii).—The god in his right hand carries a torch which burns redly, he being the ‘red star.’ By his side stands *Capricorn*, one of his Houses.

XLIII. *Head of Aphrodité-Paphié-Venus*.—The star *Heósphoros-Hesperos, Lucifer-Hesperus*, corresponds with the double-phased Istar (=Aphrodité, vide E. 32, 52) whose Akkadian name is *Dilbat* (=As. *nabu*, ‘proclaimer,’ cf. Fig. xxii), the *Delephant* of Hesychios; and who, as the Morning-star, is goddess of war (‘Early wooden images at Sparta exhibited Aphrodite in armour as a deity triumphant over all might and strength,’ K. O. Müller, *Ancient Art and its Remains*, 474), and as the Evening-star, is goddess of love, a reduplication of the Kirkê-moon (vide E. 72, note 13). So an Inscription reads:—

‘The spark Venus at sunrise (is) Istar of Agane by name.  
The spark of Venus at sunset (is) Istar of Erech by name.’

(Ap. Prof. Sayce, in *Trans. Soc. Bib. Archaeol.* iii. 197.)

But Istar, like Lunus-Luna, combines sexual potentialities, and so we read:—

‘Venus is a female at sunset.

Venus is a male [As. *zicarat* = “male-ess,” Ak. “male-female”] at sunrise.’

This divinity reappears as the Ashtar-Ashtarté of Syria, ‘the bearded Venus Amathusia, “eadem mas et femina”’ (Ginsburg, *The Moabite Stone*, 44). Pliny says of *Venus*, ‘Magnitudine extra cuncta alia sidera est. . . . Alii Iunonis, alii Isidis, alii Matris Deûm appellavere’ (*Hist. Nat.* ii. 6). Another of its Euphratean titles was *Mustelil* (‘the Brilliant’); and Geo. Smith, when travelling in the country, writes, ‘Venus rose each morning like a lamp’ (*Assyrian Discoveries*, 109; vide R. B. Jr. *The Myth of Kirké*).

XLVI. *The Milky Way*.—The *Circulus Lacteus* is held by the nymph Galaxurê (vide E. 71–73), whilst Night (the Female-darkness-power) sleeps.

XLVII. *The Charioteer*.—A reduplication of the original solar Charioteer (cf. Fig. lix).

XLVIII. *The Crab*.—The Rev. Canon Greenwell truly describes this creature as ‘a beast more like a water-beetle than a crab.’ But in origin the zodiacal *Crab* is merely a variant or rather ‘dedoublement’ of the zodiacal *Scorpion*, both equally representing

Darkness as the great Seizer (vide V. 385, note ; V. 710, note). Thus in the *Mensium Notae* in the Cologne edition of Bede we find :—

‘Junius. Sign. An *eight-legged reptile* with narrow body, long tail, and two horns and eyes, for Cancer.’ Cf. Ovid ; ‘Octipedis brachia Cancri’ (*Fasti*, i. 313).

‘October. Sign. *Eight-legged reptile*, for Scorpio.’

(Vide Fig. ix ; Fig. xxvi, note ; Fig. xli, note ; and the *Crab* on a thirteenth-century tile (Shaw, *Tile Pavements from Chertsey Abbey*, Pl. vii).

XLIX. *The Goat* (cf. Fig. xxiv, note).—All proper representations of this Sign show a Goat-fish (vide Fig. lviii). So on a Syrian seal, cir. B.C. 187, we find ‘un capricorne à queue de poisson . . . A Rome sous les empereurs, on se servait de cachets assyro-chaldéens. Auguste avait adopté un cachet semblable à celui-ci pour sceller ses décrets’ (Menant, *Empreintes de Cachets Assyro-Chaldéens*, 39, Fig. 81 ; vide Pliny, *Hist. Nat.* xxxvii. 1 ; Suetonius, *Augustus*, i. 49. For other examples of the *Goat* in Euphratean art, vide *L.K.O.* Appendix, Sec. x). On the Farnese Globe the head of the animal alone is left. The Oxford *Aratos*, Cicero’s *Aratos*, and Geruvigus all show a demi-fish (vide Fig. xvi, note).

LI. *The Moon*.—This very curious and interesting representation shows the silver (white) *Luna*, her moon-boat on her head, whilst upon her white garment is portrayed the dark Face in the orb ; and as the queen of moisture she pours out a stream of dark water. (For an interesting account of a Lake and a Fount of the Moon-goddess Inô, vide Pausanias, III. xxiii. 5 ; xxvi. 1.) The moon-bull of Selênê Taurokerôs (vide Fig. xii, note) accompanies his mistress (vide *U.* 68, note 1 ; *L. K. O.* Sec. xi. ; *K.* 150–1). Astrologically, *Taurus* is ‘domus Veneris nocturna,’ and ‘gaudium Veneris ;’ and the planetary *Venus* is a reduplication of the originally lunar Istar (vide Fig. xxii, note). The Euphratean Moon-god is shown on the cylinders standing in his crescent-boat, and with the crescent-moon above his head (vide Rawlinson, *Ancient Monarchies*, vol. ii. Fig. 6). The myth of the Face in the orb (vide Plutarch, *On the apparent Face in the Moon’s orb*) is archaic, for Epigenês of Sikyôn, ‘the most ancient writer of tragedy’ (Suidas, in voc. *Thespis*), in a lost work called *The Poetry of Orpheus*, says that the Theologer called ‘the moon Gorgonian on account of the face in it’ (Clemens Alex. *Stromata*, v. 8). ‘Now the Gorgon-power=Nocturnal-darkness + Moon’ (*U.* 49 ; vide Sec. vii. Medousa the Gorgô) ; and the subsequent idea of a Gorgon-face in the Moon is a reduplication of the prior more extended Gorgô, and works out the wider concept in connexion with later ideas, astronomical and psychical. In the *Kemic Book of Respirations*, translated by M. de Horrack, and which ‘probably dates from the epoch of the Ptolemies,’ the wish is expressed concerning a deceased individual—

“That his soul may rise to heaven in the disk of the Moon.”

This is the doctrine of ‘the Ascent of Souls,’ and Iamblichos states that the Egyptians of his day ‘assign to the moon government of the whole of nature about generation’ (*Peri*

*Mysteriôn*, viii. 3) ; for, as Okellos, the Lucanian, who lived earlier than Platôn, observes, 'Ἴσθμὸς γὰρ ἐστὶν ἀθανασίας καὶ γενέσεως ὁ περὶ τὴν σελήνην δρόμος (*Peri tês tou Pantos Phuseôs*, ii. 2). Man, according to the doctrine set forth in Plutarch's work, consists of Body + Soul (*Psyche*) + Mind (*Nous*). The 'first death' occurs in 'the region of Démêtêr,' *i.e.* on earth, and severs Body from Soul and Mind. 'The second death takes place in the Moon, the dominion of Persephonê,' and separates between Soul and Mind. Ere this occurs all Souls wander for a term twixt Earth and Moon; and this state is penal for the Wicked but purifying for the Righteous, in whose case it resembles the ceremonies observed on earth prior to initiation into the Mysteries. The Righteous-souls then occupy an aërial region called 'the Meadow of Hades.' This is the Homeric 'mead of asphodel' (*Od.* xi. 539), the choicest portion of the Land of Shades, transplanted on high. The Righteous, having at length safely reached the Moon, after a while 'the Mind separates itself from the Soul out of a desire of reaching the Image in the Sun' ('This Soul of the Sun, which is better than the Sun, ought by every man to be deemed a god,' Platôn, *Laws*, x), 'through which shines forth the divine and blissful, to which every unmixed nature aspires in different ways.' But the Wicked are unable to reach the Moon, because 'the so-called Face frightens them when they come nigh, looking grim and horrible' (cap. xxix, ap. C. W. King); and thus every psychical existence is unable to pass this last and lowest of the heavenly circlers and gain the pure noetic region beyond and above.

That Persephonê, whose name Plutarch understands to signify 'Light-bringer,' and who has the sole control of the lunar Gorgô-head (*Od.* xi. 634-5), had also, like Istar, an archaic lunar character seems highly probable. I have treated at length of the Crescent-moon in *The Unicorn*, and of the Full-moon in *The Myth of Kirké*.

LII. *The Archer*.—Shows the arrow flying from the bow, an exceedingly rare type (vide Fig. xxv, note; Fig. lvi; as to Hêraklês-*Sagittarius*, vide K. 162-3).

LIV. *The Scorpion* (vide Figs. vi, vii, xxvi, and notes).—For a full consideration of this very remarkable Stone, vide *E.* Appendix II.

LV. *The Sea-monster* (vide Fig. xxxiv, note).

LVIII. *The Goat*.—A remarkable instance of the principle of 'fixity of type' (cf. Figs. xxiv, xlix, and notes).

LIX. *The Sun*.—*Sol*, king of heaven, with crown and sceptre, is on his meridian throne, where he appears for the moment to be almost stationary, a condition re-duplicated at the solstice; so that his red and white horses, by pulling different ways, cause him to remain motionless. His left hand holds the radiant leonine head, the Lion having been always sacred to him (vide *U.* Secs. xi, xii), as, astrologically, *Leo*, a Sign adjoining the summer solstice, is his House. The Wheel—*Ixiôn's* wheel—is a familiar solar emblem (vide *G. D. M.* ii. 46 *et seq.*). The position and car of *Sol* greatly resemble those of the *Charioteer* (Fig. xlvii).

LX. *The Cherub-sun*.—That the Sun flies through the air is an idea so natural as to be almost necessary, and is expressed by the winged solar disk, equally common to regions

Nilotic and Euphratean. So, in Classical mythology, the Sun-god and the Dawn-goddess often appear as winged. The Sun-god has also a semi-chthonian and telluric character, inasmuch as he constantly passes through the Underworld, and thus presents a striking type of revivification or resurrection. Hence he is suitably portrayed on tombs. But his wings may take various symbolical forms, and thus in Kem at times appear as 'sacred uraei,' the solar serpents of light, life, health, and healing. Thus, again, a Helleniko-Kemic design (vide *G.D.M.* ii. Frontispiece. *Dionysos Psilas*) shows the solar-egg, 'the golden Ape of the gods without hands or feet' (*Funereal Ritual*, xlii), the Vedic Martanda ('Egg-of-death,' vide *Rig-Veda*, X. lxxii. 7, the Sun-god being the first who died, *Ibid.* X. xiv. 2), supported on either side by the twin serpents (wings) of plenty, each of which bears on its head the *medimnos* or *modios* (corn-measure), since it is the sun which makes earth yield her increase.



FIG. LX.—THE CHERUB-SUN.

A remarkable amulet of the same period (vide Caylus, *Recueil d'Antiquités*, vi. Pl. iii. Fig. 1) shows the sacred solar beetle, volant, with double wings, a pair for the diurnal and a pair for the nocturnal sun. Its four horns, two reaching upwards and two downwards, show the golden solar track through the Upper and Under worlds, in accordance with the statement in *Orphic Fragment* vi:—

' On each side are the two golden taurine horns,  
The risings and settings, the tracks of the celestial gods.'

Resting upon the beetle, and between the two upper horns, is the youthful head of Har (Horus), the young Sun of the morning, with his face towards the west, and upon his head is placed the white solar disk of day—a complete explanation of the whole elaborate symbolism.

But in Hellenic and Latin regions the anthropomorphic principle prevails, at all events to a very great extent. Thus a Roman tomb (Montfaucon, *Supplement*, v. Pl. xvi. Fig. 2) shows a human head *affronté*, surrounded but not touched by rays of flame, type of the radiate Sun-soul, hidden in the Underworld, but unquenched.

A second example (*Ibid.*, Pl. xvii. Fig. 2) shows a similar head, below *but not touching* which (thus preserving the anthropomorphic principle, vide *G.D.M.* i. 359, *et seq.*) is on either side a serpent (wing).

Lastly, we have the example above (Fig. lx), from which of course proceeds the modern tombstone (so-called) Cherub, a creature having no connexion, except in name, with the Assyrian Kirubi (winged and human-headed bulls) and the Hebrew Cherubim.

LXI. *The Dog*.—This very interesting Euphratean representation shows the *Dog* in the exact position described by Aratos, *i.e. salient*, ‘standing on both hind feet’ (V. 327). The attitude has ever since been preserved in good delineations of the constellation-figure when grouped with others. Thus, the *Dog* so appears on the Farnese Globe, in Cicero’s *Aratos*, in the Planisphere of Geruvigus, in the interesting sheet of constellation-figures appended by Sherburne to his edition of Manilius, published in 1673, in the Oxford

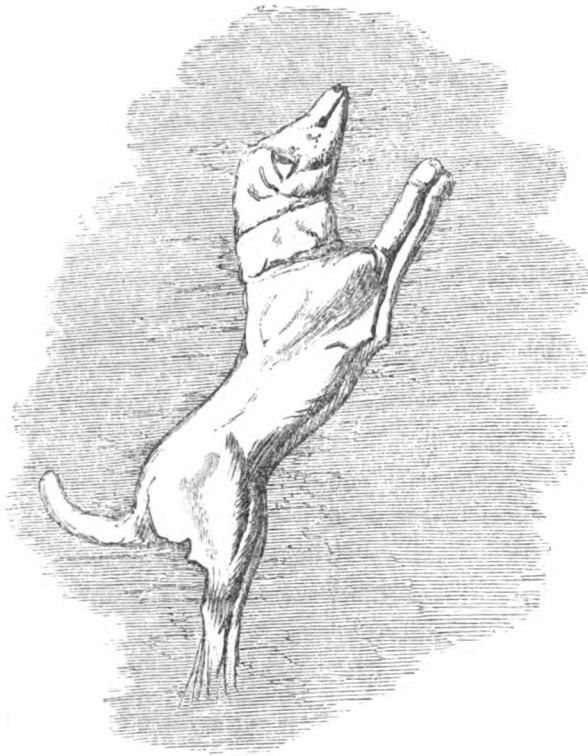


FIG. LXI.—THE DOG.

*Aratos* of 1672, in Flamsteed’s Atlas, and generally in modern representations. No one can truly say that the stars in the constellation *Kuón* resemble a dog; but when, for other reasons, a celestial Dog had been located in that part of the heavens, then these stars were adapted to his form, and his attitude was naturally *salient*, inasmuch as he is in full cry after the adjoining *Hare*.

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## II.

*THE ANTEDILUVIAN BABYLONIAN KINGS AND THE ECLIPTIC.*

It is now many years since Ideler and Guigniaut, contrary to the views of Letronne, arrived at the correct conclusion that our familiar Signs of the Zodiac were Euphratean in origin, a result which draws various important corollaries in its train. The labours of these earlier workers have been obscured by the far greater brilliancy and the wider results of the efforts of their successors, notably of Prof. Sayce and the late Fr. Lenormant, who have placed the Euphratean theory beyond the pale of discussion; and I have endeavoured in *The Law of Kosmic Order* and *Eridanus, River and Constellation*, to carry on the work, which even now is in quite an early stage. Stellar mythology and astrology are mainly non-Aryan; the *Rig-Veda* has little to say about the stars, and the *Avesta* still less. The early Hellene noticed a few prominent stars and star-groups in connexion with agricultural operations or temperature (As to a curious cult in connexion with the Dog-star, considered as the Genius of hot weather, vide Duncker, *History of Greece*, i. 75; 'the Greeks counted 50 days of the dog-star,' *Ibid*, 82); but his religion and mythology 'had scarcely any reference to astronomy' (Sir G. C. Lewis, *Astronomy of the Ancients*, 62). It is the Akkadian, and after him the Semite—Babylonian, Assyrian, Aramean, Hebrew, and Arabian—whom we find devoted to a stellar cult and investigation.

The ten antediluvian Babylonian kings who are said to have reigned 120 *sars* (= 432,000 years) have long presented an interesting problem. In Akkad sixty was the unit, and, according to Bêrôsos, the time-periods were a *sos* (sixty years), a *ner* ( $60 \times 10 = 600$ ), and a *sar* ( $600 \times 6 = 3,600$ );  $3,600 \times 120 = 432,000$ . Two Akkadian modes of division of the circle are into 12 and 120 ( $12 \times 10$ ,  $60 \times 2$ ) parts; and, according to Dr. Edkins, twelve and ten also form archaic Chinese cycles. The use of ten in this ascending scale will be noticed, and the fragmentary Planisphere S. 162 (B. M.) shows a division into twelve parts of ten degrees each.

Various nations have legends of ten (perhaps = 'many,' probably originally fingers + thumbs) archaic heroes or kings. This number becomes definite, and is ultimately applied in Akkad to a heaven-circle. Ptolemy (*Tetrabiblos*, i. 22) says the Chaldeans divided each sign into ten parts (greater degrees); and, each such part containing  $60'$ , and each minute  $60''$ ,  $10 \times 60 \times 60 (= 36,000) = \frac{1}{12}$  of the circle; and  $36,000 \times 12 = 432,000$ , or the circle divided into seconds. Thus the 120 *sars* =  $360^\circ$ , and, similarly, the Akkadian year was composed of twelve months of thirty days each = 360 days.

Whatever the ten kings may have originally represented, we thus find them connected with a heaven-circle; and the most obvious heaven-circle is the ecliptic, known in Akkad as 'the sky-furrow,' ploughed primarily by the heavenly bull. The kings, therefore, practically appear in the account of Bêrôsos as stellar reduplications; and it next becomes



obvious that the lengths of their reigns, which are clearly not arbitrary, must correspond with the distances separating certain stars, probably near the ecliptic. So regarded, the list appears somewhat thus:—

King	Reign in <i>Sars.</i>	Degrees.	Point in Ecliptic.	Degrees.
Alôros . . .	10 =	30	<i>Hamal</i> . . .	31
Alaparos . . .	3 =	9	<i>Alcyone</i> . . .	10
3rd King . . .	13 =	39	<i>Aldebaran</i> . . .	43
4th „ . . .	12 =	36	<i>Pollux</i> . . .	36
5th „ . . .	18 =	54	<i>Regulus</i> . . .	53
6th „ . . .	10 =	30	<i>Spica</i> . . .	44
7th „ . . .	18 =	54	<i>Antares</i> . . .	53
8th „ . . .	10 =	30	<i>Algedi</i> . . .	20
9th „ . . .	8 =	24	<i>Deneb Algedi</i> . . .	16
10th „ . . .	18 =	54	<i>Skat</i> . . .	54
	<hr/>	<hr/>		<hr/>
	120	360		360

Several of the periods show a considerable difference, as, making allowance for all the circumstances of the case, is not unnatural; but the result on the whole is remarkable, and certainly seems to indicate the method by which to approach the problem. We have to take the numbers as we find them, and we know that some of the figures of Bêrôsos were reported differently by Apollodôros and Abydênos.

The kings, then, probably represent (1) certain obvious natural phenomena, and (2) such phenomena reduplicated in stars at a period prior to formal astronomy of any kind, and to any regular division of the ecliptic. The first two names, Alôros and Alaparos, have long been connected in some way or other with *Aries* and *Taurus*; and perhaps *Alor-os* = the As. *Ailuv*, Heb. *Ayil*, and is a translation of the Ak. *Lu-nit* ('male-sheep'). In one list the Ak. *Si-mul* ('Horn-star') appears as the equivalent of *Ailuv* (vide Rev. Wm. Houghton, in *T. S. B. A.* v. 44); and there is much reason to connect the stellar Alôros with *Hamal* ('The Ram,' *a Arietis*).

Alaparos, the second king, is equally connected in some way with *Taurus* and the second month (Airu-Iyyar), which, as Prof. Sayce has shown, was at one time called 'the Foundation,' and may have once been the first month. Alap-ar-os (Ak. *alap*, 'divine bull,' and *ur*, 'foundation'), 'the Bull-of-the-foundation,' or, possibly, 'Bull-of-light' (Ak. *ur*, 'light'), is here the moon, the prolific and light-bringing power which marks the seasons and kosmic order, and is reduplicated in *Aldebaran*, 'the Follower' (of the *Pleiades*), also called 'the Bull's eye;' just as the original Ram-sun, which we met with alike in Egypt, India, and Greece, is reduplicated in *Hamal-Aries* (As to the Law of Reduplication, vide *L.K.O.* Foreword; *E. Sec.* x). Both sun and moon have a most archaic connexion with the Bull (vide *G. D. M.* ii. 112 *et seq.*; *K.* 151); but, in rudimentary astronomy, the ecliptic was perhaps first regarded as the path of the Moon-bull.

## III.

## THE CELESTIAL EQUATOR OF ARATOS (Vs. 511-24).

IN further illustration of the archaic character of the observations recorded by Aratos, and of their correctness at a certain period, let us consider his account of the Equinoctial in connexion with the annexed map of the principal stars near the Equator for the Equinox B.C. 2084, a date when the Babylonian formal scheme or chart of the heavens had been already compiled. The Equator is marked red; the outlines of the constellations particularly in question are shown in blue; the localities of other and neighbouring constellations are indicated by their names, and various extraneous stars of the first magnitude are also shown. I will take the constellations named by Aratos in order, and it will be observed that in every instance except one—in which the error is as gross as it can possibly be, and affords a good illustration of the knowledge or ignorance of Aratos himself—the description *exactly* tallies with the map.

I. *The Ram* (vide Fig. xvii) :—

σῆμα δέ οἱ Κριὸς . . . . .  
Κριὸς μὲν κατὰ μῆκος ἐηλάμενος διὰ κύκλον.

The stars shown on the Map are (1)  $\alpha$ , *Hamal*, ‘the Ram,’ an excellent instance of how a constellation was formed from a star, as a county from a county-town (vide *E.* 28); (2)  $\beta$ , called with (3)  $\gamma$ , by the Arabian astronomers, *El-sche-ratain* (‘the Two-signs’), and forming the first of the 28 Moon-stations; (4)  $\delta$ , (5)  $\epsilon$ , (6)  $\zeta$ , and (7)  $\sigma$ . (For the Ptolemaic description of the Ram-stars, vide *sup.* p. 70; for notice of Euphratean representations of the *Ram*, vide *L.K.O.* 79-80; *E.* 58, 77).

II. *The Bull* (vide Figs. xii. lxii) :—

Ταύροί τε γούνατα κείται,  
Ταύρου δὲ σκελέων ὄσση περιφαίνεται ὀκλάξ.

The stars shown on the Map are (1)  $\alpha$ , the red *Aldebaran* (‘the Follower’ of the *Pleiades*), also called *Ain-el-Tawr* (‘The Eye-of-the-Bull’); (2)  $\beta$ , *Nath* (‘Horn-push’), ὁ ἐπ’ ἄκρου τοῦ βορείου κέρατος (Ptolemy); (3)  $\gamma$ ,  $\delta$ , and  $\epsilon$  (*Hyades*); (4)  $\zeta$ , ὁ ἐπ’ ἄκρου τοῦ νοτίου κέρατος (5);  $\eta$ , *Alcyone*; and (6) 17, another of the *Pleiads*. The ‘crouching legs’ of the *Bull* are excellently shown in the annexed figure from a Euphratean Boundary-stone, upon which constellations are portrayed as usual, *i.e.* in their character of daimonic guardians and not according to astronomical position. The remark of Aratos (V. 167) connecting the *Bull* with the *Driver* is a Hellenic idea, and does not represent an archaic combination. (For notice of Euphratean representations of the *Bull*, vide *L.K.O.* 80; *E.* 59, 77).

III. *Orión* (For detailed notice of this constellation, vide *E. 9 et seq.*):—

ἐν δέ τε οἱ ζώνη εὐφραγέος Ὀρίωνος·

The stars shown on the Map are (1) *a*, *Betelgeuse*, i.e. *Ibt-al-Jauza* ('Armpit-of-the-Giant'); (2) *β*, *Rigel* ('Foot,' of the Giant), the Toe of Orwandil, the Norse Orion (vide Vigfusson and Powell, *Corpus Poeticum Boreale*, ii. 13), and fifth of the stars of the first magnitude; (3) *γ*, *Bellatrix*, the Amazon, ὁ ἐπὶ τοῦ ἀριστεροῦ ὄμου. (4) The *Belt*-stars, i.e. *δ*, *ε*, and *ζ*, which were parallel with the Equator of B.C. 2084; (5) *θ*; (6) *λ*, ὁ ἐν τῇ κεφαλῇ νεφελοειδῆς, which, it will be observed, is nearly on the Equator; and (7) *κ*, *Saiph* ('the Sword').



FIG. LXII.—THE BULL.

Now the *Belt*-stars in B.C. 2084 were not on the Equator, but about  $12^\circ$  below it; and at the present time *δ*, *Mintaka* ('the Girdle'), is immediately below it. Hence at the era of Eudoxos these stars were still more than  $6^\circ$  below the Equator. Now supposing Aratos to have written ζώνη, which is very probable, it must be concluded either that he, or Eudoxos, or some of their predecessors, misrepresented the ancient statement; for, it is impossible that the original account should be so exactly correct in every other case, and so glaringly inaccurate in this. Nor is it difficult to see how the error might arise; for an unskilled astronomer, or a poet who was no astronomer, would doubtless know the *Belt* of *Orión*, but would probably never notice *λ*, the 'cloud-like' star or stars in the Giant's head, and, consequently, in their verses would speak about ζώνη when the archaic account mentioned (as doubtless it did) κεφαλή; not, be it observed, 'the bright head of *Orión*,' for the head is comparatively dim, but 'the (dim) head of bright *Orión*.' I do not therefore hesitate to restore the line:—

ἐν δέ τε οἱ ΚΕΦΑΛΗ εὐφραγέος Ὀρίωνος.

Hipparchos, as Delambre observes, 'convient ensuite que la ceinture d'Orion est dans

l'équateur, sans dire quelle étoile de la ceinture.' But this is feeble, for there can be no doubt that the famous *Three* (as the Chinese call them), the *Three Kings*, the *Joined Three* (Jugulae), were the *Belt* stars.

IV. *The Water-snake* (vide Fig. xli; for detailed notice of this constellation, and of the *Bowl*, and *Crow*, vide *E. Sec. vii*):—

καμπή τ' αἰθομένης Ὑδρῆς.

The stars shown on the Map are (1) π, ὁ ἐπ' ἄκρας τῆς οὐράς. (2) γ, ὁ μετὰ τὸν Κόρακα ἐν τῷ παρούρῳ. (3) μ. (4) α, *Alphard* ('The Solitary'), otherwise *Cor Hydrae*; and (5)

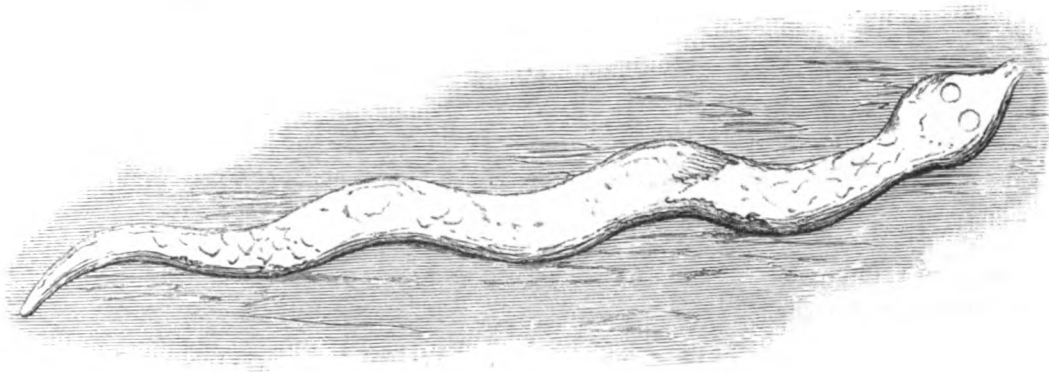


FIG. LXIII.—THE WATER SNAKE.

ζ, ε, δ, stars in the head. The *Great Serpent* is a familiar figure amongst Euphratean constellations (vide Fig. lxiii; *E. Pl. iv*; the *Stone of Merodach Baladan I*; and the *Michaux Stone*). The Inscriptions give the star *Sir* ('the Snake').

V. *The Bowl*:—

ἐνὶ οἱ καὶ ἐλαφρὸς  
Κρητήρ.

The stars shown on the Map are (1) α, ὁ ἐν τῇ βάσει τοῦ Κρατήρος κοινὸς τοῦ Ὑδρου, and (2) γ, δ, and ζ.

VI. *The Crow*:—

ἐν δὲ Κόραξ.

The stars shown on the Map are (1) β, ὁ ἐπ' ἄκρου τοῦ ποδὸς κοινὸς τοῦ Ὑδρου, and (2) γ, δ, and ε. The Equator passes right through the middle of the constellation.

VII. *The Claws* (vide Figs. vii. liv. lxvii):—

ἐνὶ δ' ἀστέρες οἱ μῖλα πολλοὶ  
Χηλάων.

The stars shown on the Map are (1) α, *Zuben el Genubi* (*Janib*, 'the Southern Claw'); (2) β, *Zuben el Chamali* ('the Northern Claw'); γ, ὁ ἐν μέσῃ τῇ βορείῳ χηλῇ. (4) ζ, and (5)

20 and 51, which in the Catalogue of Ptolemy are ἀμόρφωτοι. β *Scorpionis*, which borders on the constellation, is also shown. A few faint stars in the *Chelai* just touched the Equator, as described. (For notice of Euphratean representations of the *Claws* and

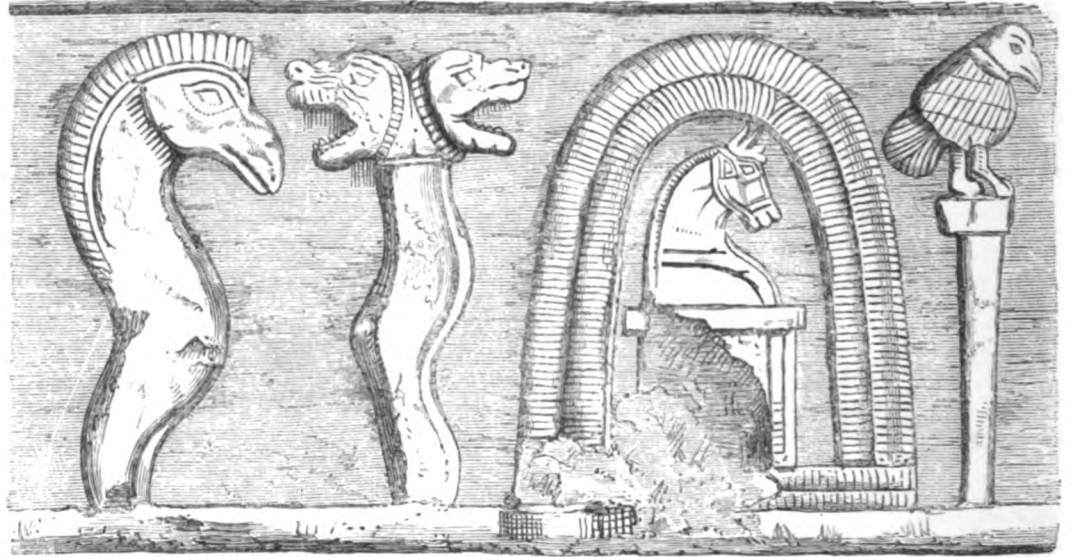


FIG. LXIV.—HEADS OF SERPENTS.

FIG. LXV.—THE HORSE.

FIG. LXVI.—THE CROW.

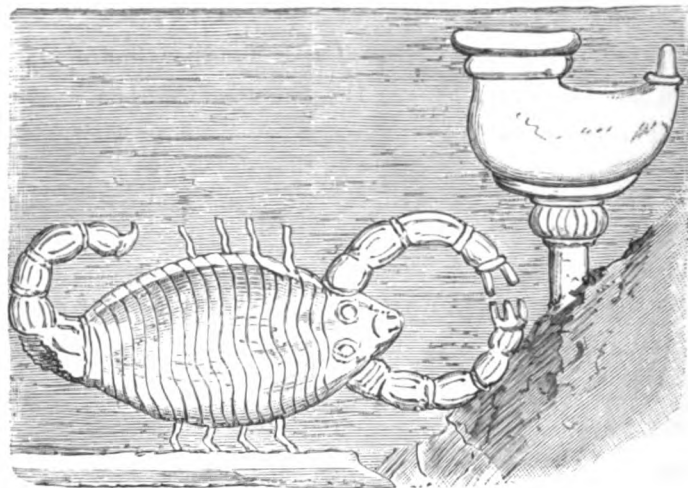


FIG. LXVII.—THE CLAWS.

the *Scorpion*, vide *L.K.O.* 82-3; and for further notice of this constellation, subsequently known as *Libra*, the *Balance*, vide *sup.* p. 65, note 1).

VIII. *The Snake-holder* (vide Fig. vi):—

ἐν τῷ δ' Ὀφιοῦχα γούνα φορεῖται.

The stars shown on the Map are (1)  $\alpha$ , *Ras-alhague* (i.e. *Ras-al-hawwa*, 'The-Head-of-the-Serpent-charmer'), ὁ ἐπὶ τῆς κεφαλῆς. (2)  $\beta$ , *Chelb* or *Cheleb* (i.e. *Kalb*, 'the Heart'), otherwise *Celabrai* ('The-Heart-of-the-Shepherd'), described by Ptolemy as being in 'the right shoulder'; (3)  $\delta$ , *Jed* (i.e. *Yad*, 'the Hand'), ἐν τῷ ἀριστερῷ ἀκροχείρῳ. (4)  $\epsilon$ , very near the last named star; (5)  $\zeta$ , ὁ ἐν τῷ ἀριστερῷ γόνατι. (6)  $\eta$ , ὁ ἐπὶ τοῦ δεξιῶν γόνατος. It will be observed that this star almost touches the Equator, and affords an excellent instance of the correctness of the description. (7)  $\theta$ , ὁ ἐπὶ τῆς δεξιᾶς κνήμης. (8)  $\kappa$ , a star in the right shoulder; and (9)  $\lambda$ , *Marfik* ('the Elbow'), ὁ ἐπὶ τοῦ δεξιῶν ἀγκῶνος.

A constellation like 'Ophiuchus huge' affords a good illustration of how the pictorial delineation of an asterism took place. No one from a survey of its stars would regard them as naturally representing a serpent-holder more than a hundred other objects or combinations. But when the previous idea of a contest between a hero and a monstrous serpent or dragon was applied to the stellar groups, then certain stars seemed to adapt themselves more suitably than others to its heavenly pictorial delineation; and it became easy to combine in idea a line of stars as forming the snake, whilst others lying adjacent were perforce arbitrarily grouped in a human figure. The *Snake-holder* and the *Kneeler*, who are placed head to head, the star *Ras-algethi* (i.e. *Ras-al-jatha*, 'Head-of-the-Kneeler'), a *Herculis*, being very near *Ras-alhague* (vide *sup.*), represent perhaps the same great personage and certainly the same contest against the monster; and it is curious that on the cylinders instances occur, in symbolical representations, of two human figures in a similar position (vide Lajard, *Culte de Mithra*, Pl. xxvii, Fig. 5; *L.K.O.* 80).

Serpent-holding divinities are frequently found in religious mythology; but the following instances are of interest in the present connexion:—

1. Euphratean Cylinder. Seated personage holding aloft in right hand what is apparently a large serpent (Lajard, *Culte de Mithra*, Pl. xii, Fig. 18).

2. Euphratean Cylinder. Symbolical scene; amongst other things represented is a personage standing and holding a large snake; behind him a Bull, crouching down with bent forelegs (vide *sup.* II. *The Bull*); below the Bull two male figures holding hands (*Gemini* ?); on a line with these several animals, apparently Lions (*Ibid.* Pl. lviii, Fig. 6).

3. 'Cône ovoïde d'agate blonde.' Janiform personage holding a large serpent in each hand; in the field, 3 stars, the moon, etc. Possibly Gnostic (*Ibid.* Pl. i, Fig. 1).

4. Fig. xxxi (*sup.* p. 39).

IX. *The Snake*.—This is not a separate constellation in the scheme of Aratos (vide *sup.* p. 8). The star shown on the Map is  $\eta$ , a star in the tail. I annex copies of two heads of serpents from Euphratean Stones, which the reader can compare with the head of Ophis, the *Snake*, the only divided constellation, as usually portrayed. I am far from asserting that when we find a figure on a Euphratean Stone and a similar figure forms an ancient constellation, it must be assumed that the two are necessarily identical. I merely call attention to numerous and remarkable similarities.

X. *The Eagle* (vide Fig. xxviii):—

οὐ μὴν Αἰητοῦ ἀπομείρεται.

The implication here is that this constellation almost touches the Equator, and, as usual, the description is absolutely correct. The stars shown on the Map are (1) *a*, *Altair* (*i.e.* El-tair, 'the Bird'), the star which was the nucleus of the constellation; (2) *β*, *Alshain* (*i.e.* *Al Schahin*, 'the Falcon'); (3) *γ*, *Tarazed* ('The Robbing-one;'); (4) *δ*, *θ*, and *λ*. These stars, even in Ptolemy's list, belong to *Antinoös* and not to the *Eagle*, thus illustrating the correctness of the descriptions of Aratos; (5) *ζ*, ὁ ὑπὸ τὴν οὐρὰν τοῦ Ἀετοῦ, and (6) *ε* and *μ*. The *Eagle* appears amongst Euphratean constellations (vide *E.* 58).

XI. *The Horse* (vide Figs. xvi. lxv):—

ἡ δὲ κατ' αὐτὸν

Ἰππεὶν κεφαλὴν καὶ ὑπαίχενον εἰλίσσονται.

The stars shown on the Map are (1) *a*, *Markab* ('The Saddle'); (2) *β*, *Scheat*, *Seat*, or *Skat* ('the Leg,' cf. Heb. שֵׁט. Ideler follows the view of Scaliger, 'von Säid, lacertus herleiten'); (3) *γ*, *Algenib* (*i.e.* *El-dschenáh*, 'the Wing'); (4) *ε*, *Enif* (*i.e.* *Emf*, or *Anf*, 'the Nose'), ὁ ἐν τῷ ῥύγχει. (5) *ζ*, a star in the throat; (6) *η*, ἐν τῷ δεξιῷ γόνατι. (7) *ι*, ὁ ἐπὶ τοῦ ἀριστεροῦ γόνατος. And (8) *θ*, a star in the head. The adjoining star *a Andromedae*, *Alpheratz* (*i.e.* *Al Feras*, 'the Horse'), is, according to Aratos, common (ξυνὸς ἀστήρ, V. 206) to both constellations.

The creature described by Aratos (Vs. 205–15) is a winged demi-horse, such as is exactly shown on coins of Lampsakos and Skepsis (vide Lajard, *Culte de Vénus*, Pl. xxiv. Fig. 18), where the wings show Phoiniko-Euphratean treatment; and the Winged-horse also appears on a Euphratean gem (Ibid. *Culte de Mithra*, Pl. xlv. Fig. 3a); in the field, a bull's head, a crescent, and 3 stars.

I append a representation of part of a Horse from a Euphratean Boundary-stone. It is placed on an altar and apparently in a sort of shrine, and in a row with other creatures previously represented (The *Crow*, Fig. lxvi, and a *Serpent-head*, Fig. lxiv). It has been said that the position of the Horse, *i.e.* on his back with respect to the Equator and Ecliptic, is due to the precession of the equinoxes; but Aratos describes him as being urged over the head of *Andromedé*, which necessitates a position similar to that in which he is now portrayed. Ovid (*Fasti*, iii. 449–58) gives the Pégasos-legend:—

'Iamque, ubi caeruleum variabunt sidera coelum,  
 suspice: Gorgonei colla videbis equi.  
 Creditur hic caesae gravida cervice Medusae  
 sanguine respersis prosiluisse iubis.  
 Huic supra nubes et subter sidera lapso  
 coelum pro terra, pro pede penna fuit.  
 Iamque indignanti nova frena receperat ore,  
 quum levis Aonias ungula fodit aquas.  
 Nunc fruitur coelo, quod pennis ante petebat:  
 et nitidus stellis quinque decemque micat.'

Ptolemy gives him 20 stars. As to Medousa, the Gorgô, from whom the 'Gorgonean Horse' springs, vide *U. Sec. vii.*

Thus the whole of the figures of the equatorial constellations of Aratos, *Ram, Bull, Orión, Water-snake, Bowl, Crow, Claws, Snake-holder, Snake, Horse,* and also the *Eagle,* appear in Euphratean art and mythology.

With respect to the date of the Star-map (B.C. 2084) the great Babylonian astronomico-astrological work in 72 books, called 'the Illumination of Bel,' which Bêrôso translated into Greek, was compiled under the auspices of Sargon I., who reigned cir. B.C. 2000; and Syncellus places Bêlos, who, he says, 'first reigned over the Assyrians,' and of whom Pliny says, 'Inventor hic fuit sideralis scientiæ' (*Hist. Nat. vi. 36*), B.C. 2286.

## IV.

## ON THE CHARACTER OF EARLY CONSTELLATION-NAMES, AND THE LEGENDS OF THE PHAINOMENA.

HERR GEORG KNAACK, in a recent review in the *Berliner Philologische Wochenschrift* of my monograph *Eridanus, River and Constellation*, states broadly that my 'line of argument rests on a wrong principle,' and that I have 'a sovereign contempt for every historical explanation.' The critic, whose tone throughout is that of Zoilos, and whose wrath appears to have been kindled by seeing some notices of my work which spoke of it as 'epoch-making' (*epochemachend*), leaves astronomy to astronomers, matters Euphratean to Assyriologists, and mythology to mythologists; and being thus unwilling or unable to deal with four-fifths of the book, concentrates himself upon a single point—certainly a very important one in its way—namely, whether the names of constellations were not originally rather general than special appellations. He believes that these names were at first wider, and afterwards became narrowed through a special mythic story being tacked on to a particular constellation by the arbitrary fancy of some poet. As I reject any such idea, I am, according to him, working 'on a wrong principle;' and the reader must judge between us. He attempts to support this mysterious law by four examples:—

The general terms	{	<i>Engonasin</i> <i>Ornis</i> <i>Kentauros</i> <i>Potamos</i>	are afterwards specialized as	{	<i>Hêrâklês</i> <i>Kyknos</i> <i>Cheirôn</i> <i>Éridanos</i>
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What proof does he give, or can anyone give that *Kneeler, Bird* and *Centaur* were (in any language) the *original* names of these constellations? None. Then, regarding the question from an abstract point of view, Is it more probable that in the first instance people



called a constellation which was in some way associated with a beast or a bird, by a more general or a more special appellation? I reply, Undoubtedly by a more special appellation. If a man thought,—This constellation reminds me of an animal or of a bird, he would be almost certain to go on in his thoughts to some special animal or bird. And so he did; and constellations reminded him not of an *Animal*, but of a *Bear*, *Lion*, *Ram*, *Bull*, *Goat*, *Dog*, *Hare*; not of a *Bird* (*vide inf.* as to *Ornis*), but of an *Eagle* or a *Crow*. So was Euphratean man reminded of a *Lion*, *Dog*, *Bear*, *Goat*, *Eagle*, or of ‘the Bird Urakhga’ (not ‘the Bird’), with which I have compared *Ornis* (*E.* 60).

But, let the name of a constellation be borrowed and brought far from the place where it was first known and used, introduced to foreign nations and translated into other tongues, and then, naturally, nay, almost necessarily, great part or the whole of its pristine history is lost; the special original hero is forgotten, but the fancied shape of the constellation preserves a name—the *Kneeler*. Had the name of the brave Horatius faded utterly, there was his ‘molten image . . . halting upon one knee.’ So the special bird, whether Urakhga or any other, fades from memory, and the asterism remains the *Bird* simply. So, again, I have given strong reasons for believing that the original *Kentauros* was the Euphratean Heabani (*E.* 25); and Cheirôn (‘the Skilful’) is in origin anything but a special appellation. Herr Knaack who, as noticed, leaves nearly all the main lines of the question untouched, is himself guilty of contempt for a ‘historical explanation,’ inasmuch as he evidently does not remember the following important remark of Hyginus respecting one of his alleged instances;—‘*Olor*. Hunc Graeci *Cygnum* appellant: quem complures propter ignotam historiam illis, communi genere avium *Ornin* nominaverunt, de quo memoriae prodita est causa’ (*Poet. Astron.* ii. 9). The constellation was called *Ornis* simply, not because that was its original name, but for the exactly opposite reason—because its original name had been forgotten. Precisely similar was the case of Engonasin (*vide sup.* p. 18). His history had been lost for centuries (*vide sup.* p. 59).

Lastly, we come to the asterism of the *River*. This name Herr Knaack imagines to be a general one, a mistake such as is almost certain to be made by anyone who plunges into the subject after insufficient study. He next supposes that in the short interval between the time of Eudoxos and the writing of the *Phainomena* by Aratos, some unknown poet first applied the name Êridanos to ‘the up-to-that-time-nameless heaven-river.’ It is curious that he does not boldly assert that the singularly uninventive Aratos himself first identified the Êridanos with the *Potamos*; but he quotes approvingly the ridiculous dictum of Hêrodotos that some poet invented the name Êridanos (*vide E.* 35. Hêrodotos held that ‘one of the earlier poets invented the name’ Ôkeanos; he might have added quite as reasonably that another of them invented the names ‘cat’ and ‘dog’). Now anyone who understands the principles of evidence, and remembers that some three-fourths of early Hellenic literature is lost, will see at once the worthlessness of the *argumentum è taciturnitate* in such a case. There is nothing in the passage in the *Phainomena* (*sup.* p. 42), or in the Schol. upon it, to suggest, still less to show that the identification was

a novelty. We do not know that Eudoxos himself had not called the *River* Êridanos. True he calls it *Potamos* (Herr Knaack regards this fact as being unknown to me, and makes five blunders in quoting a line and a half from *E.*), but so does Aratos, and so does Ptolemy; and therefore, according to Herr Knaack, we should be justified in regarding these authors as ignorant of the identification, which is absurd.

Herr Knaack appears to admit my Euphratean theory of the *River*, and the proposed etymology of Êridanos; and I have also shown the connexion of the Phaëthôn-myth with the Tammuz-myth, and that Êridanos ('the Strong-river') = Euphrates. Now it will be seen at once that *Potamos* is (1) not a general term; but (2) a translation of Êridanos, and (3) the general western name of the Euphrates, which is, *par excellence*, the River—Nahar—Potamos—Amnis—Fluvius. (The Euphrates appears simply as 'the River,' the 'Potamos' of the LXX, in *Gen.* xxxi. 21; *Jos.* xxiv. 2; *1 Kings*, iv. 21; *Ezra*, v. 3; *Ps.* lxxii. 8; *Is.* viii. 7, etc.).

Eudoxos generally refers to the *River* not simply as *Potamos*, but as the *ὁ ἀπὸ τοῦ Ὀρίωνος ποταμὸς*. He is speaking astronomically and without any mythological intention, and merely means that the *River* began, as he says, *ἀπὸ τοῦ ἀριστεροῦ ποδὸς τοῦ Ὀρίωνος*. But how came these two constellations to be together? This question I may perhaps hereafter consider, if I am able to deal with the virgin study of the causes of the localization of the constellations in their respective portions of the heavens. Herr Knaack would doubtless reply that 'some poet' chose to place them where they are; and the world has become so accustomed to explanations which explain nothing, that generally it passively accepts them as if they were veritable revelations. But here, as almost everywhere, we shall find that some reason, whether a strong or a weak one, and not invention or chance, determined the matter; and in this particular case shall be able to compare with each other the River of Phaëthôn, the River of Oriôn, and 'the River of Tammuz,' which latter is mentioned in a Euphratean Tablet. (For the further study of the Tammuz-Oriôn myth, vide Lenormant, *Il Mito di Adone-Tammuz nei Documenti cuneiformi*).

On the general question of the *River*, I must refer the reader to my monograph *Eridanus* for further detail and illustration; but in this, as in the former instances, the moment Herr Knaack's theory of original general names for constellations is analyzed it collapses.

This seems a suitable place to add an illustration of the danger of hastily assuming either the late origin, or the late appearance in Hellas, of this or that constellation-name; and an article by K. O. Müller (*Orion*. Appended to Leitch's Translation of Müller's *Scientific Mythology*), which shows conspicuously the strength and the weakness of the great scholar, will supply an appropriate instance. With the hopeless difficulties and dilemmas to which Müller is reduced from not seeing that the stellar Oriôn is a reduplication of a prior solar Oriôn (Vide *G. D. M.* ii. 270 *et seq.*; *E.* Secs. iv. v. Witness his explanation of the tales of the love of the Dawn-Eôs and the hate of the Moon-Artemis for Oriôn), I am not here concerned; nor with the constellation *Oriôn* itself,

since everyone will at once remember its Hellenic antiquity. Indeed, on account of the Homeric and Hesiodic references, many people speak as if the *Hyades*, *Pleiades*, *Arktos*, *Boötes*, and *Orión* were necessarily the only constellations known to the early Hellenes. The statement of Müller to which I wish to refer, is one respecting the Family-group (*Kêpheus*, *Kassiopeia*, *Andromedé*, and *Perseus*); he says,—‘These constellations were not known to Greek poetry before the time of Alexander, and no trace of them can be pointed out until they make their appearance on the sphere of Eudoxus described by Aratus;’ and he very acutely adds, ‘To me it seems probable that by these names . . . it was meant to translate Chaldean appellations.’ As Eudoxos died cir. B.C. 350, the names of these four grouped constellations with non-Hellenic appellations (vide *U.* 54–5) were not first brought from the East by anyone in the train of Alexander; nor did Eudoxos originate them any more than Homer or Hesiod originated *Orión*. If it were a fact that they ‘were not known to Greek poetry before the time of Alexander,’ then, inasmuch as most of this Greek poetry is lost, we could never know that this fact was true. But is this a fact, and do they suddenly appear on the sphere of Eudoxos without leaving any prior trace? Certainly not. Sophoklês and Euripidês each wrote a play called *Andromeda*, and the author of the *Katasterismoi* states (cap. xvi), that Sophoklês related how Kassiopeia had boasted that she was more beautiful than the Nêreids (Vide *sup.* p. 62); and afterwards (cap. xxxvi), when speaking about the *Sea-monster* which, he says, Poseidôn sent to Kêpheus on account of the boast of Kassiopeia, adds: ‘But Perseus slew it, and on this account εἰς τὰ ἄστρα ἐτέθη, ὑπόμνημα τῆς πράξεως αὐτοῦ. Ἱστορεῖ δὲ ταῦτα Σοφοκλῆς ἐν τῇ Ἀνδρομέδᾳ.’ So Hyginus (*Poet. Astron.* ii. 10) says that concerning Kassiopeia, ‘Euripides et Sophocles et alii complures dixerunt ut gloriata sit se forma Nereidas prae-stare: pro quo facto inter sidera sedens in siliquastro constituta est: quae propter impietatem vertente se mundo resupinato capite ferri videtur’ (Vide *sup.* p. 62). The only fair construction of the above passages is that Sophoklês and Euripidês knew of the constellational *Sea-monster* and *Kassiopeia*. So of *Andromeda*, Hyginus (*Poet. Astron.* ii. 11) says that ‘Minervae beneficio inter astra collocata propter Persei virtutem. . . . sed de hac Euripides hoc eodem nomine fabulam commodissime scribit.’ Of course if Euripidês knew of the constellational *Kassiopeia*, he was almost certain to know of the constellational *Andromedé*, and so it is evident that he did; and it seems to me that it is the constellational *Andromeda* to which Sapphô (*Fragment* lviii, ap. Bergk) refers when she says:—

Ἐχει μὲν Ἀνδρομέδα κάλαν ἀμοίβαν.

Such a subject was not foreign to her poetry, for in another place (*Fragment* lii.) she speaks of *σελάμνα καὶ Πληγάδες*, and the ‘recompense’ which *Andromeda* received was her permanent translation to the skies. That Kêpheus and Perseus were known as constellations to Hellenic writers of the fifth century B.C., follows almost as of course.

Scattered here and there through the fragments of early Hellenic literature are references to stars and constellations which forcibly suggest that many other references to other stars and constellations once existed but have been long since lost. No strictly

astronomical versifier appeared before Aratos, and no one else would be likely to give a complete, or even a full, list. A poem which did so must necessarily be as unpoetical as most of the *Phainomena* itself. So, in the splendid description of the Shield of Achilles, we read of sun and moon and

*τὰ τεύρεα πάντα τὰ τ' οὐρανὸς ἐστεφάνωται.*

*Pleiades* and *Hyades*, and *Orión*, brightest of them all, and the *Bear*, and, in effect, all the rest of them whatever their names might be. For the string of names, and probably also for the constellations as such, many a poet cared as little as *Anakreôn* when he sings of his drinking-cup:—

ποίη δέ μοι κατ' αὐτοῦ  
μήτ' ἄστρα μήτ' Ἀμαξάν,  
μὴ στυγνὸν Ὠρίωνα  
τί Πλειάδων μέλει μοι;  
τί γὰρ καλοῦ Βούτου;

(*Fragment iii*, ap. Bergk). But even he observed the stellar sky at times, and elsewhere sings:—

Μεσονυκτίοις ποτ' ὄραις,  
στρέφεται ὄτ' Ἀρκτος ἤδη  
κατὰ χεῖρα τὴν Βούτου

(*Fragment xxxi*). And if it be remarked that endless mention is made of *Pleiades* and *Hyades*, and *Orión*, and the *Bear*, and *Boötes*, let it be remembered that if now we ask anyone on a starry night to point out constellations, he is almost sure to begin with the *Bear*, and perhaps will recognise the W of *Kassiopeia* or the *Belt* of *Orion*, if visible, and then probably stops short, although many other constellations are visible and are known to the expert; and, again, how few stars and constellations are mentioned by the modern poet. But the Homeric references to *Arktos* and *Boötes* prove that the constellation-figure in each case was clearly present to the mind, and had been considered in different positions; and it is vastly improbable that a similar process had not taken place with reference to other asterisms. Again, it may be noticed that any special archaic statement and especially a Homeric statement, is carefully copied and re-copied by numbers of more or less learned, respectful, and unoriginal writers. The Homeric ὄψ' ἔδύοντα Βούτην (*Od.* v. 272) is the cause of that constellation being called 'tardy' and the like epithets to the latest times.

Lastly, the procedure of Aratos, writing in continental Hellas cir. B.C. 270, must not be confounded with the practice of the mythological astronomers of Alexandria in later times. These latter were in the habit of tacking mythic legends to constellations, either with or without much reason in any particular instance; and had, e.g., the *Potamos* been first called *Éridanos* in such a work as the *Katasterismoi*, doubts as to how far the arbitrary element entered into the matter might have been fairly entertained. But in his

legends and stories, as in the astronomical part of the poem, Aratos is a repeater; and in no single instance can he be shown to have been an inventor. Thus *e.g.* :—

I. The story of the nurture of the infant Zeus in Krêtê (V. 31 *et seq.*) was very archaic (Vide Hesiod, *Theogonia*, 477 *et seq.*); the *Lesser Bear*, by which Phoenicians were wont to steer, was first so called by Thalês, who was of Phoenician extraction; and the story that Zeus was nourished by the Bears ('Bright-ones') was widely spread, and is recorded as a Naxian tradition by Agaosthenês. Similarly, the Hesiodic phrase *Αἰγάριον ἐν ὄρει* (*Theogonia*, 484) appears to refer to the nurture of Zeus by the Goat Amaltheia (Cf. *Phainomena*, 163).

II. The story of Ariadnê and the constellational *Crown* (V. 71), Aratos probably took from Pherekydês the logographer, who wrote in the first half of the fifth century B.C., (Vide Pherekydês, *Fragment cvi*).

III. The story of the races of men, each worse than the last, and the general superintendence of Dikê (V. 100 *et seq.*) is Hesiodic. Cf. *Erga*, 199–200 :—

ἀθανάτων μετὰ φύλον ἴτον προλιπόντ' ἀνθρώπους  
Αἰδῶς καὶ Νέμεσις.

It is clear that the signs of the Zodiac were known to Kleostratos and Oinopidês (*vide E.* 4), both of whom lived prior to B.C. 450; so that there is nothing to prevent the *Parthenos* having been identified with Dikê at a comparatively early period, and Aratos expressly refers to the identification as having come down to his time.

IV. The story of Kêpheus and his family (V. 179 *et seq.*) I have already referred to (*sup.* p. 90).

V. The story of the sacred Horse, Pêgasos (V. 205 *et seq.*) This had been treated of by Hesiod, Pindar, Euripidês and others; and affords an excellent instance of the process by which an originally solar personification becomes stellar and constellational. Thus :—

1. The solar Steed gallops across heaven, rejoicing like the Oriôn-giant to run his race; he gets his name from the Ocean-spring whence he rises :—

τῷ μὲν ἐπώνυμον ἦν, ὅτ' ἄρ' Ὀκεανοῦ περὶ πηγὰς  
γένθ'.

As he rises he quits earth for heaven :—

χῶ μὲν ἀποπτάμενος, προλιπὼν χθόνα μητέρα μῆλων,  
ἵκετ' ἐς ἀθανάτους.

Indra-like he bears thunder and lightning :—

Ζηγὸς δ' ἐν δόμασι ναίει  
βροντήν τε στεροπήν τε φέρων Δί. (Hesiod, *Theogonia*, 282–6).

2. The solar Horse is next, naturally enough, provided with a solar rider, Bellerophôn, the Monster-slayer (Vide Pindar, *Olymp.* xiii. 120–2), who mounts by the aid of the Dawn-power Athênê (Cf. Pausanias, II. iv. 1).

3. Hence arises a distinction in destiny between solar Rider and solar Horse ; the former would fain have remained aloft, but this is impossible ; and, like other solar heroes, he must have a downfall. His horse must needs throw him :—

πτερόεις ἔρριψε Πάγασος  
 δεσπότην ἐθέλοντ' ἐς οὐρανοῦ σταθμοῦς  
 ἐλθεῖν μεθ' ὀμάγουρον Βελλεροφόνταν  
 Ζηγός. (Pindar, *Isthmionikai*, vii. 61-4).

And what is the 'assembly' (ὀμάγουρον) which the Sun would fain join ? As Aischylos tells us it is the ἄστρον νυκτέρων ὀμάγουρον (*Agamemnon*, 4) ; and this host Pégasos joins, although Bellerophôn cannot. Euhemeristically regarded, the tale becomes one of 'vaulting ambition.'

VI. The story of Oriôn and the Scorpion (V. 637 *et seq.* ; vide Pherekydês, *Fragment* iv., etc.)

## V.

ATHÉNAIÉ (V. 530.)

From the vault of the sky, from the deeps on high  
 I have sprung in harness dight ;<sup>1</sup>  
 A strength and a will both swift and still  
 As the comets and stars of the night.  
 A luminous track through the darkness black,<sup>2</sup>  
 I illumine the human mind ;  
 As the starry eyes, serene and wise,  
 I steadily shine on the blind ;  
 The spirit of wisdom, the spirit of truth  
 In me may a mortal find.

When the drowsy Night has been put to flight  
 By the sound of the solar car,  
 And Day's horses' feet are climbing fleet  
 Through the Underworld afar,

<sup>1</sup> Στησίχορος ἔφη σὺν ὄπλοις ἐκ τῆς τοῦ Διὸς κεφαλῆς ἀναπηδήσαι τὴν Ἀθηνᾶν (Schol. Apoll. Rhod. iv. 1310).

<sup>2</sup> 'Her bright ray has been perceived ; it extends and pierces the dark immensity' (*krishnám ābhvam*, *Rig-Veda*, I. xcii. 5).

My gleaming eyes<sup>1</sup> on the morning skies  
 Are seen by the Earth below ;  
 And I smile,<sup>2</sup> as I flee through the heavenly sea  
 Where the clouds sail to and fro ;  
 The spirit of freedom, the spirit of light,<sup>3</sup>—  
 By me may a mortal know.

Though free as the wind I loose<sup>4</sup> and I bind,  
 As my Father and I think fit ;  
 From our heights we scan the designs of man,  
 And measure the depths of his wit.  
 For the cloud I can stay, or 'mid rush of the fray,  
 Can the galloping steed control ;  
 On Achilles' hair laid I hand,<sup>5</sup> and, aware,  
 He was still to the depths of his soul ;  
 The spirit of patience, the spirit of calm,  
 Solemn silence from pole to pole.

At morn I am heard in the song of the bird,<sup>6</sup>  
 At noon in the trumpet's tone ;<sup>7</sup>  
 And the hum of the bee, and the roll of the sea,  
 And the echoes are all mine own :<sup>8</sup>  
 Calm speech is mine, and the song divine,<sup>9</sup>  
 And the air of my Father's heaven ;  
 I am queen of the sky beneath, and on high  
 As far as the planets seven ;  
 The spirit of freshness, the spirit of youth  
 I give, for to me they were given.

I am old, I am young,<sup>10</sup> I can sing, I have sung,  
 I can wander o'er earth and o'er sea ;

<sup>1</sup> Athéné Glaukopis. Τὸ δὲ ἄγαλμα τῆς Ἀθηνᾶς  
 γλαυκοῦς ἔχον τοὺς ὀφθαλμοὺς (Pausanias, I. xiv. 6).

<sup>2</sup> 'Ushas [Eós] radiant smiles' (*Rig-Veda*, I.  
 xcii. 6).

<sup>3</sup> 'This light has arrived, the greatest of all lights'  
 (*Ibid.* I. cxiii. 1).

<sup>4</sup> 'Setting in motion all living things' (*Ibid.* 4).

<sup>5</sup> *Il.* i. 197.

<sup>6</sup> 'The birds fly up from their nests' (*Rig-Veda*, I.  
 cxxiv. 12).

<sup>7</sup> Athéné (Dor. Athana = Vedic Ahana, 'the  
 Bright') was said to have invented the trumpet.

<sup>8</sup> Cf. *Il.* xviii. 217:—

ἔνθα στάς ἦυσ', ἀπέρεθε δὲ Παλλὰς Ἀθήνη  
 φθέγξαι'.

<sup>9</sup> 'Ushas awaking cheerful hymns' (*Rig-Veda*, I.  
 xcii. 14).

<sup>10</sup> 'Born again and again, though ancient' (*Ibid.*  
 10).

I have taught, I shall teach, and no language or speech  
 But will breathe of my echoes and me ;  
 The Olympian height, and the depths of the night,  
 And whatever has been, or shall be,  
 I have known from of old ; and my bards have foretold  
 Heaven's working, and heaven's decree ;  
 The spirit of knowledge, the spirit of peace,<sup>1</sup>  
 Both now and eternally.

<sup>1</sup> Cf. *Od.* xxiv. 528 *et seq.*



FIG. LXVIII.—THE ANCIENT CONSTELLATIONS.





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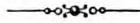
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