THE

PHENOMENA AND DIOSEMEIA

OF

ARATUS.
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THE

PHENOMENA AND DIOSEMEIA

OF

ARATUS,

TRANSLATED INTO ENGLISH VERSE, WITH NOTES,

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Page 40, line 200, for Cythia read Cynthia.
THE

LIFE OF ARATUS.

WHEN Cilicia, in the days of Cicero*, boasted of being the birth-place of the Poet Aratus, there was reserved for her a far higher honour, the giving birth to one of the noblest of mankind, if true nobility consist in the power of benefiting the human race, and in the exercise of that power to the greatest extent by the most unexampled self-denial. Soli, the native city of Aratus, was not far distant from Tarsus, the birth-place of St Paul; and the fame of the heathen Poet has been considerably enhanced by a passage from his writings having been quoted by his countryman, the christian Apostle. One biographer indeed states that Aratus was a native of Tarsus, and he is occasionally called Tarsensis; but the more probable opinion is, that he was born at Soli, and he is commonly called Solensis. The date of his birth is about 260 years before the Christian æra. The names of his parents were Athedonorus and Letophila, they were persons of some conse-

* Cicero was Proconsul of Cilicia A. u. c. 702. In his youth he had translated the poems of Aratus into Latin Hexameters.
quence and rank in their native city. His father had distinguished himself as a warrior. The Greek scholar speaks of him as ἐπίφανος καὶ ἐν πολέμῳ ἀριστεύσαντος. One of his brothers was known as a classical scholar, and broke a lance in defence of Homer with the unhappily famed critic Zoilus*. Aratus was brought up by his parents to the profession of a physician, and consequently enjoyed the advantages of a liberal education, the foundation of which might probably have been laid at Tarsus, then rising into renown and eminence as a school of philosophy, and shortly rivaling those of Alexandria and Athens; and hence he might obtain the title of Tarsensis. It was, however, at Athens, the celebrated seat of literature and science, that the Poet completed his education. Here he became the pupil of Menedemus, and of Perseus the Stoic. In the latter the young student found not only a tutor, but a patron and friend. Perseus was in high estimation with Antigonus, surnamed Gonatas, at that time king of Macedonia†; and upon

* "Hoc uno facinorenobilitatus, quod Homerum ausus sit reprehendere." (Hofm.)

† Antigonus II. or Gonatas, was the great grandson of Antigonus, Alexander's general. Antigonus intrusted to Perseus the defence of the citadel at Corinth, from which the philosopher fled when it was stormed by Aratus of Sicyon. Plutarch gives the following anecdote. Some time after, when Perseus was amusing himself with disputations in philosophy, and some one advanced this position: "None but a philosopher is fit to be a general:" "It is true," he said, "and indeed, this maxim of Zeno once pleased me more than all the rest, but I changed my opinion, when I was better taught by the young Sicyonian."
receiving a summons from his royal patron to repair to his court in Macedonia upon the celebration of his nuptials with Phila, a daughter of Seleucus, he took with him his pupil, and introduced him to Antigonus, who was proud of being considered the patron of learned and scientific men. The young Poet no doubt employed his muse in celebration of this festive event, having already distinguished himself by an ode to Pan. Either by his poetical talents, by his skill in medicine, or by these united accomplishments, he so won the king's favor as to become an inmate of his palace, and he continued as such the remainder of his life: equally qualified, if we may judge from the titles of the works he published, and from those which have reached us, to fill the situation of court physician, or poet laureate.

At the period when Aratus found himself thus fortunately established in the court of Antigonus much attention was given to the study of astronomy. About a century and a half before, Meton, the celebrated mathematician of Athens, had discovered the lunar cycle of nineteen years, and published it in his book entitled Enneadecaterides. At a later period Eudoxus had brought from Egypt an improved celestial sphere, and had introduced at Cyzicus and Athens a system of astronomy and philosophy derived from the priests of that country. Dionysius, the astronomer of Alexandria, had lately calculated and determined the exact length of the solar year to be $365^{1/4}.5^{1/6}.49^{1/60}$. The expedition of Alexander to Persia, Egypt, and India, had opened fresh sources.
of information to the Greeks, and had given them a taste for this science. Plutarch records as an example of the ostentation of Demetrius, the son of Antigonus I., that there was a robe a long time in weaving for him of most sumptuous magnificence: the figure of the world and all the heavenly bodies were to be represented upon it. Now this piece of tapestry was probably not intended for a robe, but for a useful and scientific ornament of his palace, and manifests a taste superior to mere shew and ostentation. Ptolemy, another of Alexander's generals, became as renowned for his patronage of learning and science as for his skill and success in war, and this taste descended to his successors.

Antigonus Gonatas was himself a proficient in astronomy, and an admirer of the works of Eudoxus. Putting that philosopher's description of the celestial sphere into the hands of Aratus, he commissioned him to render it into verse in imitation of Hesiod's "Works and Days." The task, which Aratus undertook, was to give the astronomical description of the heavens, according to Eudoxus, and to relieve the dull monotony of a mere catalogue of constellations and stars by poetical language: in other words, to deck the stiff formal limbs of Urania in the graceful flowing robes of Calliope*. And with great skill and ingenuity he has accomplished this undertaking. He has introduced so much of the fabulous history at-

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* The king gave the poet a copy of the work of Eudoxus: ἀμα εἰπὼν, "ὡς ΕΥΔΟΞΩΤΕΡΟΝ ποιεῖς τὸν ΕΥΔΟΞΟΝ, ἐπείνας τὰ παρ' αὐτῷ κείμενα μετρεῖ."
tached to the constellations from the heathen mythology, and such vivid descriptions of the natural animals, whose figures are depicted on the celestial sphere, as to give life and animation to his verse, without overburthening it or losing sight of his main object.

In weighing the merits and defects of Aratus, the critic should take into consideration the difficulty of his undertaking. His poem has no hero, no events, no dialogue, no action, and yet he succeeded in rendering it one of the most popular works for a series of years, that ever was published. It is an undeniable fact, that for five or six centuries it held a rank in the estimation of the learned not inferior to that of the Iliad of Homer. Maximus Tyrius only speaks the opinion of his contemporaries, when he terms Aratus, Ποιητήν οὐδὲν ἄδοξότερον τοῦ Ὅμηρου; or Ovid, when he ranks him with Homer and Sophocles:

Vivet Mæonides Tenedos dum stabit et Ide,
     Dum rapidas Simois in mare volvet aquas.
Nulla Sophocleo veniet jactura cothurno:
     Cum sole et luna semper Aratus erit.

The admiration which his poems obtained is proved by the numerous scholiasts and commentators upon them. Among the Romans they were so popular, that no fewer than three translations of them were made into Latin hexameters, and by no ordinary writers. Cicero translated the Phenomena and Dioseneia. A great part of the former has come down
to us. From this specimen of the great prose writer's muse we certainly should not rank him among the first class of poets; but it must be remembered, that he produced his work while yet he was a very young man, and the Latin language had not acquired that perfection to which the writers of the Augustan age advanced it*.

The celebrated Germanicus Cæsar, son of Antonia, the niece of Augustus, amused the leisure hours of his military campaigns by translating the Phenomena. His version, in elegant Latin hexameters, gives him no humble rank among the poets of the Augustan age. He does not seem to have attempted the Diosemeia: it was either less inviting to his muse, or leisure might be wanting for the undertaking†.

At a later period, in the fourth century of the Christian æra, Festus Avienus rendered the Phenomena and Diosemeia into Latin hexameters. His version is far more diffuse than the original, and assumes the character of a poetical paraphrase of Aratus. He considerably enlarges upon the text, follows out the fables, and occasionally adds fresh

* "Conficit hanc versionem Cicero quod ipse testatur perquam adolescentulus; prodit quoque ea per se juvenilem ingenii vigorem, nec minus doctam et subactam Græci sermonis poetici scientiam, simulque studium acerrimum patrium sermonem Latinum, tum a poetis parum adhuc tractatum et excultum, ad Græci sermonis perfectionem quantum fieri posset evheendi." (Buhle.)

† "Dictio Germanici poetica, quamvis ille passim archaismum sectatus sit, longe est vividior et elegantior Ciceroniana, et prodit omnino poetam Virgillii et Horatii æqualem." (Buhle.)
LIFE OF ARATUS.

The translation of Avienus has the advantage, which neither that of Cicero or Germanicus possesses, of coming down to us un mutilated.

Among the more celebrated of the Latin poets Virgil, Ovid, and Manilius, have borrowed considerably from Aratus.

To another class of commentators and readers the poems of Aratus have been recommended by the circumstance of St Paul, when addressing the philosophers of Athens, having quoted the exordium of the Phenomena; for, although the sacred historian only gives four words as a reference to the passage, it is probable, that the Apostle quoted the following lines to prove to his learned hearers, that the doctrine of the eternity, unity, and omnipotence of the Godhead was no new invention, or confined to the Jewish nation, but the creed of the wisest of their own philosophers and poets:

Ἐκ Διὸς ἀρχώμεσθα τὸν οὐδέποτε ἄνδρες ἐώμεν Ἀρρητον. Μεσταὶ δὲ Διὸς πᾶσαι μὲν ἁγναι,
Πᾶσαι δὲ ἀνθρώπων ἁγοραὶ μεστῇ δὲ θάλασσα,
Καὶ λιμένες. Πάντη δὲ Διὸς κεχρῆμεθα πάντες.

Τοῦ γὰρ καὶ γένος ἐξεμέν, ὁ δὲ ἦπιος ἀνθρώπως
Δεξιὰ σημαίνει λαοὺς δὲ ἐπὶ ἐργὸν ἐγείρει,
Μιμησκὼν βιῶτος λέγει δὲ ὅτε βῶλος ἀρίστη
Βουσί τε καὶ μακέλης λέγει δὲ ὅτε δεξιὰ δραί
Καὶ φυτὰ γυρώσαι, καὶ σπέρματα πάντα παλέσθαι.

* “In dictione poetica non comparandus est: Avienus quidem Cicerone aut Germanico, excellit tamen inter poetas Latinos seriores puritate et elegantia sermonis.” (Buhle.)
Let us begin from Jove. Let every mortal raise
His grateful voice to tune Jove's endless praise.
Jove fills the heaven—the earth—the sea—the air:
We feel his spirit moving here and everywhere.
And we his offspring are. He ever good
Daily provides for man his daily food.
Ordains the seasons by his signs on high,
Studding with gems of light the azure canopy.
What time with plough or spade to break the soil,
That plenteous store may bless the reaper's toil,
What time to plant and prune the vine he shews,
And hangs the purple cluster on its boughs.
To Him—the First—the Last—all homage yield:
Our Father—Wonderful—our Help—our Shield.

St Paul, himself a citizen of Tarsus, and probably
instructed in the celebrated schools of his native city
in those branches of profane literature and science,
in which he excelled, would with peculiar propriety
quote to his learned audience the words of the poet
of his own country; and by so doing shew to them,
that he was not (as the Greeks reported the Christians
to be) a neglecter and despiser of those acquirements,
for which the age was celebrated, and which in the
opinion of an Athenian audience constituted the
distinguishing mark between the civilized man and the barbarian.

The example thus set by the Apostle was followed by the early fathers of the church. Eusebius* and Clemens Alexandrinus† quote this same passage; and Aratus appears to have been a favorite author with Christians as well as Heathen‡.

Cicero remarks: "Aratum hominem ignarum Astrologiae ornatissimis atque optimis versibus de ccelo et stellis scripsisse;" thus highly praising his poetical talents, but disparaging his astronomical science. Cicero's remark is thus far true: Aratus might not make the observations himself, but study and adopt the notions of Eudoxus, in the same manner as Cicero himself, who was proud of his own astronomical knowledge, obtained it from writers upon the subject. Aratus was certainly a proficient in astronomy, as far as the science had advanced in his times. It is not to be expected that in all his statements he should be minutely accurate, for he is

† Clem. Alex. Strom. Lib. v.
‡ On the revival of literature in the fifteenth century several editions of Aratus were published. In 1521, Philip Melanethon edited the Phenomena with a Latin version and preface. In 1600, Hugo Grotius published the Phenomena and Diosemeia with Cicero's translation into Latin hexameters, interpolating the lost passages. He added the versions of Germanicus and Avienus, with notes upon the whole, and a learned dissertation on the Arabic, Hebrew, Greek and Latin names of the constellations and stars. The best modern edition of Aratus is that of Professor Buhle, in 2 Vols. octavo.
not writing a scientific essay on astronomy, but a popular poetical description of the celestial sphere. Quinctilian's observation is correct, and to the point: “Materia Arati motu caret, ut in qua nulla varietas, nullus affectus, nulla persona, nulla cujusquam sit oratio. Quid potuisset in Virginis fabula expressit, in reliquis id quod voluit. Sufficit tamen operi cui se creditid parem.”

Aratus was the first to put these subjects, so interesting both to the philosopher and to the vulgar, to the scientific, and to the superficial observer, into verse. Many writers followed in his steps, none of whose productions have reached us: a convincing proof of the superior merits of our poet over his rivals and imitators. The following is the remark of Buhle upon Aratus, and is a just critique upon his works: “Insignis est utique in carminibus Arateis ars, qua formæ celestes deinceps descriptæ sunt; delectat harum descriptionum ordo simul et varietas; ornatae sunt illæ mythis non oneratae; et quod puritatem, simplicitatem, elegantiam Græci sermonis at-tinet vix reperias quem Arateo compares.”

The two works of Aratus, which have come down to us, are “the Phenomena*,” and “the Diosemeia†.”

The Phenomena may be divided into three parts. The first, ending at line 450, contains a description of the constellations: the second, from line 451 to 568,

* “Φαινόμενα. Peculiariter apud astrologos. Τὰ Φαινόμενα di-cuntur quæ apparent in celo.” (Scapula.)

† “Διοσημεία vel Διοσῆμια. Signum Jove: Prodigiosa tem-pestanas: vel simpliciter tempestas.” (Scapula.)
of the position of the most important circles on the celestial sphere. The third, from line 569, ad finem, describes the position of various other constellations on the rising of each of the signs of the Zodiac.

The Diosemeia contains prognostics of the wind and weather, derived from various sources, but chiefly from observations on the heavenly bodies. This latter subject does not allow of so much poetical embellishment as the former.

Aratus was the author of numerous other works: of a didactic poem in heroic verse, the title of which was Ἰατρικά, or Ἰατρικά Δυνάμεις.

Macrobius has preserved to us one of his epigrams. It is on Diotomus of Adramyttium, who was a schoolmaster at Gargara, a city of Troas on mount Ida:

Αἰάζω Διώτιμον, ὅς ἐν πέτραισι κάθηται
Γαργαρέων παισὺν βῆτα καὶ ἀλφα λέγων.

I wail Diotomus, who by the rocky sea
Of Gargaron is teaching children A, B, C.

Strabo quotes from another work of Aratus, called Τὰ κατὰ λεπτῶν. Speaking of Gyaros, a small island in the Grecian archipelago, he says: Aratus points out their poverty in his Τὰ κατὰ λεπτῶν:

Ω Λητοὶ σὺ μένεις μὲν συδηρεῖν Φολεγάνδρῳ
Δειλή, ἢ Γύαρον παρελεύσειν αὐτίς ὀμοίη;

Dost thou remain on Pholegandros' flinty shore,
Or seek'st thou Gyaros, as wretched and as poor?

His other works, of which no fragments remain, but the titles of which are preserved by the writers
of his life, are numerous and upon various subjects: rhetorick, grammar, medicine, and poetry. He certainly merited the title given him by one of his scholiasts, ἀρκετὰς ἑαυτῷ ἀνεμονεῖ.

Aratus is said to have ended his life in Macedonia at the court of Antigonus: if so, his ashes were probably removed to his native country, as Pomponius Mela, who lived in the first century of the Christian æra, states that the tomb of the poet was to be seen in his time near to Pompeiopolis, the name to which Soli had been changed in honour of Pompey the Great*. There was a silver coin of Cilicia bearing the head of Aratus, and on the reverse a lyre, of which a specimen is still in existence†.


ON THE

CELESTIAL SPHERE.

In endeavouring to ascertain the nation to which we are indebted for the celestial sphere, and the date of its introduction, we have very little historical information to rely upon. The earliest writer we are acquainted with, who mentions the heavenly constellations, is Homer*. The following passage occurs in the description of Vulcan's shield:

'Εν μὲν γαῖαν ἔταξ', ἐν δ' οὐρανὸν, ἐν δὲ θάλασσαν,
'Ηλιόν τ' ἀκάμαντα, σελήνην τε πλήθουσαν,
'Εν δὲ τὰ τείρεα πάντα, τὰ τ' οὐρανὸς ἐστεφάνωται,
Πληνάδας θ' 'Υάδας τε, τότε σθένος Ὀρίωνος,
'Αρκτον θ', ἦν καὶ ἀμαξαν ἑπίκλησιν καλέουσιν,
'Η τ' αὐτοῦ στρέφεται, καὶ τ' Ὀρίωνα δοκεύει:
Οἶη δ' ἄμμορος ἐστὶ λοετρῶν Ὀκεανοῖο.

"There shone the image of the master mind;
There earth, there heaven, there ocean he design'd;
The unwearied sun, the moon completely round;
The starry lights that heaven's high convex crown'd;
The Pleiads, Hyads, with the northern team;
And great Orion's more refulgent beam;"

* See note at the end.
To which around the axle of the sky
The Bear revolving points his golden eye;
Still shines exalted in the ethereal plain,
Nor bathes his blazing forehead in the main."

(Pope.)

This description evidently shews that the celestial sphere of Homer was the same as that of Eudoxus and Aratus; and that at the time when the Iliad was written the Greeks were in possession of this sphere. Herodotus states that they borrowed the names of their twelve gods, their religious ceremonies, and their geometry from Egypt; and from the same people they are said to have obtained the celestial sphere. At the same time it is not probable that the Egyptians were the inventors of it. There is nothing of an Egyptian character in the figures depicted upon it; nor can this people establish any claim to the invention, being never celebrated for their astronomical discoveries. Their talents and skill were directed to Geometry and Architecture, in which two sciences they greatly excelled. But there are two nations whose claim to the introduction of the celestial sphere rests upon such strong presumptive evidence that it is difficult to refuse to either the credit of the invention. These are the Assyrians and the Phenicians. And there is on the face of the sphere, as we now have it, and as it came to the Greeks, evidence almost amounting to proof that it was composed from two other distinct spheres, on one of which the signs or constellations were
animals, and on the other human figures with some emblematical signs*. The following is the way in which the constitution and present condition of the celestial sphere, exhibiting a strange mixture of human figures and animals, may be explained.

At an early period after the deluge that family of the human race which constituted the great Assyrian empire spread themselves over the central plain of Asia, founded large cities, among others Babylon, where they carried all the arts and sciences of civilized life to high perfection. We know that they excelled in the knowledge of astronomy; much of which they might derive from the antediluvian patriarchs through Noah and his immediate descendants. Cicero says: "Principio Assyrii, ut ab ultimis auctoritatem repetam, propter planitiem, magnitudinemque regionum, quas incolebant, cum cœlum ex omni parte patens, atque apertum intuerentur, trajectiones, motusque stellarum observaverunt: quibus notatis quid cuique significaretur, memoriae prodiderunt."—(Cic. de Divin.) They would construct a celestial sphere. And we can imagine that, agreeably to the notions entertained by those early nations, of respect and veneration for their departed ancestors, they would honour their memories by portraying their figures on the celestial sphere. From the early history of the human race, as recorded in the

* These might originally have been borne by some figure, which has been omitted and the emblem retained: as the crown, the lyre, the triangle, &c. In the constellation Aquarius with his urn we may have the figure and the emblem.
first ten chapters of Genesis, and the continued records of their own empire, they would form a picture-history, commencing with Adam and reaching to their own times. Such I conceive to have been the Assyrian or Babylonian sphere; and that from it are derived the human figures on our celestial globe.

The other sphere, of which the signs or constellations were the figures of animals, was of Phenician origin. This people at an early period having migrated to the eastern shores of the Mediterranean became the first of maritime nations:

Oi μὲν ἐπὶ ἡπείρῳ, τοῖπερ Σύριοι καλέονται,
Oi δ' ἄλος ἑγγὺς ἑόντες, ἐπωνυμίην Φοίνικες,
Τῶν δ' ἁνδρῶν γενεᾶς οἱ Ἐρυθραῖοι γεγάσαν,
Oi πρῶτοι νήσου ἐπειρήσαντο θαλάσσης,
Πρῶτοι δ' ἐμπορίης ἀλικνεός ἐμνήσαντο,
Καὶ βαθὺν οὐρανίων ἀστρων πόρον ἐφφάσαντο.
(Dionys. 904.)

Their country extended along the coast of Syria, their inland territory being very limited, the ranges of Libanus and Antilibanus forming their utmost barrier to the east, and separating them from other nations. They soon became a populous and powerful people, and were most celebrated for their maritime skill and boldness, and for the advancement they made in arithmetic and astronomy. Their mariners would carefully observe the positions and motions of the heavenly bodies, and would figure them upon a celestial sphere. And in so doing, what plan would they more probably adopt than that of taking for
the signs or constellations the images which distinguished and gave a name to their celebrated ships? The learned Bochart has clearly shewn that the word Pegasus is of Phenician origin: L P e g o r N A B P e g a, “a bridle,” and B P e g a, “a horse,” forming the word D N A D P e “Pegasus,” “the bridled horse,” no doubt the figure at the head, and the name of a ship. The body of this animal and of several others on the globe are cut in half, exactly representing the figure as it would appear on the head of a ship. Cetus, a whale, or great fish: a Dolphin: a Hydra, or sea-snake: a Swan: a Ram: a Bull, are all such signs as ships would bear.*

The next question is: How and where did the amalgamation of the Babylonian and Phenician spheres take place? This, I imagine, was the work of the Egyptians. By the traffic, which they carried on to the south through the red sea, and along the coast of the Arabian gulf, they would become acquainted with and adopt the former; and at the same time the northern inhabitants of the country by their commercial intercourse with the nations on the coasts of the Mediterranean, especially

* It is far from improbable, that the whole of these Phenician signs were taken from the interior of one of their temples. It was customary to make an offering in token of any special deliverance, or successful voyage, by suspending the emblem of the ship in gold or some less costly material along the walls of their temples. Homer mentions among the contents of a temple,

“The yellow [golden] heads of horses.”

Κτητοὶ δὲ τρίποδες τε, καὶ ἵππων ξανθὰ κάρηνα. (II. ix. 406.)
the Phenicians, would receive and adopt the latter; and the necessary result would be, that the Egyptian astronomers would form one sphere from the two, adopting from each those constellations which according to their judgment rendered the celestial map most clear and complete. And this accounts for so many constellations bearing two distinct names, and for the union of totally dissimilar objects in one sign. On the Phenician sphere the two northern constellations were "Arctoi," "Bears*:" on the Babylonian, "Amaxai," "Chariots." On the Babylonian the human figure now called Auriga corresponded with one on the Phenician called "the Goat and her kids," and hence Auriga is represented as bearing a Goat and her kids.

Had we now the Babylonian sphere unmutilated, it would be a picture history from Adam to the time of its invention. Commencing at the north: The two chariots revolving round the pole, turning each way, one to the east and one to the west, and never setting, with Draco the great serpent between them, were emblems of אָּהָרְוֹנַכָּס אָּאָה לָהֵם רַחֲרֵי הָמְתָהפָּכָה, τα' χερουβιμ και την φλογίνην ρουμφαιαν την στρεφομενην, "the cherubim and flaming sword turning every way." The first figure, of which Aratus and the early astronomers give a description from the tradition they

* Dubhe, the name of the bright star in this constellation, gives us the Phenician name of the constellation itself: דָּבָּא, Dûb, a Bear. Hyginus states that Thales, a Phenician, discovered the Little Bear, and gave it the name; and that also it was called Phenice.
had received, is: "That of a labouring man, a man doomed to labour: his name is unknown: the cause of his task is unknown, he is in an attitude of supplication, kneeling on his right knee, hence his title Engonasin, [ἐν γόνασσώ] Geniculator: his left foot treads on the dragon's head: he is naked, and bears on one arm the skin of a beast." That this figure represents our first parent, as described in the third chapter of Genesis, no one can doubt. How his name was lost is very evident: הגד, "Adam," in the original language is not only specially the name of our first parent, but signifies generally "a man." Hence in another language it might be rendered, "a man;" and "Adam doomed to labour," would become, "a man doomed to labour," or "a labouring man." The name of the next figure, translated from that which he bore on the Babylonian sphere into Greek, is, "Ὀφιοχος," "Ophiuchus," "Serpentarius;" "qui tenet serpentem," "the man who holds or restrains the serpent." Here then follows close upon Adam the promised seed, that is, Seth, who in the early period of the human race was considered to be the promised seed*.

In like manner the traces of other antediluvians may be found north of the equator. South of it we have Argo, the hinder part of the Ark, as it might be seen at that time on mount Ararat: the raven† resting on the Hydra,

* Vid. Gen. iv. 25. "She bare a son, and called his name Seth: For God, said she, hath appointed me another seed instead of Abel, whom Cain slew."

† All the fables respecting this bird relate to his having been sent by Apollo to fetch water, not returning in proper time, and
the water-snake. The Centaur (Noah) bearing \( \theta \eta \rho \iota \omicron \upsilon \) a victim, an offering, or as some say \( \omicron \nu \omicron \upsilon \varepsilon \sigma \kappa \omicron \nu \) a flask of wine. And not far distant, Orion, (Nimrod) לְבָלָד צָא, "the Giant," "the mighty hunter."

After that the celestial sphere had fallen into the hands of the Greeks, they applied to the several figures of men and animals, which they found depicted upon it, the stories of their own mythology, and changed several of their names accordingly; in the same manner as we know that after the time of Aratus*, they substituted Hercules for Engonasin; putting a club in his hand: describing the animal's skin on his arm as that of the Nemean Lion, and the Dragon on whose head he treads as the guardian of the golden apples of the Hesperides.

then with an empty vessel, evidently in allusion to the Raven sent from the Ark. Gen. viii. 7.

* Hyginus states that Eratosthenes first called this constellation by the name of Hercules.
THE CONSTELLATIONS ON THE CELESTIAL SPHERE OF ARATUS WERE AS FOLLOW.

NORTH OF THE EQUATOR.

1. **Ursa Major. The Greater Bear. Helice.**
   The Greater Northern Wain. In this constellation is one star of the first magnitude, **Duhebe**, in the square on the back.

2. **Ursa Minor. The Lesser Bear. Cynosyra.**
   The Lesser Northern Wain. In this constellation **Cynosyra** or **Ruccabah** at the extremity of the tail is the Pole star.

3. **Draco. The Dragon.**
   These three constellations were always above the horizon in the latitude for which the sphere of Aratus was constructed.

4. **Engonasin ['O ἐν γόνασιν] Geniculator. The Labouring Man.**
   This constellation after the time of Aratus was changed into that of **Hercules.**

5. **Corona Borealis. The Northern Crown.**

6. **Ophiuchus. Serpentarius. The man who holds the Serpent.**
   A naked figure of a man folded round by a serpent, of which he grasps the neck in his left hand, and the tail in his right.

7. **Bootes. Arctophylax.**
   A naked figure with a belt (**Zωνν**i) round the waist: bearing in one hand a sickle, and in the other a goad or spear. In this
CELESTIAL SPHERE.

constellation is the bright star Arcturus. The constellation itself is frequently designated by the name of the star.

8. Auriga. Erecthonius. A naked figure. He bears a goat on his left* shoulder, and reins in his right hand. On or near the goat is the star Capella, and below it two small stars, Hædi, the Kids, which were considered inauspicious stars to sailors.

9. Cepheus. A naked figure wearing a crown, and a belt (Zaïvn) round his loins.

10. Cassiopeia. A naked female figure sitting on a throne or in a chair; with arms extended in the attitude of beating her breast.

11. Andromeda. A female figure with a wreath on her head, and with robes (Za'ματα), a chain on her wrists passing round her back. On her head Alpherat: on her loins Mirach: on her foot Almack.


14. Perseus. A naked winged warrior, bearing in his right hand a drawn sword, and in his left hand a human head.

* The north side of a figure is called the right, and the south the left. Thus Apollo directs Phaeton:

"Neu to dexterior tortum declinet in anguem,
Neve sinistrior pressum rota ducat ad aram."

It must be remembered, that the right side of a figure depicted on a convex globe becomes the left, when seen from the center; and vice versa.
15. Pleiades. Seven small stars. These seven stars are now in the constellation of the Bull; but on the sphere of Eudoxus they formed a small constellation of themselves, near the left knee: according to Hipparchus, near the left foot of Perseus.

16. Lyra, or Vultur cadens. The Lyre. This constellation contains the splendid star Vega.


18. Sagitta. An Arrow or Dart.

19. Aquila, or Vultur volans. An Eagle. In this constellation is the bright star Altair.

20. Delphinus. The Dolphin. This constellation was called by the ancients the musical sign. The reason given for this title was, that it contained nine stars, the number of the Muses. The cause of the name may be the Dolphin's supposed fondness of music. (Pl. Nat. Hist. ix. 8.)

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ON THE ZODIAC OR ECLIPTIC.

1. Aries. The Ram. A constellation containing no bright stars. His head is reversed, looking back to the east.

2. Taurus. The Bull. The forepart of a Bull, facing to the east. In the left eye is the bright star Aldebaran.
3. Gemini. The Twins. Castor and Pollux. Two naked infants; the arm of one around the loins of the other. In rising their feet first appear above the horizon. The star in the head of Pollux is of the first magnitude. These stars were considered propitious to sailors.

4. Cancer. The Crab. The head of the Crab is turned to the east. In this constellation there is a small bright nebula called by the ancients Παττυνη, Praesepe, the manger; and on each side of this nebula to the north and south a small star. These two stars were called "Ovoc, Aselli, the Asses. The Phatne consists of five small stars, and the Onoi are scarcely perceptible to the naked eye, but they were considered by the ancients of great importance in their prognostications of the weather.

5. Leo. The Lion. The conspicuous star Regulus lies in the heart of Leo, and Denebola at the extremity of his tail.

6. Virgo. Erygone. The Virgin. An angelic figure with wings, bearing in her left hand a spike of corn. On which is the bright star Spica. A cluster of small stars, which were originally in Virgo, or according to some in Leo, now forms another constellation, Coma Berenices.


8. Scorpio. The Scorpion. On the sphere of Eudoxus the foreclaws of the Scorpion constitute the seventh sign of the Zodiac, and the remaining portion of Scorpio the eighth. Hence Aratus desig-
nates Scorpio, "Μεγαθηρίον," "Megatherion," "The great beast." (Phænom. 82.) And Ovid says:

"Est locus in geminos ubi brachia concavat arcus Scorpios; et cauda flexisque utrimque lacertis Porrigit in spatium signorum membra duorum."

His length extended through two-twelfths or one-sixth of the whole zodiac circle. After the time of Aratus, Libra, The Scales, was substituted for Chelæ, The Claws, on the celestial sphere. Virgil suggested this constellation as the proper one for the star of Augustus, when after his death he should be inscribed among the gods, as the 23rd of September was his birth-day, at which time the Sun enters this constellation:

"Anne novum tardis sidus te mensibus addam?
Qua locus Erigonen inter Chelasque sequentes Panditur: ipse tibi jam brachia contrahit ardens Scorpios, et cæli justa plus parte relinquit."

(Georg. i. 32.)

The Poet implies that in honour of Augustus the Scorpion had contracted his claws to make room for Libra, about to be honoured by the Julium Sidus. Manilius also:

"Sed cum autumnales cæperunt surgere Chelæ, Felix æquato genitus sub pondere Libræ, Judex examen sistet vitæque necisque; Imponetque jugum terris, legesque rogabit. Illum urbes et regna trement, nutuque regentur Unius, et cæli post terras jura manebunt."

(Lib. iv. 548.)
There is a splendid star Antar, or Cor Scorpionis, on the breast of Scorpio.


11. Aquarius. The man who holds the watering Urn. Aquarius bears on his right arm an urn, from which water is flowing, and in his left hand* probably some ears of corn, emblems of the primitive offering to the Deity before the introduction of wine and animal sacrifices. When the Sun was in Aquarius the Romans commenced their year: the ninth of February was "Veris initium."

" . . . . . cum frigidus olim
Jam cadit, extremoque inrorat Aquarius anno."

(Virg. Geor. iii. 303.)

"Quae, simul inversum contristat Aquarius annum,
Haud usquam prorepit."

(Hor. Sat. i. 1. 36.)

12. Pisces. The Fishes. One is called the northern and the other the southern. Their tails are united by a band.

* It is impossible to determine the article, which was borne in the left hand of Aquarius and of Orion.
1. **Orion. The Giant Hunter.** Orion was a giant figure in the attitude of ascending. He wore a belt and sword. In one hand he bore a club, in the other probably a hunter's bag. His head was bent backward between his shoulders, so as to exhibit his face. It may here be remarked, that all the human figures on the ancient sphere were portrayed with their backs to the spectator, and their faces turned more or less to view. The most northern star on the belt of Orion lies on the equator. This constellation has two stars of the first magnitude: Rigel on the left foot, and Betalgeux on the right shoulder; and three of second magnitude. Three small stars on the head of Orion are called Jugule, and hence the constellation itself sometimes bears the name of Jugula. These stars were of great importance with the astronomers of Babylon, rising in their latitude with the Sun on the summer solstice.

2. **Canis Major. The Great Dog.** In this constellation is the star Sirius. The ancients imagined that the heat of the Sun when in Cancer and Leo was greatly augmented by the additional influence of Sirius and other large stars that lie in or near these constellations:

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... άριζηλος δέ οἱ αὐγαὶ
Φαίνονται πολλοὶ μετ' ἀστραὶ νυκτὸς ἀμολυγῷ·
"Ον τε κύ̣ν̣ 'Ορίωνος ἐπίκλησιν καλέουσιν,
```
Λαμπρότατος μὲν ὄγ' ἐστὶ κακὸν δὲ τε σήμα τέτυκται,
Καὶ τε φέρει πολλῶν πυρετὸν δειλοῖσι βροτῶσι.

II. xxii. 29.

Ponendæque domo quærenda est area primum:
Novistine locum potiorem rure beato?
Est ubi plus tepeant hyemes? ubi gratior aura
Leniat et rabiem Canis et momenta Leonis,
Quum semel accepit solem furibundus acutum?

(Hor. Epist. i. x. 16.)

3. Lepus. The Hare.

4. Argo. The hinder part of a ship.


6. Eridanus. The River. Canopus, a star of the first magnitude, lies between this constellation and that of Argo.

7. Piscis Austrinus. The Southern Fish. In this constellation is the bright star Fomalhaut.


9. Ara. The Altar. This constellation contains no star of greater magnitude than the fourth, and lies so far to the south, that it is in no wise conspicuous in our northern latitudes; but it was considered of the greatest importance by the ancients as portending changes of the weather.


11. Hydra. The Sea Serpent. Upon it an empty Goblet, and a Raven or Crow.
12. **Canis Minor. Canicula. The lesser Dog.**

This constellation is also called Procyon from the bright star on the Dog's shoulder. \(\text{Προκύων},\) Procyon, signifies, "rising before the Dog," i.e. before the greater Dog, Sirius.

This star, as well as Sirius, was considered by the ancients as contributing to the heat of the Dog-days:

"Jam clarus occultum Andromedæ Pater Ostendit ignem; jam Procyon furit,
Et stella vesani Leonis
Sole dies referente siccos."

(Hor. iii. Od. 29. 17.)

Cum vero in vastos surget Nemeæus hiatus;
Exoriturque canis, latratque canicula flammæ,
Et rabit igne suo, geminatque incendia solis.

Man. v. 207.

These are all the constellations of the old celestial sphere. Twenty northern, twelve southern, and twelve on the Zodiac, making the total of forty-four.
NOTE. Page 13.

In the book of Job, מָרֹת, לִיוֹמָה, בָּשָׂל, נֶשֶׁר, Ash, Kesil, Kimah, Mazzaroth, are by most commentators considered to be the names of constellations or stars. It would have been far better under this impression for the translators of our bible to have retained the Hebrew names, Ash, Kesil, and Kimah, as well as Mazzaroth. The Septuagint translators of the book of Job, in Ch. ix. 9, render בָּשָׂל, נֶשֶׁר, Ash, Kesil, Kimah, Πλειάδ, Πλείας, Pleias, Ἐσερέος, Ἡσερέος, Ἀρκτοῦρος, Arcturus; and in Ch. xxxviii. 31, 32, the same words are rendered Ἐσερέος, Ἡσερέος, Ὀρίων, Orion, Πλειάς, Pleias. In Amos v. 8, ὁ ποιῶν πάντα καὶ μετασκευάσαων, “who made and fashioned all things.” In like manner the Vulgate, in Job ix. 9, renders these three words, Arcturus, Orion, Hyades; and in xxxviii. 31, 32, Vesperus, Arcturus, Pleiades. The interpretations of the rabbinical and other commentators upon these words are various. Ramban says: they are the names of superior stars, that is, stars of great influence and power. R. Salomo and Ralbag, that Kesil and Kimah are constellations. R. Aben Esra, that Ash is a constellation of seven stars not far from the north pole, and that Kesil and Kimah are stars of first magnitude in the Zodiac. R. Perizolides and others, that Ash is one of the stars in the tail of the Ram, Kesil and Kimah the stars that occasion cold and heat: Kesil, the cold; and Kimah, the heat. Mercer, with others, renders the three words, Arcturus, Orion, Pleiades. Cocceius maintains that Ash is Ursa minor: Kesil, Cor Scorpionis: Kimah, Oculus Tauri. Parkhurst rejects the notion of these words being the names of stars, and renders שֶׁלש, Ash, Blight: בָּשָׂל, Kesil, Cold: לִיוֹמָה, Kimah, Heat. There is the same diversity of opinion respecting מָרֹת, Mazzaroth. R. Levy conjectures that it was a star which seldom appeared in the land of Uz, and hence the words: “Num educes Mazzaroth tempore suo?” Others consider this word a title for the twelve signs of the Zodiac: others again, that Ash, Kesil, Kimah and Mazzaroth are the four cardinal points. Schmidt remarks on Job ix. 9: “Insuperabilem, ut existimo, versus habet difficulatatem, dum continet astrorum ejusmodi nomina de quibus nihil nisi conjectura nobis relica est. Nos nihil audemus definire: sed cum Rambane in hoc potius acquisecimus, quod insignia astra sint, a quibus ad reliqua omnia valeat collectio.” Bochart (Hierozoic. Vol. n. p. 113, 114) gives an explanation of Job xxxviii. 32, עִישׂ לְעֵלָה בְּנִי, “Aish cum filiis
suis;" "Aish with her sons." He shews, that with some of the Arabian astrologers the name of the greater and lesser Bear was, "Feretrum majus et feretrum minus," "the greater and the lesser Bier, or Sarcophagus," on which a dead body is carried; and that the three stars in the tail of the Bear were called "the sons of," that is, the attendants or followers of the Bier, which was itself constituted of the other four conspicuous stars in the constellation. Hence Job says, "An feretrum deduces cum filiis suis?" Schmidt on this verse ventures a conjecture, namely, that by "Aish cum filiis suis" is meant Jupiter and his four satellites: the arguments by which he supports this conjecture may be seen in his note upon the passage.

That these four words have any allusion to the stars is merely conjecture. We do not find these names or any similar to them used by the Arabian astronomers, which we probably should do, had they been the names of constellations or stars on the celestial sphere in the days of Job. May not the words א睡前, Kesil, Kimah, signify vapour, ice or snow, and the passages in which they occur be thus rendered?

Job ix. 8. Which alone spreadeth out the heavens, and treadeth on the wave of the sea.
9. Which maketh the vapour, the snow, and the rain.

Job xxxviii. 30. The waters are hid as with a stone, and the face of the deep is frozen.
31. Canst thou congeal the soft showers of rain, or loosen the bands of ice?
32. Canst thou bring forth Mazzaroth† in his season? Canst thou produce the vapour with the dew-drops?

Amos v. 8. Seek him that maketh the snow and the rain, and turneth the shadow of darkness into morning, and maketh the day dark with night; that calleth for the waters of the sea, and poureth them out upon the face of the earth.

* יָבָכָה, Kislev, was thename of the ninth month, a very cold month, as we know from Jer. xxxvi. 22; whence probably its name, "the icy month."
† Probably the name of a periodical pestilential wind.
ΓΡΑΜΜΑ ΤΟΔ ΑΡΗΤΟΙΟ ΔΑΗΜΟΝΟΣ ΩΣ ΠΟΤΕ ΛΕΠΤΗ
ΦΡΟΝΤΙΔΙ ΔΗΝΑΙΟΥΣ ΑΣΤΕΡΑΣ ΕΦΡΑΣΑΤΟ
ΑΠΛΑΝΕΑΣ Τ ΑΜΦΩ ΚΑΙ ΑΛΗΜΟΝΑΣ ΟΙΣΙΝ
ΕΝΑΡΓΗΣ
ΙΛΛΟΜΕΝΟΣ ΚΥΚΛΟΙΣ ΟΥΡΑΝΟΣ ΕΝΔΕΔΕΤΑΙ
ΑΙΝΕΣΘΩ ΑΕ ΚΑΜΩΝ ΕΡΓΩΝ ΜΕΓΑ ΚΑΙ ΔΙΟΣ
ΕΙΝΑΙ
ΔΕΥΤΕΡΟΣ ΟΣΤΙΣ ΕΘΗΚ ΑΣΤΡΑ ΦΑΕΙΝΟΤΕΡΑ
THE

PHENOMENA.

LET us begin from Jove. Let every mortal raise His grateful voice to tune Jove’s endless praise. Jove fills the heaven—the earth—the sea—the air: We feel his spirit moving here, and every where. AND WE HIS OFFSPRING ARE. He ever good Daily provides for man his daily food. Ordains the seasons by his signs on high, Studding with gems of light the azure canopy. What time with plough and spade to break the soil, That plenteous stores may bless the reaper’s toil, What time to plant and prune the vine he shows, And hangs the purple cluster on its boughs. To Him—the First—the Last—all homage yield, Our Father—Wonderful—our Help—our Shield.

Next hail, harmonious Muses, and inspire Some portion of your own celestial fire, Not adverse to a daring Poet’s flight, Who scours on fancy’s wings the realms of light.
These diamond orbs their various circles trace,
And run incessantly their daily race.

Round a fix'd axis roll the starry skies:
Earth, even balanc'd, in the centre lies.
One pole far south is hid from mortal eye,
One o'er our northern ocean rises high:

Round this The Bears, with head to head reverse,
And back to back, pursue their endless course.
With mortals once they dwelt; if truth belong
To old tradition, and the Poet's song.
When saved by craft from Saturn's bloody hand
Jove's mother bare him to the Cretan strand,

There Helice and Cynosyra fair
Foster'd the babe with all a mother's care.
The Corybantes beat their cymbals near,
Deafening his cries to Saturn's watchful ear.
Grateful his foster-dames, the Poets say,
Jove plac'd in heaven to run their glorious way.
Pleasing to sight is Helice's bright team,
And Grecian sailors hail her guiding beam,
When toss'd by adverse winds and tempest black
Mid wintry seas their dubious course they track.

But hardier sons of Tyre, who love to brave
The unknown monsters of th' Atlantic wave,
By Cynosyra's surer guidance steer,
And safe return to wife and children dear.
Betwixt the Bears, like foaming river's tide,
The horrid Dragon twists his scaly hide.
To distant Helice his tail extends,
In glittering folds round Cynosyra bends.
Swoln is his neck—eyes charg'd with sparkling fire
His crested head illume. As if in ire
To Helice he turns his foaming jaw,
And darts his tongue barb'd with a blazing star.
His head upon the arctic wave he lays,
Where blend the western with the eastern rays.
Around the pole he swims, but never laves
His fiery limbs in ocean's cooling waves.

A Labouring Man next rises to our sight:
But what his task—or who this honour'd wight—
No Poet tells. Upon his knee he bends,
And hence his name Engonasin descends.
He lifts his suppliant arms, and dares to rest
His right foot on the scaly Dragon's crest.

Near shines that diamond Crown, which Bacchus
made
For faithful Ariadne, when betray'd
By ingrate Theseus, left to grief and shame
Th' enamour'd God consol'd the widow'd dame.

A head of splendour Serpentarius rears:
As crystal clear his shoulder broad appears,
And rivals jealous Cynthia's silver light,
When in full power she rules the wintry night.

His feet stamp Scorpio down—enormous beast—
Crushing the monster's eye, and plaited breast.
With outstretch'd arms he holds the serpent's coils:
His limbs it folds within its scaly toils.
With his right hand its writhing tail he grasps,
Its swelling neck his left securely clasps.
The reptile rears its crested head on high,
Reaching the seven-starr'd crown in northern sky.

Beneath its coils the giant Claws are found:
Few are their stars—for splendour unrenown'd.

Hard on the traces of the greater Bear
Presses Bootes in his swift career.
'Mong many gems more brilliant than the rest
Arcturus glows upon his belted waist.
Through the long day he drives the Arctic Wain,
And sinks reluctant in the western main.

Rising beneath Bootes' feet admire
That beauteous form in maidenly attire.
In her left hand a golden spike she bears:
Glitter with sparkling gems her yellow hairs.
Art thou, fair Virgin, daughter of that fam'd
Immortal sage of old, Astræus nam'd,
With skilful hand who mapp'd the starry sky,
Plumbing its dark abyss with Philosophic eye?
Or art thou, Goddess, she of heavenly birth,
Who condescended once to dwell on earth,
Astraea call’d, in fabled days of old—
Alas! for ever gone—the Poet’s age of gold?
Then Justice rul’d supreme, man’s only guide:
No fraud—no violence—no strife—no pride.
No sailor ventur’d then to distant clime,
And brought back foreign wealth and foreign crime.
All tended then the flock, or till’d the soil,
And milk and fruit repaid their easy toil.
All happy—equal, as the Poets sing,
No fierce seditious mob—no tyrant king—
But soon these days of innocence were gone:
In his sire’s place arose a viler son
Of silver race. Then to the mountain’s glen
Scar’d and offended from the haunts of men
Fair Justice fled. Yet still at times were seen
Her angel figure, and her godlike mien.
But when she view’d the crowded city’s throng—
"The proud man’s contumely—the poor man’s wrong—"
Vex’d was her righteous soul. "Mortals, farewell,
"Farewell," she said, "no more with man I dwell.
"Ye of your sires a vile degenerate race,
"Your offspring you their fathers will disgrace.
"War soon will desolate these fruitful lands—
"A brother’s blood will stain a brother’s hands."
"Rising to view I see a ghastly train—
"Revenge—Oppression—Woe—Despair—and Pain."
Phenomena.

She said; and hastening to the mountain's height
Fled far away from mortal's longing sight.
These men soon pass'd away, and in their place
Far viler sons arose—the brazen race—
They first the stubborn ore obedient made,
And forg'd—unhallow'd skill—the murderous blade.
The patient ox, long wont to till the soil,
To tread the corn, and share his master's toil,
Dragg'd from his stall—poor harmless slaughter'd beast—
Gave to his cruel lord a bloody feast.
Justice was shock'd—the blood-stain'd earth she flies—
Jove bade her welcome to her native skies;
And near Bootes take her honour'd place,
Where men might still adore her angel face.
Sparkle her golden wings with crystal light—
One gem they bear superlatively bright:
It rolls beneath the tail, and may compare
With the fam'd stars that deck the greater Bear.
One gem upon her snow-white shoulder shines:
One clasps the silken girdle of her loins:
One decks her bending knee; and in her hand
Glitters her golden spike like fiery brand.
Many less brilliant stars, by name unknown,
Spangle her vestments, and her forehead crown.

The Twins, beneath the muzzle of the Bear,
Parted on earth, but join'd for ever here,
Together shine:
Her middle part below,
The stars in Cancer few, and faintly glow:

'Neath her hind feet, as rushing on his prey,
The lordly Lion greets the God of day,
When out of Cancer, in his torrid car
Borne high, he shoots his arrows from afar,
Scorching the empty fields, and thirsty plain:
Secures the barn the harvest's golden grain.
Then murmur first with hollow sound and deep—
Portentous warning—soon o'er ocean sweep
Th' Etesian winds. Black Neptune's bosom heaves:
He frowns at first, and curbs his restless waves.
But soon joins headlong in the desperate fray,
Careering madly on the foaming spray.
Give me a vessel broad, if doom'd to brave
These wild winds' fury, and the warring wave.

Next the broad back and sinewy limbs appear
Of fam'd Auriga—dauntless charioteer—
Who lash'd the untam'd coursers to the yoke,
And scour'd the dusty plain with fervid spoke.
Now round the pole he holds his swift career,
While presses on his track the greater Bear.
Far in the north his giant form begins,
Reaching athwart the sky the distant Twins.
The sacred Goat upon his shoulder rests—
To infant Jove she gave a mother's breasts,
Kind foster-nurse! Grateful he plac'd her here,
And bade her Kids their mother's honour share.
CaPella's course admiring landsmen trace,
But sailors hate her inauspicious face.

Beneath Auriga, turning to the east,
The Tyrian Bull, Europa's treacherous beast,
His golden horns and snowy neck displays:
Rivals his splendid head Apollo's rays.
Glows his red eye with Aldebaran's fire—
With sparkling gems his brow the hyads tire.
Auriga and the Bull together meet—
Touches his star-tipp'd horn the hero's feet.
The beast before him to the west descends—
Together with him from the east ascends.

Unhappy Cepheus, though of race divine!
From Jove himself descends the royal line,
And not unmindful of his noble birth
To heaven Jove rais'd him from this lower earth.
Above the lesser Bear his form is seen—
Measures her tail the space his feet between.
Near to the studded girdle of his waist
Lies the huge coil of Draco's speckled breast.

Near and before him rolls divinely fair
Proud Cassiopeia in her stately chair.
Few gems, though bright, the mournful matron grace;
Nor can she rival Cythia's beauteous face.
When the bifolding door the warder bars,
His crooked key depict her glittering stars.
She seems to wail the judgments, which betide
Her daughter, victim of a mother's pride.

Near, young Andromeda, more splendid far,
Though grief and fear the maiden's beauty mar.
Her garland'd head—her shoulders bare admire—
Her diamond sandall'd feet—her rich attire—
She still in heaven her captive form retains;
And on her wrists still hang the galling chains.

Close and above her head the wondrous steed
With hoof and wing exerts a double speed.
So close they meet, one brilliant star they share,
His body it adorns—and decks her hair.
His side and shoulder with three others grac'd,
As if by art at equal distance plac'd—
Splendid and large. Obscure his ample chest—
Black his long neck—and black his flowing crest.
But on his nostril glows a living fire—
Snorting he seems to stamp with rage and ire.
No quadruped this horse; for lost to sight
Vanish his hinder parts in darkest night.
Once, as they say, on Helicon was seen
Starting from rocky cleft sweet Hippocrene;
When with his hoof he struck the sounding rock,
And earth, obedient to the magic shock,
Pour'd forth her copious stream. And hence the name
Of Hippocrene—and hence its lasting fame.
Still flows the cooling fount in Thespian grove—
Treads Pegasus th' elysian fields of Jove.

While slow the stars of Cynosyra roll,
Creeping in narrow circle round the pole;
The furious Ram pursues a swift career
Through the wide centre of the crystal sphere.
No splendid gems his golden fleece adorn—
Two dimly glitter on his crooked horn.
If you would find him in the crowded skies,
Beneath Andromeda's bright belt he lies.
On the same path he round the heaven is borne,
As Scorpio's claws, and fam'd Orion's zone.

Deltoton next—another sign—is given,
Which marks the place of Aries in the heaven.
Three stars the form of a Triangle trace—
Two equal sides upon a shorter base.
Southward of this, declining to the west,
Behold his ample horns and shaggy breast.

Where the equator cuts the zodiac line,
On the blue vault the glittering Fishes shine.
Though far apart a diamond-studded chain,
Clasping their silvery tails, unites the twain.
The Northern one more bright is seen to glide
Beneath th' uplifted arm, and near the side
Of fair Andromeda.

Her anxious eyes
Gleam bright with hope: beneath her Perseus flies,
Her brave deliverer—mighty son of Jove—
His giant strides the blue vault climb, and move
A cloud of dust in heaven: his falchion bare
Reaches his honour'd step-dame's golden chair.

Near his left knee the Pleiads next are roll'd,
Like seven pure brilliants set in ring of gold.
Though each one small, their splendour all combine
To form one gem, and gloriously they shine.
Their number seven, though some men fondly say,
And Poets feign, that one has pass'd away.
Alcyone—Celeno—Merope—
Electra—Taygeta—and Sterope—
With Maia—honour'd sisterhood—by Jove
To rule the seasons plac'd in heaven above.
Men mark them, rising with the solar ray,
The harbingers of summer's brighter day—
Men mark them, rising with Sol's setting light,
Forerunners of the winter's gloomy night.
They guide the ploughman to the mellow land—
The sower casts his seed at their command.
When the mute shell, by cords elastic bound,
Made vocal warbled forth harmonious sound—
Jove snatch'd from earth the care-dispelling Lyre—
The Gods themselves sweet melody admire.
Before the Labouring Man its place in heaven—
To smooth toil's rugged brow sweet music given. 280

Next soars with wings expanding far and wide
Around the pole in majesty to glide
Jove's mottled Swan. Th' adulterous bird, they say,
That lent his form fair Leda to betray.
His curving neck around the Lyre he bends—
To distant sky his diamond head extends—
Dark and obscure in parts—in others bright—
Studded his wings with numerous gems of light.
Like to a hovering bird his pinions rest,
While floating tranquilly he seeks the west. 290
Reaches one foot to Cepheus far aloof—
Touches one wing the flying-horse's hoof.

About this steed extends the Fish's Band—
Upon his mane Aquarius rests his hand.

Before him Capricorn—of monster kind—
In front a goat—a scaly fish behind.
Down to his realms each year the Sun descends:
Returning thence with strength renew'd ascends.
Hapless the mariners, who rashly brave,
Or fates compel to tempt, the wintry wave. 300
PHENOMENA.

The pallid sun, late rising from the east,
Looms through the murky cloud, and seeks the west.
Dark gloomy Night usurps unequal sway,
Nor deigns to share it with the God of day.
The long black billows roll—the whirlwinds roar—
And smokes with shiver'd foam the rocky shore.
Now headlong in the yawning trough they merge—
Now rise like cormorants on the crested surge—
Chills their spray-beaten limbs the icy air—
Chills their heart's blood of death the instant fear.  310
Poor hapless mortals! but a plank of wood
'Twixt them and stygian Pluto's drear abode!
Sailors, forewarn'd within your ports remain,
Nor, rashly venturing, loss and ruin gain.

E'en while the sun in Sagittarius lies,
Trust not the faithless sea and cloudless skies.
Mark where on zodiac-line the Archer stands,
With outstretch'd bow and arrow in his hands.
When from the east his monster form he rears,
Bright Scorpio's gem Antar aloft appears;
And high in their meridian glory roll
Cold Cynosyra's stars around the pole:
Orion plunges in the western waves,
And half his body northern Cepheus laves.

There lies an Arrow—from what bow it fell
Near to the flying Swan, no Poets tell.
Beneath it soars the Royal Bird of Jove,
Rais'd by his master to these realms above.
To sailors oft an inauspicious star,
Rises at dawn of day, the bright Atair.

Where Capricorn his horned forehead rears,
Not distant far his course the Dolphin steers—
Obedient fish—that from a distant shore
His coy reluctant bride to Neptune bore.
With four fair stars he decks the summer skies,
Sparkling and soft as maiden's beauteous eyes.

Now have been sung the various forms that roll
Their daily orbits round the northern pole;
And the twelve signs, through which the God of day,
Varying the seasons, runs his glorious way.
There yet remain untold those stars which shine
In realms beyond the equinoctial line.

Athwart the Bull first rise—majestic sight!
Orion's giant limbs and shoulders bright.
Who but admires him stalking through the sky,
With diamond-studded belt, and glittering thigh?

Nor with less ardour, pressing on his back,
The mottled Hound pursues his fiery track.
Dark are his lower parts as wintry night—
His head with burning star intensely bright.
Men call him SiriuS—for his blasting breath
Dries mortals up in pestilence and death.
When, following hard upon the God of day,
He darts through field and grove his parching ray;
The face of Nature scorch'd and blister'd lies,
And beauteous Flora withers—pines—and dies.
But luscious juice the bursting grapes distil;
And golden stores the reaper's bosom fill.

Up from the east the Hare before him flies—
Close he pursues her through the southern skies. 360
Nearer he cannot reach—farther she cannot strain—
And close they plunge into the western main.

Near to the quarters of Orion's hound
Steers through the azure vault her nightly round
The far-fam'd ship, in which bold Jason's crew
First dar'd dark ocean's trackless path pursue.
When a swift vessel ploughs her watery way,
With forward prow she meets the dashing spray;
But when deep-laden back from distant land
She comes, with forward poop a clamorous band 370
Of joyous sailors haul her to the strand.
And thus, with forward poop and prow reverse
The heavenly Argo steers her westward course.
O'er half her length a shroud of darkness cast—
Some splendid stars illume her head and mast.
Mark where the savage Cetus couching eyes
Andromeda, secure in northern skies.
The Fish and horned Ram his progress bar,
Nor dares he pass the track of Phoebus' car.
The silken bands, that join the Fishes' tails,
Meet in a star upon the monster's scales.

Beneath Orion's foot Eridanus begins
His winding course, and reaches Cetus' fins.
When high-born Phaeton with boyish pride
Presum'd his father's fiery steeds to guide,
And, from his shatter'd chariot in the wave
Hurl'd headlong, to ambition gave
An awful warning; from his reedy bed
Rous'd was the river-god—alarm'd he fled
From his parch'd channel—and in pity Jove
Gave him a place in the blue vault above.

Where broken Argo ploughs her azure way,
Where savage Cetus eyes his beauteous prey:
Between them both, beneath the flying Hare,
Unnumber'd, small and glittering stars appear.
Nameless they are—and boundless—unconfin'd
In fancied forms by human skill design'd.

These heavenly signs some wise and ancient man,
Skilful and apt the realms of night to scan,
Devis'd and figur'd: each arrang'd with care—
Decking with various forms the concave sphere.
Hopeless the task each separate star to name,  
Many in lustre and in size the same;  
But group'd in constellations they appear  
Though nameless known—though numberless in order clear.

The southern Fish beneath Aquarius glides,  
And upward turns to Cetus' scaly sides.  
Rolls from Aquarius' vase a limpid stream,  
Where numerous stars like sparkling bubbles gleam;  
But two alone beyond the others shine:  
This on the Fish's jaw—that on the Monster's spine.

Glitters, the forefeet of the Archer near,  
The southern Crown: its jewels not so fair  
As Ariadne's in the northern sphere.

Where Scorpio to the south his claw expands,  
Burning with constant fire an Altar stands.  
Few are the hours it shines to mortal eye—  
Short is its passage through the wintry sky—  
Long as Arcturus o'er the ocean rides,  
So long the darksome wave the Altar hides.  
Primeval Night, who with the God of day  
O'er earth and ocean holds divided sway,  
Pitying the toils and dangers of the brave Adventurous sailor through the pathless wave,
By certain signs the coming tempest shows,  
While Zephyr breathes, and smoothly ocean flows.  
When thou behold'st the Altar bright and clear,  
While all around is cloud and darkness drear,  
Forewarn'd, take heed—soon loud and fast  
Will Notus drive upon the furious blast.  

The prudent sailor with attentive eye  
Observes this warning beacon plac'd on high:  
Tightens each rope—binds fast the flapping sail—  
And rides securely through the threat'ning gale.  

Imprudent mariners these signs despise,  
Nor heed the murmuring wind and lowering skies:  
With sail to shivers torn and broken mast  
Headlong they drive before the furious blast:  
Now frowns with ruin big the mountain wave—  
Now gapes the dark abyss a yawning grave.  

If to their prayer propitious Jove attend,  
And from the north storm-quelling Boreas send;  
Dispers'd the clouds—serene the troubled air—  
And curb'd is Neptune in his mad career.  
But if the Centaur 'twixt the east and west  
Have half his course perform'd, and on his breast  
A cloudy vapour hang—forewarn'd beware—  
For Eurus with his blighting breath is near.  

The Centaur next his monster form displays.  
Is he sage Chiron, sung in Homer's lays?
PHENOMENA.

Above his front, of human form divine,
The scaled limbs of blazing Scorpio shine.  
Where in a horse his hinder quarters end,
Above on zodiac line the Claws extend.
In his right hand some beast he seems to bear—
They say, an offering for the Altar near.

The Hydra next her giant length extends—
Around the Centaur's head her tail she bends.
Above her coiled back the Lion stands—
Close o'er her glittering head dark Cancer hangs. 460
On the mid coil a Goblet rests—below,
As pecking at her skin, the crafty Crow.

Beneath the Twins the portals of the east
Dread Procyon bursts—though last, in splendour not
the least.

These are the heavenly orbs that ever roll
In their fix'd circles round the central pole.

Five other stars remain of various size,
That lawless seem to wander through the skies.
Hence Planets call'd—yet still they ever run
Through the twelve signs, the circuit of the sun. 470
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:

4—2
My easier task the circles to rehearse
Of the fix'd stars, and trace Sol's annual course.

If with admiring ken some cloudless night,
When no full moon obtrudes her jealous light,
To the high Heavens thou lift the starry eye,
A radiant girdle belts the azure sky—
A pearly pavement softly bright it seems—
Its silvery whiteness rivals Cynthia's beams—
The Milky Zone. No other circle given
Thus visible to mortal eyes in Heaven.
Four circles trace we on the heavenly sphere
To mark the course of each revolving year;
Round the mid heavens the larger two are bound,
Nearer the poles the lesser two are found.

Upon the northern, dear to sailors, shine
The brother Twins, of Jove's immortal line.
With glowing knees Auriga it adorns;
And close below the Bull expands his horns.
To Perseus' legs and shoulders it extends—
Andromeda her beauteous arm upon it bends
Down from the north. The Flying Horse aloof
Reaches the circle with his prancing hoof.
Stretches the Swan his neck and head afar,
Seeking to touch it with his utmost star.
Near it his shoulders Serpens rears,
And nearer yet the Serpent's head appears.
ASTRÆA's virgin form below reclines—
Her angel face on realms more southern shines.
It runs athwart the LION's loins and breast—
Cutting his shaggy mane and tawny chest.
Hence into CANCER, where its course begun,
And where in northern Tropic rests the Sun.
If in eight parts this circle we divide,
Five rise above—three sink in ocean's tide.
When Phæbus gains this point, approaching near
E'en to the forefeet of the greater Bear,
He checks his steeds, and turns his burning car
Down from the north to Capricorn afar.

The other corresponding circle lies
As distant from the pole in southern skies.
The breast it cuts and loins of CAPRICORN,
And both his legs, who holds the WATERING URN.
Its track on CETUS' fishy tail is found—
Through the swift HARE—and swift pursuing HOUND.
Onward it runs o'er ARGO's glittering mast,
And to the monster CENTAUR's hairy breast.
Divides the Scorpion near its fiery sting—
Cutting the Archer's crooked bow and string.
His southern limits here the Sun attains,
When tyrant Winter holds in icy chains
Our northern realms. Five parts of weary night
Our hapless lot—and three of solar light.
Betwixt them both a greater circle lies,  
And equally bisects the starry skies.  
When Phoebus cuts this Equinoctial way,  
He gives to man the balanc'd night and day:  
When weeping Autumn mourns the empty fields,  
And when to genial Spring stern Winter yields.
On it the Ram his golden fleece reclines;  
To it his crooked knees the Bull inclines;  
On it Orion’s diamond-studded waist;  
To it the Hydra lifts her coiled breast;  
Onward through Scorpio's outstretch'd Claws its track,  
Cutting the Serpent, and the brawny back  
Of Serpentarius. Closely soars above  
The mighty messenger of thundering Jove.  
Nor distant far the snorting Winged Horse,  
With flowing mane pursues his daily course.

The orbits of three circles we have trac'd,  
Directly round the polar axis plac'd:  
The fourth, obliquely running through the sky  
From lowest Capricorn to Cancer high,  
Touches each Tropic, and unites the twain,  
Twice cutting through the equinoctial line.  
No skilful hand, though Pallas lent her art,  
To orbs such various movements could impart,  
Harmonious all. On the celestial sphere  
Though stars untold, as ocean’s sand, appear,
Each tracks its separate orbit through the skies—
Fix'd is its place to set—its place to rise.
But the fourth circle on the ocean's face
To set and rise has no determin'd place.
Now mounting high to Cancer's torrid side—
With Capricorn now sinking in the tide.
If we this circle measure in the sky,
Spanning a sixth part with the human eye,
Two signs of twelve it can at once embrace,
Thence to the central eye an equal space.
Through torrid Cancer and the Lion's crest
This Zodiac runs, and o'er the Virgin's vest:
Where Scorpio stretches far his glittering Claws,
And where his arrow Sagittarius draws—
To Capricornus with his fishy stern,
And moist Aquarius with his flowing urn—
To where apart the silvery Fishes glide,
Their tails by silken band together tied—
By golden Aries, and the Bull's red eye—
To where the Twins propitious shine on high.
Each year this circle tracks the God of day,
Cheering the earth with his prolific ray.
Six of its parts in heaven conspicuous ride,
While six are hid from sight in ocean's tide.
Deep as it plunges in the southern main,
So high it mounts upon the starry plain.
Black dreary Night now holds extended sway,
Giving to earth the cold contracted day:
PHENOMENA.

Now triumphs in his turn the God of light,
Nor deigns to share his power with ancient Night:
Scarce sinks in western wave his burning car,
Ere burst his snorting steeds their eastern bar.

Important task to trace its course aright,
And mark its rising each successive night;
For always held within this zodiac bound,
Running his annual course the Sun is found.
If clouds arise, or mountains intervene,
And Phæbus' rising chariot is not seen;
Turn to that part of the horizon's line,
Where uneclips'd the heavenly beacons shine:
Some star there mark, which by its setting ray
Tells of the rising of the God of day.

When Cancer rises from the eastern main,
Not few the gems that deck the azure plain.
The diamond Crown, that amorous Bacchus gave
To Ariadne, in the western wave
One half is plung'd: the southern Fish descends
Headlong, his tail upon his back he bends.
Tir'd Serpentarius dips his heaving breast,
With his broad shoulders, and the Serpent's crest.
Arctophylax, insatiable of light,
Unwilling seeks the dreary realms of night—
Above the waves his outstretch'd hand remains,
Through half the night the struggle he maintains.
Rears to meridian sky Orion bold
His massy club—beneath his feet is roll'd
Eridanus—splendid his diamond band,
And sheath'd in flickering gold his flaming brand.  

When rising fiercely from his eastern lair,
The Lion shakes the dewdrops from his hair,
Jove's Eagle, scar'd, to western ocean flies,
Quenching the fiery bolt, and lightning of his eyes.
Headlong Engonasin—yet still appear
His knee and foot within the starry sphere.
The Hydra, fearless of the lordly beast,
Rises together with him from the east.
And burning Procyon, and the bright-ey'd Hare,
And forefeet of the greater Dog appear.

When fair Astræa shows her virgin face,
Propitious to this earth—her dwelling place
In times gone by; then sets the Arcadian Lyre,
Which skilful Hermes strung for Jove his sire—
Plunges the Dolphin in his native waves—
The mottled Swan his plumes in ocean laves—
Westward Eridanus pours down his tide—
Merges the Horse his head and winged side.
Aloft the Hydra lifts his speckled crest,
Showing the Goblet on his coiled breast.
All Sirius now emerges from below,
And glittering Argo with her broken prow.
If few conspicuous stars the Claws can boast,
And their dim light mid brighter gems is lost;
Together with them great Bootes rears
His head, and on his waist Arcturus bears.
While Argo spreads aloft her spangled sails,
And Hydra stretches forth her lengthened scales.
That nameless figure, kneeling in the sky,
Now lifts to sight his rising leg and thigh—
Ever he kneels—aloft his arm he flings,
As if to strike the Lyre's responsive strings.
Poor Labouring Man—he knows no night of rest—
Ere all his wearied limbs have gain'd the west
His morning course begins. Slow to the east
He lifts his giant form. His heaving breast
Rises with Scorpio; while his head below
Advances with the Archer's outstretch'd bow.
Lingering he struggles on the ocean's verge,
And slowly with three signs his limbs emerge.
Together with the Claws the diamonds bright,
That deck the northern Crown, arise to sight,
And sink the Swan and Pegasus in utter night.
Of Neptune's wrath Andromeda the fair
No longer mindful dips her golden hair.
When lo! to western wave the dauntless brute,
The fishy Cetus rolls, as in pursuit
Of his lost prey. And in the northern waves
Cepheus his head, and hand, and shoulder laves.
When Scorpio rises with the bright Antar,
Orion marks that signal from afar;
Nor turns to view the monster form again,
But hastens downward to the western main.
Pardon, chaste Dian, if I now relate,
As ancient bards have sung, Orion's fate.
He rashly dar'd, they say, on Chian strand
To touch thy virgin vest with impious hand,
What time invited by CEnopion came
The giant warrior in pursuit of game;
And slaughter'd heaps, and vacant forests told
The skill and vigour of the hunter bold.
A mightier beast, that could his might withstand,
From the cleft rock arose at thy command;
And this huge Scorpion with the hunter's blood
Aveng'd the harmless tenants of the wood.
Hence not in heaven unmindful of the fray
Orion shuns the Scorpion's blasting ray.
With him Andromeda and Cetus merge
Their total limbs deep in the briny surge.
Within the Arctic circle Cepheus glides—
His glittering girdle night from day divides.
Each eve his crowned head and breast he laves
Down to the waist in ocean's cooling waves.
Behind Andromeda her mother queen
With head immers'd, and legs aloft is seen,
A royal matron and a stately dame,
Like to a tumbler at some rustic game!
Unsightly posture—Will she now compare
With graceful Panope and Doris fair?
While headlong to the west all these descend,
Up from the east the lower parts ascend
Of Hydra's snaky length—the crown appears—
The Centaur's head—and victim which he bears.

When the great Archer Monster from below
Rising obtrudes his outstretch'd arm and bow;
Then mounting with him Serpentarius shines—
Round him its speckled coils the serpent twines.
Engonasin above revers'd appears—
First to the sky his feet and legs he rears—
Sweet soother of his toils the Lyre he brings,
Harmonious warbling with its golden strings.
The stars that Sirius and Orion boast
In deepest night to human ken are lost.
Auriga stands upon the watery verge—
Touches his naked feet the rising surge.
Capella on his shoulder shines afar,
To sailors oft an unpropitious star.
Cepheus now rises on the eastern sky,
And Perseus half is lost to human eye.

When rising next appears with butting horn
Half goat, half fish, the wintry Capricorn,
Auriga setting bears his Kids away;
And ocean quenches Procyon's feverish ray.
PHENOMENA.

Up from the east the Swan majestic sails—
Returning light Jove's mighty Eagle hails.

When dripping from his dreary watery bed
Aquarius lifts his cloud-environ'd head,
The rising Horse the starry pavement paws
With panting nostril and extended jaws.
Night drags the Centaur down to her domain—
Aloft his head and shoulders broad remain

Till from their native waves the Fishes glide;
Then the whole monster sinks beneath the tide.
Andromeda now gladly quits the main,
Where Neptune and th' offended Nereids reign.
Long time emerging from the briny waves,
One fetter'd hand in ocean still she laves.

When rises Aries with his golden head,
And couching rests as on a flowery bed,
Quench'd in the ocean sinks the Altar's fire—
To hapless sailors oft an omen dire.
And Perseus arm'd emerges from the tide,
As rushing to defend his captive bride.

When quits the Bull the portals of the east,
Rises, attendant on the lordly beast,
Auriga. On him rests Capella bright,
And rivals Aldebaran's ruby light:
PHENOMENA.

Not all his limbs the eastern ocean clear
Till in the heavens the brother Twins appear.
Now first Bootes sinks into the main,
Struggling through four long signs the shore to gain—
One hand he keeps above the arctic way,
As if intent to seize his grisly prey.

Dips Serpentarius both his feet and knees,
As mount the Twins above the eastern seas;
And high in their meridian splendour shine
The numerous stars on Cetus' fin and spine.
Rising Eridanus the sailors cheers,
And soon Orion's splendid belt appears:
By Him the watches of the night they mark,
Intent on Him they steer the fragile bark.
The Gods, propitious to man's feeble race,
These signs in heaven his guides and beacons place.
THE

DIOSEMEIA.

WHEN thou behold'st in evening's western sky
  Cynthia's thin face, scarce seen by mortal eye,
She then begins her monthly course to run
Through the whole annual circle of the sun.
Observe her on the fourth returning day:
She casts a shadow from her strengthen'd ray.
With half her lustre the eighth night she cheers,
And in eight more with beauty full appears.
Then, waning through the month's remaining space,
Each night she rises with diminish'd face.

To mark the lengthening and the shortening day,
To trace the sun throughout his annual way,
The zodiac signs suffice. They also show
The times ordain'd to plough, to plant, to sow.
These all are taught by great immortal Jove,
Who orders all below and all above.

The prudent mariner oft marks afar
The coming tempest by Bootes' star.
Some warn him, rising at the dusk of night,  
And some, forerunners of Aurora's light.

Across these starry plains the God of day  
Furrows with burning wheel his annual way.  
From east to west he runs his daily race—  
Rises and sets in no determin'd place.  
These things thou know'st; and ancient men have told,  
And trac'd in sacred characters of gold,  
How Sol and Luna part again to meet.  
When the great cycle nineteen years complete.  
Thou knowest all the stars that night rolls round  
With great Orion, and his rabid hound.  
Their influence some o'er Neptune's realm extend—  
Others to Jove belong; and oft portend  
Events forthcoming. These with care to scan  
The task and wisdom of the prudent man.  
Trust not in fragile bark, too rashly brave,  
The calm but treacherous bosom of the wave.  
Oftimes at eve the balmy breezes blow,  
And soft as milk the murmuring billows flow.  
But ere again the rosy-finger'd hours  
Unbar for Phoebus' car the golden doors,  
The wild winds roar—tumultuous ocean heaves,  
And hurls to mountain height his boiling waves.  
By wise precaution thou may'st haply save  
Thyself and comrades from a watery grave.
Yet oft the tempest rises unforeseen;
For short the foresight of the wisest men.
His secret plans in darkness Jove conceals,
Nor all his ways to mortal eye reveals.
Omnipotent is Jove—He may bestow
More wisdom on his creatures here below.
For while his power extends through endless space,
He smiles propitious on our favour'd race.
Gives to the moon her varying silvery light,
Man's guide and beacon through the wintry night.
Bids from the east each morn th' unwearied sun
Through the high heaven his giant course to run.
And various other signs to mortals sends—
Warns them of danger, and events portends.

Those, who the weather's various signs would trace,
Must watch fair Cynthia's ever-changeful face:
Mark her, when rising from the eastern waves—
Mark her, when in the west her limbs she laves.
If three days old her face be bright and clear,
No rain or stormy gale the sailors fear;
But if she rise with bright and blushing cheek,
The blustering winds the bending mast will shake.
If dull her face and blunt her horns appear
On the fourth day, a breeze or rain is near.
If on the third she move with horns direct,
Not pointing downward or to heaven erect,
The western wind expect; and drenching rain,  
If on the fourth her horns direct remain.  
If to the earth her upper horn she bend,  
Cold Boreas from the north his blast will send.  
If upward she extend it to the sky,  
Loud Notus with his blustering gale is nigh.  
When the fourth day around her orb is spread  
A circling ring of deep and murky red,  
Soon from his cave the god of storms will rise,  
Dashing with foamy wave the lowering skies.

And when fair Cynthia her full orb displays,  
Or when unveil'd to sight are half her rays,  
Then mark the various hues that paint her face,  
And thus the fickle weather's changes trace.  
If smile her pearly face benign and fair,  
Calm and serene will breathe the balmy air;  
If with deep blush her maiden cheek be red,  
Then boisterous wind the cautious sailors dread;  
If sullen blackness hang upon her brow,  
From clouds as black will rainy torrents flow.  
Not through the month their power these signs extend,  
But all their influence with the quarter end.

A halo oft fair Cynthia's face surrounds  
With single, double, or with triple bounds.  
If with one ring, and broken it appear,  
Sailors, beware—the driving gale is near.
Unbroken if it vanisheth away—
Serene the air, and smooth the tranquil sea.
The double halo boisterous weather brings,
And furious tempests follow triple rings.

These signs from *Cynthia’s* varying orb arise—
Forewarn the prudent, and direct the wise.

Next mark the features of the *God of Day*:
Most certain signs to mortals they convey,
When fresh he breaks the portals of the east,
And when his wearied coursers sink to rest.
If bright he rise, from speck and tarnish clear,
Throughout the day no rain or tempest fear.
If cloudless his full orb descend at night,
To-morrow’s sun will rise and shine as bright.
But if, returning to the eastern sky,
A hollow blackness on his centre lie;
Or north and south his lengthen’d beams extend:
These signs a stormy wind or rain portend.

Observe, if shorn of circling rays his head,
And o’er his face a veil of redness spread;
For o’er the plains the God of winds will sweep,
Lashing the troubled bosom of the deep.
If in a shroud of blackness he appear,
Forewarn’d take heed—a drenching rain is near.
If black and red their tints together blend,
And to his face a murky purple lend,
Soon will the wolfish wind tempestuous howl,
And the big cloud along the welkin roll.

If when the Sun begin his daily race,
Or ere he sink in ocean's cool embrace,
The rays that crown his head together bend,
And to one central point converging tend;
Or if by circling clouds he is opprest,
Hanging about him as a vapoury vest;
Or if before him mount a little cloud,
Veiling his rising beams in murky shroud:
By these forewarn'd, within the house remain,
Charg'd is the air with stores of pelting rain.

If Phœbus rising wide and broad appear,
And, as he mounts, contract his ample sphere,
Propitious sign—no rain or tempest near.
Propitious too, if after days of rain
With a pale face he seek the western main.

When through the day the angry welkin lowers,
Hid is the Sun and drench'd the earth with showers,
Catch if thou canst his last departing ray,
And gain prognostics of the following day.
If by black cloud eclips'd his orb is found
Shooting his scatter'd rays at random round,
Send not the traveller from thy roof away—
To-morrow shines no brighter than to-day.
DIOSEMEIA.

If with clear face into his watery bed,
Curtain'd with crimson clouds around his head,
He sink, that night no rain or tempest fear;
And morrow's sun will shine serene and clear.

If a black cloud eclipse the solar ray,
And sudden night usurp the place of day,
As when th' obtrusive moon's dark orb is seen
Forcing her way the sun and earth between;
Or if Aurora tinge with glowing red
The clouds, that float round Phoebus' rising head;
Farmer, rejoice—for soon refreshing rains
Will fill the pools, and quench the thirsty plains.

If ere his limbs he rear from ocean's bed
His foremost rays obscure and dark are spread
On th' horizon's edge; forewarn'd take heed—
These signs the rain, or blustering wind precede.

And weather foul expect, when thou canst trace
A baleful halo circling Phoebus' face
Of murky darkness, and approaching near:
If of two circles, fouler weather fear.

Mark when from eastern wave his rays emerge,
And ere he quench them in the western surge,
If near th' horizon ruddy clouds arise,
Mocking the solar orb in form and size:
If two such satellites the Sun attend,
Soon will impetuous rain from heaven descend.
If one, and north—the northern wind prevails:
If one, and south—expect the southern gales.

Mark all these signs with an attentive eye,
But scan with utmost care the western sky;
For sure prognostics those which Phoebus gives
As to their rest his wearied steeds he drives.

Now mark where high upon the zodiac line
The stars of lustre-lacking Cancer shine.
Near to this constellation's southern bound
Φhatne, a nebulous bright spot, is found:
On either side this cloud, nor distant far,
Glitters to north and south a little star.
Though not conspicuous, yet these two are fam'd,
The Οnoi by the ancient sages nam'd.
If when the sky around be bright and clear
Sudden from sight the Φhatne disappear,
And the two Οnoi north and south are seen
Ready to meet—no obstacle between—
The welkin soon will blacken with the rain,
And torrents rush along the thirsty plain.
If black the Φhatne, and the Οnoi clear,
Sure sign again that drenching showers are near.
And if the northern star be lost to sight,
While still the southern glitters fair and bright,
Notus will blow. But if the southern fail,
And clear the northern—Boreas will prevail.
And as the skies above, the waves below
Signs of the rising wind and tempest show:
When the long hollow rolling billows roar,
Breaking in froth upon the echoing shore;
And through the rugged rock and craggy steep
Whispers a murmuring sound, not loud but deep.

When screaming to the land the lone Hern flies,
And from the crag reiterates her cries;
Breasting the wind in flocks the Seamews sail,
And smooth their plumes against th' opposing gale;
And diving Cormorants their wings expand,
And tread—strange visitors—the solid land;
When from their briny couch the Wild Ducks soar,
And beat with clanging wings the echoing shore;
When gathering clouds are roll'd as drifting snow
In giant length along the mountain's brow;
When the light down, that crowns the thistles head,
On ocean's calm and glassy face is spread
Extending far and wide—the sailors hail
These signs, prophetic of the rising gale.

Thunder and Lightning in the summer show
The point from which the freshening breeze will blow.

Mark when athwart the ebon vault of night
The Meteors shoot their flash of vivid light—
From that same quarter will the wind arise,
And in like manner rush along the skies.
If numerous and from various points they blaze,
Darting across each other's path their rays,
From various points conflicting winds will sweep
In whirlwind fury o'er the troubled deep.

When from each quarter of the sky around
Blaze the fork'd lightnings, and the thunders sound,
Pity, oh, pity then the sailor brave,
Who ploughs in fragile bark the midnight wave.
The raging billows dash the welkin's brow—
Hisses the red bolt in the gulf below:
Jove on his head the pitiless tempest pours—
Beneath his feet the furious Neptune roars.

Refreshing showers or heavier rains are near,
When piled in fleecy heaps the clouds appear.

No weather fair expect, when Iris throws
Around the azure vault two painted bows;
When a bright star in night's blue vault is found,
Like a small sun by circling Halo bound;
When dip the Swallows as the pool they skim,
And water-fowls their ruffled plumage trim;
When loudly croak the tenants of the lake,
Unhappy victims of the hydra-snake;
When at the early dawn from murmuring throat
Lone Ololygo pours her dismal note;
When the hoarse Raven seeks the shallow waves—
Dips her black head—her wings, and body laves.
The Ox looks up and sniffs the coming showers,
E'er yet with pregnant clouds the welkin lowers:
Dragging from vaulted cave their eggs to view
Th' industrious Ants their ceaseless toil pursue;
While numerous insects creep along the wall,
And through the grass the slimy earth-worms crawl,
The black earth's entrails men these reptiles call.
Cackles the Hen, as sounds the dripping rill,
Combing her plumage with her crooked bill.

When flocks of Rooks or Daws in clouds arise,
Deafening the welkin with discordant cries;
When from their throats a gurgling note they strain,
And imitate big drops of falling rain;
When the Tame Duck her outstretch'd pinions shakes;
When the shrill screaming Hen the ocean seeks:
All these prognostics to the wise declare
Pregnant with rain, though now serene, the air.

When keen the Flies—a plague to man and beast—
Seek with proboscis sharp their bloody feast;
When in the wearisome dark wintry night
The flickering torches burn with sputtering light,
Now flaring far and wide—now sinking low—
While round their wicks the fungous tumours grow;
When on the hearth the burning Ember glows,
And numerous sparks around the Charcoal throws:
Mark well these signs, though trifling yet not vain,  
Prognostics sure of the impending rain.

If towers to sight uncap the mountain's head,  
While on its base a vapoury veil is spread;  
If on the ocean's bosom clouds appear,  
While the blue vault above is bright and clear;  
These signs by shepherds and by sailors seen,  
Give pleasing hope of days and nights serene.

When the blue sky and softly breathing air  
Afford of lengthen'd calm a promise fair,  
Then on these signs with watchful eye intent—  
Forewarn'd—secure—the coming storm prevent.  
And when with deep-charg'd clouds the air's opprest,  
Phatne, the spot that shines on Cancer's breast,  
Attentive mark: if bright the spot appear,  
Soon Phoebus smiles with face serene and clear,  
Nor the returning rain and tempest fear.

When burn the Lamps with soft and steady light,  
And the Owl softly murmurs through the night;  
And e'en the Raven from her varying throat  
Utters at eve a soft and joyous note:  
When from all quarters in the twilight shade  
The Rooks returning to th' accustom'd glade  
Their lofty rocking dormitories crowd,  
Clapping their gladsome wings and cawing loud—
Various and unharmonious notes they raise,
But all their notes are notes of joy and praise—
And when the Cranes their course unbroken steer,
Beating with clanging wings the echoing air:
These hail—prognostics sure of weather fair.

When the bright gems that night's black vault adorn
But faintly shine—of half their radiance shorn—
And not by cloud obscur'd, or dimm'd to sight
By the fine silvery veil of Cynthia's light; 310
But of themselves appear to faint away,
They warning give of a tempestuous day.

No weather calm expect, when floating high
Cloud rides o'er Cloud: when clamorous cry
The Geese: when through the night the Raven caws;
And chatter loud at even-tide the Daws.
When Sparrows ceaseless chirp at dawn of day,
And in their holes the Wren and Robin stay.

When charged with stormy matter lower the skies,
The busy Bee at home her labour plies; 320
Nor seeks the distant field and honied flower,
Returning laden'd with her golden store:
Their high aerial flight the Cranes suspend,
And to the earth in broken ranks descend.
When the dull fire emits no cheerful rays—
With lustre dimm'd the languid torches blaze,
And the light cobwebs float along the air;  
No symptoms these of weather calm and fair.

But why abroad to seek prognostics go,  
When ashes vile foretell the falling snow?  
When half consum'd the coals to cinders turn,  
And with a sputtering flame the torches burn.  
And hail expect, when the burnt cinders white  
With glowing heat send round a glaring light.

Not signless by the husbandman are seen  
The Ilex, and Lentiscus darkly green.  
If an abundant crop the Ilex bear,  
With blighting matter teems the vapoury air;  
If with unusual weight its branches groan,  
Then their light sheaves the hapless farmers moan.  
Thrice in the course of each revolving year  
On the Lentiscus flowers and fruit appear;  
And three convenient times to farmers show  
To break the fertile clod with crooked plough.  
If at each time this tree with fruit abound,  
Each time with stores will teem the fruitful ground.  
And like prognostic yields the humble Squill,  
Thrice flowering yearly by the purling rill.

When bounteous Autumn crowns the circling year,  
And fields and groves his russet livery wear;  
If from the earth the numerous Hornets rise,  
Sweeping a living whirlwind through the skies,
Then close on autumn's steps will winter stern
With blustering winds and chilling rains return.
Pity the wretch who shelterless remains,
And the keen blast—half-fed—half-clad—sustains.

The prudent husbandman, while autumn lasts,
His precious seed on the broad furrow casts,
And fearless marks the marshall'd Cranes on high,
Seeking in southern climes a milder sky.

Not so the idle farmer, who delays,
And trusts to treacherous winter's shorten'd days.
He hears their screams and clanging wings with fear,
Prognostics sure of frost-bound winter near.

When Autumn's days are nearly past away,
And Winter hastens to assume his sway,
Mark if the Kine and Sheep at eventide
Toss up their horned heads; with nostril wide,
Imbibe the northern breeze, and furious beat
The echoing meadows with their cloven feet;
For tyrant Winter comes with icy hand,
Heaping his snowy ridges on the land,
Blasting Pomona's hopes with shriveling frost,
While Ceres mourns her golden treasure lost.

No grateful sight to husbandmen appear
One or more Comets, with their blazing hair—
Forerunners of a parch'd and barren year.
When numerous Birds their island home forsake,
And to firm land their airy voyage make,
The ploughman, watching their ill-omened flight,
Fears for his golden fields a withering blight.
Not so the goatherd—he their advent hails,
As certain promise of o'erflowing pails.
And such is human life—the Fates ordain,
That one man's loss should be another's gain.
Coming events men anxious seek to know,
Pregnant of joy to some—to some of woe.

The shepherd, as a-field his charge he drives,
From his own flock prognostics oft derives.
When they impetuous seek the grassy plain,
He marks the advent of the storm and rain;
And when grave Rams, and Lambkins full of play,
Butt at each other's heads in mimic fray:
When the horn'd leaders stamp the dusty ground
With their fore-feet—all fours the young ones bound:
When homeward, as the shades of night descend,
Reluctantly and slow their way they wend,
Stray from the flock, and linger—one by one,
Heedless of shepherd's voice, and missive stone.

The herdsmen too, while yet the skies are fair,
Warn'd by their Bullocks, for the storm prepare:
When with rough tongue they lick their polished hoof—
When bellowing loud they seek the sheltering roof—
When from the yoke at close of day releas'd
On his right side recumbs the wearied beast:
When keenly pluck the Goats the oaken bough;
And deeply wallows in the mire the Sow.

When through the dismal night the lone Wolf howls;
Or when at eve around the house he prowls;
And, grown familiar, seeks to make his bed,
Careless of man, in some out-lying shed:
Then mark: ere thrice Aurora shall arise,
A horrid storm will sweep the blacken'd skies.

E'en Mice oftentimes prophetic are of rain,
Nor did our sires their auguries disdain:
When loudly piping with their voices shrill,
They frolick'd dancing on the downy hill.
Sign too of rain: his outstretch'd feet the Hound
Extends, and curves his belly to the ground.

Before the storm the Crab his briny home
Sidelong forsakes, and strives on land to roam:
The busy household Mice shake up with care
Their strawy beds, and for long sleep prepare.

Each sign observe: more sure when two agree;
Nor doubt th' event foretold by omens three.
Note well th' events of the preceding year,
And with the rising and the setting stars compare.
But chiefly look to Cynthia's varying face;
There surest signs of coming weather trace.
Observe when twice four days she veils her light, 430
Nor cheers with silvery ray the dreary night.

Mark these prognostics through the circling year,
And wisely for the rain—the wind—the storm prepare.
Skilful Aratus sings in easy vein
Th' eternal gems that deck th' ethereal plain—
The wandering Planets—and bright Stars that roll
In their fix'd orbits round the central pole.
Laud his great work—and rank him next to Jove,
Who adds fresh lustre to the Stars above.
NOTES ON THE PHENOMENA.

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5. Τοῦ γὰρ καὶ γένος ἐσμὲν ..........

5. And we his offspring are.

The ancient philosophers considered the proemium of Aratus, of which this passage forms a part, as applicable either μυθικῶς to Jove, Δημιουργὸς the Creator, or φυσικῶς to Jove, Ἀθηρ the air.

"Πρὸς τὸ, 'Πατὴρ ἀνδρῶν τε θεῶν τε.' εἰ γὰρ αὐτὸς ταύτα ἐνθυμούργησε πρὸς τὸ τοῖς ἀνθρώποις βιωφελές, αὐτῶν ἀν κληθείμην, αὐτῶν πατέρα καὶ δημιουργὸν ἐπιγραφόμενοι. Δύναται δὲ καὶ ἐπὶ τοῦ ἀέρος· αὐτῶν γὰρ ἐπισπώμενοι, ὥς εὗ αὐτός ζωμέν, ὅντος ζωητικοῦ, καὶ τῆς πνοῆς ἡμῶν αἰτίων."

(Scholiast.)

From these words, which St Paul quoted to the philosophers of Athens to prove the unity of the godhead, Manilius deduces an argument for the immortality of the soul:

"Jam nusquam natura latet: pervisimus omne,
Et capto potimur mundo, nostrumque parentem
Stirps sua perspicimus, genitique accedimus astris.
An dubium est habitare Deum sub pectore nostro?
In coelumque re dire animas coeloque venire?"

(Lib. iv. 883.)

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16. Αὐτὸς, καὶ προτέρη γενέθ.........

"Vide Scholiasten, qui heroes, Perseum, Oriona, aliosque intelligit. Nonnulli ad Jovem ipsum referunt, et explicant autòs καὶ προτέρη γενέθ, qui et ipse es et prima propago: cui quidem
interpretationi favet Grotius, quod Jupiter sit Sol nonnullis et πρωτογόνος. Mihi neutrum sufficit; sed potius arbitròr locum esse corruptum, et pro vulgato legendum esse 'Αυτοί καὶ πρωτερηγενεῖ, ita, ut totum commation jungatur cum antecedenti ἀνθρώποισι, et sensus exeat hic: salve pater, magna admiratio, magna hominibus utilitas, qui sunt et qui ante fuerunt.'

(Buhle.)

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22. .......... ἢχεῖ δ' ἀνάλαυντον ἀπάνη
Μεσονηώς γαϊν………………

21. Round a fix'd axis roll the starry skies:
Earth, even balanc'd, in the centre lies.

The ancients entertained the notion that the earth was a solid globe suspended in the centre of the heavenly bodies, which daily revolved round it on an imaginary axis. Manilius says:

"Quod nisi librato penderet pondere tellus,
Non ageret currus, mundi subeuntibus astris,
Phoebus ab occasu, et nunquam remearet ad ortus:
Nec matutinis fulgeret Lucifer horis,
Hesperos emenso dederat qui lumen Olympo."

"Aēra pergelidum tenuis didicitur axis,
Libratumque regit diverso cardine mundum:
Sidereus circa medium quem volvitur orbis,
Æthereosque rotat currus; immotus at ille
Austrinas arctos magni per inaniam mundi,
Perque ipsum terræ directus consttitit orbem."

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26. .......... δῶσ δὲ Μυθεῖς ἠχόναι,
"Ἀρκτοὶ ἀμα τροχώσει………………

25. Round this the BEARS, with head to head reverse,
And back to back, pursue their endless course.
Manillius closely imitates Aratus in his description of the constellations of the Bears:

"Summa tenente ejus miseris notissima nautis
Signa, per immensum cupidos ducentia pontum:
Majoremque Helice major decircinat arcum.
Septem illum stelle certantes lumine signant:
Qua duce per fluctus Graiae dant vela carinæ.
Angusto Cynosura brevis torquetur in orbe,
Quam spatio, tam luce minor: sed judice vincit
Majorem Tyrio. Poenis hæc certior auctor,
Non apparentem pelago quarentibus oram.
Nec paribus positæ sunt frontibus. Utraque caudam
Vergit in alterius rostrum, sequiturque sequentem."

(1. 301.)

Aratus prefaces the first fable which he introduces with εἰ ἔτεον ἄη: hereby shewing that he himself did not credit these fabulous notions, and cautioning his reader to distinguish between the astronomical truths and ornamental fictions of his poem. In like manner Germanicus says of the Goats in the constellation of Auriga:

........................................ "una putatur
Nutrix esse Jovis, si vere Jupiter infans
Ubera Creteæ mulsit fidissima capræ."

There were various fables respecting the constellations of the Bears. The one adopted by Aratus is, that Helice and Cynosyra, two nymphs of Mount Ida in Crete, nursed the infant Jove, when his mother Ops secreted him for a year among the Corybantes from the cruel intention of his father
Saturn, who received the kingdom of the world from his brother Titan on condition of not raising male children. Jupiter, in gratitude to his foster-nurses, gave them a place among the constellations.

37. Pleasing to sight is Helice’s bright team,
And Grecian sailors sail her guiding beam.

The Greeks guided their course by the constellation Helice; but the Phoenicians, who were more skilful in astronomy and navigation, derived their observations from Cynosyra, the lesser constellation.

It is in reference to this custom that Homer applies the epithet "'Elıkωπες," "observing Helice," to the Greek sailors:

\[
\text{Tēn mev γαρ συν νηθ θοθ ἐλίκωπες 'Αχαιοι}
\]
\[
\text{'Εκ Χρύσην πέμπουσιν.}
\]

(\text{Il. 1. 389.})

"Esse duas Arctos, quarum Cynosura vocatur
Sidoniis, Helicen Graia carina notat."

(Ovid.)

"Thales, qui diligenter de his rebus exquisivit et hanc primus Arcton appellavit, natione fuit Phœnix, ut Herodotus Milesius dicit. Igitur omnes, qui Peloponnesum incolunt priore utuntur Arcto. Phœnices autem, quam a suo inventore acceperunt, observant: et hae studiosius perspiciendo diligentius navigare existimantur et vere cam ab inventoris genere Phœniciæ appellant."

(Hyginus.)
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61. Κείνη που κεφαλή τῇ νήχεται, ἤχι περ ἄκραι
Μίσγονται δύσις τε καὶ ἄντολαι ἅλληρα.

53. His head upon the arctic wave he lays,
Where blend the western with the eastern rays.

The head, or Etanin the bright star in the head, of Draco touches the arctic circle. This circle on the ancient globe is the division between those constellations which set and those which never sink below the horizon: ὁ μὲν ἄρκτικος κύκλος ἀφορίζει τὰ δέλθεροι. (Proclus.) A star which lies upon this circle descends westerly to the horizon, and without disappearing rises easterly. 'Επ' ἄκροι τοῖς τῶν ὥκεανοι ὦδασιν ἐρχε-ται, οὗ γὰρ καταδύεται, ἀλλ' ὥς ὑπὲρ αὐτοὺς ἐπινήχεται.” (Sch.) Hence the Poets said, at this point the east and west meet to-gether:

"'Εγγὺς γὰρ νυκτὸς τε καὶ ἡματὸς εἰσὶ κέλευθοι."

(Od. 8. 86.)

............. Νῦξ τε καὶ ἡμέρα ἄσσον ἱώσαι.

(Hes. Theog. 748.)

This circle was, according to Aratus, 52° north, corresponding with the latitude of Athens 39°. It may here be remarked that Aratus uses the words ocean and sea as synonymous to the hori-zon. Virgil imitates Aratus in his description of the Dragon:

Maximus hic flexus sinuoso elabitur Anguis
Circum, terque duas in morem fluminis Arctos,
Arctos Oceani metuentes æquore tingi.

(Georg. 1. 244.)

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63. Τῆς δ' αὐτοῦ μογέωτε κυλίνδεται ἀνδρὶ ἑωκὸς
Εἴσωλον, τὸ μὲν οὗ τὶς ἐπίσταται ἀμφαδὼν εἰπεῖν,
Οὐδὲ τὴν κρῆματα κεῖνος πόνω χάλα μὲν αὐτῶς
ἘΝΤΟΔΙΝΑΙ ΚΑΛΕΟΝΤΑΙ.
57. **A Labouring Man** next rises to our sight:
   But what his task—or who this honour'd wight—
   No Poet tells. Upon his knee he bends,
   And hence his name *Engonasin* descends.

This constellation has very improperly been changed into that of Hercules. There can be little doubt that on the ancient celestial sphere it represented our first parent Adam after the fall, as I have before endeavoured to shew. (pp. 18, 19.)

Hyginus states that Eratosthenes called this constellation Hercules, but the alteration was not adopted by astronomers in the days of Augustus, as we learn from Manilius, who wrote his *Astronomicon* during that period:

"Proxima fulgentes arctos Boreamque rigentem
Nixa venit species genibus, sibi conscia causae."

(i. 321.)

Again:

"Nixa genu species et Graio nomine dicta
Engonasi, ignota facies sub origine constat."

(v. 645.)

This constellation is thus described by the Scholiast:

Πλησίον τῆς τοῦ δράκοντος κεφαλῆς ἄνδρὶ μογέωτι καὶ κάμνοντι ὁμοίος κυλίνδεται. Οὐ καθ’ αὐτὸν δὲ κυλίνδεται συγκαταφερομένῳ γαρ τῷ οὐρανῷ συγκαταφέρεται ἀλλὰ πρὸς τὴν θέσιν ἀποβλέπει καὶ γὰρ ὁ κλάσας καὶ καταπεσόν ἔστι, ὥς ἀπὸ τῶν καμάτων' περὶ δὲ τοῦ Ἐιδώλου τοῦτον, οὐδὲι ἵστορήσαι ἵσχυσεν, ἀλλὰ μονὸν τὸν ἐν γούνασιν αὐτὸ προσείπου, ἡγοῦν ἄνόμασαν. Ὁκλάζοντι δὲ ἐοικε κατὰ τὴν θέσιν. Ἐιδωλὼν δὲ ἐστὶν ἀφομοίωμα ἀνθρώπου.

According to Aratus he is in a kneeling position: his foot rests upon the head of Draco: he lifts his arms above the Lyre: his head reaches the head of Serpantarius, and he knows no rest; his rising in the east commencing immediately after his setting in the west. Horace probably alludes to the position of the
Lyre in the heavens before the Labouring Man, in his Ode, “Ad Lyram:”

“O decus Phoebi, et dapibus supremi
Grata testudo Jovis: O laborum
Dulce lenimen....................”

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71. Λύτου καρκίνος Στέφανος, τῶν ἀγανών ἑθήκε
Σέρις ἦμεν Δίωνυσος, ἀποδεχόμενη Ἀριάδνης.

63. Near shines that diamond crown, which Bacchus made
For faithful Ariadne.

Ariadne, daughter of Minos king of Crete, assisted Theseus in extricating himself from the labyrinth. He, according to his promise, married her and carried her away to Naxos, where he forsook her. Here Bacchus fell in love with her, and gave her a crown of seven diamonds, which after her death became a constellation.

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83. ..................... ὁ δὴ ἐμενεὶς εὐ ἐπαργρῶς
Ποσεῖδών ἐπιβάλλει μεγαθηρίον ἀμφιτρόπου
Σκορπίων....................... 71. His feet stamp Scorpio down—enormous beast—

Aratus here terms Scorpio, Μεγαθηρίον, Megatherion, a great beast, so called from extending with his claws through two signs, or 60 degrees of the ecliptic. Χηλᾶς, the claws, occupying one whole sign, or 30 degrees, are termed μεγάλας, (89.)

Νείσθι δὲ σπείρης μεγάλας ἐπιμαίει Χηλᾶς.
Beneath its coils the giant Claws are found.

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92. ..................... τῶν ρ' ἄνδρες ἐπιμελείον τι Βωτήν,
Οὐνέχ' ἀμαξαίνε ἐπαφόμενος εἶδεται Ἀρκτον.

85. Through the long day he drives the Arctic Wain,
And sinks reluctant in the western main.
NOTES.

"Tardus in occasu sequitur sua plaustra Bootes."

(Germanic. 458.)

The day of a star or constellation is the time of its being above, and the night the time of its being below the horizon. 'Ημάτιος δὲ υπέργειος. "Εωνυχος υπόγειος. (Schol. 580.) This constellation is above the horizon about sixteen hours; and never altogether sets, as the hand of Bootes extends beyond the arctic circle.

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97. ............ ἦ ρ' ἐν χερσὶ. φέρει στάχυν αἰγλήνετα.
89. In her left hand a golden spike she bears.

Aratus says the Virgin holds the spike in her hands: Germanicus and the scholiasts place it in her left hand:

".......................... cui plena sinistra
Fulget spica manu................."

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123. ὅπην χρύσεων πατέρες γενεῆν ἐλιπτότο
Χειροτέρην, ύμεὶς δὲ κακότερα τ' ἔξεισθε.

117. Ye of your sires a vile degenerate race,
Your offspring you their fathers will disgrace.

"Œtas parentum péjor avis tulit
Nos nequiores mox datusros
Progeniem vitiosiorem."  
(Hor. Od. 11. 7. 46.)

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137. Τῆς ὑπὲρ ἀμφοτέρων ὅμων εἰλισσεται ἀστήρ
Δεξιερῇ πτέρυγᾳ. Προτρυγητήρ δ' αὖτε καλεῖται.

137. Sparkle her golden wings with crystal light—
One gem they bear superlatively bright.
NOTES.

Προτρυγωτήρ, Protrugeter, or Prævindemiator, (Vindematrix), "The forerunner of the vintage," so called on account of its rising with the sun near the autumnal equinox.

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143. Οἶός οἱ πρὸ ποδῶν φέρεται καλὸς τε μέγας τε
Εἰς μὲν ὑπωμαίων, εἰς δ' ἐξώθεν κατίοντων,
"Ἀλλος δ' οὐραῖοι υπὸ γονᾶσιν"

141. One gem upon her snow-white shoulder shines:
One clasps the silken girdle of her loins:
One decks her bending knee........

Περὶ τῶν τῆς Παρθένου ἀστέρων διαλέγεται, ὅτι πλησίον τοῦ Προτρυγωτήρος εἰσίν ἀστερεῖς δ'. εἰς μὲν πρὸ τῶν ποδῶν αὐτῆς,
εἰς δὲ ὑπὲρ τῶν ὠμοι, εἰς δὲ ἀπὸ τῆς ὀσφύος, εἰς δὲ μεταξὺ
tῆς οὐρᾶς καὶ τῶν ὀπισθίων γονάτων τῆς μεγάλης "Ἀρκτοῦ.
(Scholiast.)

"Virginis at placidae prestanti lumine signat
Stella humeros, Helicen ignis non clarior ambit,
Quique micat caudâ, quique armum fulget ad ipsum,
Quique priora tenet vestigia, quique secunda
Clunibus hirsutis, et qui sua sidera reddit."
(Germanicus.)

"Non intellexit Aratum Germanicus; ille tres tantum stellas
refert, hic quinque. Recte hos versus interpretatus est Avienus:
Qua sunt prima ferae vestigia, præminet ignis;
Altera, qua pedibus regio est clunalibus, ardet
Stella itidem; genibusque debine se tertia promit."
(Buhle.)

According to this interpretation, the punctuation of the passage is thus:

Οἶός οἱ πρὸ ποδῶν φέρεται καλὸς τε μέγας τε
Εἰς μὲν ὑπωμαίων, εἰς δ' ἐξώθεν κατίοντων,
"Ἀλλος δ' οὐραῖοι υπὸ γονᾶσιν.

I have taken the three stars as those on the shoulder, loins, and knee of the Virgin.
NOTES.

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145. · · · · · · · · · · · διλ’ ἄρα πάντες
       Ἀπλόν, ἄλοθεν ἄλος ἀνωνυμία φορέονται.

145. Many less brilliant stars, by name unknown,
      Spangle her vestments, and her forehead crown.

From these stars was formed the new constellation **Coma Berenices**. The story is, that Berenice, the wife and sister of Evergetes, when her husband went upon a dangerous expedition, vowed all the hair of her head to the goddess Venus if she would restore him to her in safety. Upon his victorious return, her locks were cut off and dedicated to the Goddess in her temple at Cyprus. Upon these locks disappearing from the temple, Conon the astronomer, to flatter the queen, reported that Jupiter had stolen them away, and made them a constellation. Hence the lines of Callimachus:

"Ἡ δὲ Κόων ἐβλεψε ἐν ἕρι τον Βερωνίκης
Βόστρυχον, οὖ τ’ ἄρα κεῖνη πᾶσιν ἔθηκε θεοῖν.

According to some these stars originally belonged to the tail of the Lion.

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147. Κρατὶ δὲ οἱ Δίδυμοι μέσης δ’ ὑπὸ Καρκίνος εστὶ.
      Ποιοῖ δ’ ὀπισθότεροι Λέων ὑπὸ καλὰ φαινεῖ.

147. The Twins, beneath the muzzle of the Bear,
      Parted on earth, but join’d for ever here,
      Together shine: Her middle part below,
      The stars in Cancer few, and faintly glow:
      'Neath her hind feet, as rushing on his prey,
      The lordly Lion greets the God of day.

Aratus divides the greater Bear into three portions: her head is over Gemini, her middle parts over Cancer, and her hind legs over Leo; and we may add, her tail over Virgo; and thus from this well-known constellation the position of four signs of the Zodiac may be found.
NOTES.

Castor and Pollux were considered propitious stars to sailors: to this Horace alludes:

"Dicam et Alcidem, puerosque Ledæ, Hunc equis, illum superare pugnis Nobilem: quorum simul alba nautis Stella refultit, Defluuit saxis agitatus humor: Concidunt venti, fugiuntque nubes: Et minax, quod sic voluere, ponto Unda recumbit."

"'Oπισθότεροις" is preferable to the common reading "'ιπ' ἀμφιστέροις." (148.)

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152. Τήμος καὶ κελάδοντες 'Ετησίαι εὑρεί πόντῳ 'Αδρέου εμπίπτουσιν...............

159. ........................ o'er ocean sweep Th' Etesian winds................. ...

"Οί 'Ετησίαι ἀπὸ τῆς Κυνός εἰς ἐπιστολῆς ως ἐπὶ πλεῖστον εξήκοντα ἡμέρας πνεύσιν. ὡνομάζονται δὲ ὡς τοι, ἢ ὡς κατ' ἔτος πνέουσιν ταῖς τακταῖς αὐτῶν ἡμέραις παρὰ ἔτος ἢ τὸ ἐτεόν, διὰ τὸ μηδέποτε μεταβάλλειν αὐτοὺς, ὅταν ο' καιρὸς αὐτῶν ἔνστη. Καλώς δὲ τὸ μεγάλα σκάφη τότε χρήσιμα: τότε γαρ τὸ κῦμα μέγα, καὶ τὸ πνεύμα σφοδρόν."

(Scholiast.)

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156. Ἐλ δὲ τοι 'Ηνιοχόν τε καὶ ἄστέρας 'Ηνιοχοῖο Σκέπτεσθαι δοκεῖ.........................

165. Next the broad back and sinewy limbs appear Of fam'd Αὐρίγα.....................

Auriga is known under various names by the poets. Ericthonius, a king of Athens, is said to have been the first who yoked four horses to the chariot, on which account he was
honoured with a place among the constellations. Aratus and Manilius call him Heniochus, quasi ηνίαν ἔχων, "habenas-
tenens."

"Tum vicina ferens nixo vestigia tauro
Heniochus, studio mundumque et nomen adeptus;
Quem primum currus voluntatem Jupiter alto
Quadrijugis conspexit equis, coeloque sacravit."

(Man. i. 368.)

“Primus Ericthonius currus et quatuor ausus
Jungere equos.”

(Georg. iii. 113.)

Capella and the Hœdi were considered inauspicious stars to mariners:

“Hanc Auriga humero gerit, ac manus hœdos
Ostendit nautis inimicum sidus in undis.”

(Virg. Aen. ix.)

“Tum subeunt Hœdi claudentes sidere pontum
Nubibus........................

(Man. i. 372.)

“........................ neque
Tumultuosum sollicitat mare,
Nec sævos Arcturi cadentis
Impetus, aut orientis Hœdi.”

(Hor.)

Three of the Zodiac signs, Taurus, Gemini, and Cancer, rise backward, or looking to the east: the other nine rise forward to the west.

To this Ovid alludes, when Phoebus directs Phaeton:

“Per tamen adversi gradieris cornua Tauri.”
And Manillius:

"Quin tria signa novem serie conjuncta repugnant,
Et quasi seditio coelum tenet. Aspice Taurum
Clunibus, et Geminos pedibus, testudine Cancrum
Surgere: cum rectis orientur cetera membris.
Nec mirere moras, cum sol adversa per astra
Æstivum tardis attollat mensibus annum.

(II. 197.)

The sun is 187 days passing through Aries, Taurus, Gemini
Cancer, Leo, Virgo, from 21st of March to the 24th of Sep-
tember; and only 178 in passing through Libra, Scorpio, Sagitt-
tarius, Capricornus, Aquarius, Pisces. This the poet ascribes
to the opposition the sun meets with in these three constellations.
The ancient astronomers observed that the motion of the sun
was slower in the summer than in the winter months, and
might mark this phenomenon by the reversed position of these
three constellations on their celestial sphere.

In one passage, Virgil makes the year to commence when
the sun is in the constellation of the Bull:

"Candidus auratis aperit quum cornibus annum
Taurus, et adverso cedens Canis occidit astro."

(Georg. i. 216.)

In another to end when the sun is in Aquarius:

"quum frigidus olim
Jam cadit, extremeraque inrorat Aquarius anno."

(Georg. iii. 303.)

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172. οὐδὲ τοι ἀντως
Νῦκουστοι Ύδης, ταῖ μὲν ὧ ἐπὶ παντὶ μετώπῳ
Ταῦρου βεβλάται..............

184. With sparkling gems his brow the Hyads tire.

Manillius, in allusion to the Hyades and Pleiades, terms the
Bull, "dives puellis," "rich in virgins."

(iv. 522.)
NOTES.

According to Hesiod there were five Hyads:

"...............άμφα: Χαρίτεσαν ὀμοίαν,
Φαισώλη, ἵδε Κορωνίς, ἑῳστεφανός τε Κλείεια,
Φαῖω θ ἀμερόεσσα, καὶ Ἐυδόρη ταυτότερας:
"Ας 'Υάδας καλέοντιν ἐπὶ χθωνι φολ' ἄνθρωπων."

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176. .......................συνεληλαμένου δὲ φέρονται.
'Αλλ' ἄει Ταῦρος προφερέστερος 'Ηνόχωο
Εἰς ἑτέρην καταβήναι, ὀμήλωσι περ ἀνέλθων.

187. The beast before him to the west descends—
Together with him from the east ascends.

The correctness of this statement of Aratus is best seen by consulting the celestial globe. It may here be observed that in any reference to the sphere, the latitude of Athens, which was 38° north, must be adopted.

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179. Οὐδ' ᾧρα Κηφῆος μογερὸν γένος Ιασίδαιο
Αὖτος ἄρητον κατακείστεται.

189. Unhappy CEPHEUS, though of race divine!

The story of Cepheus and his family supply no less than six constellations to the celestial globe: that is to say, the Greek poets have appropriated so many of the figures on the ancient sphere to their history: Cepheus, Cassiopeia, Andromeda, Perseus, Pegasus, and Cetus. The following is the poetical version of it:

Cepheus king of Æthiopia had a daughter, Andromeda, by his wife Cassiopeia. Neptune sent a sea-monster, Cetus, to ravage his country, because Cassiopeia had boasted herself fairer than the Nereides. An oracle of Jupiter declared that nothing could appease the resentment of Neptune, unless Andromeda was exposed to the sea-monster. She was accordingly chained naked
to a rock; but, as the monster was going to devour her, Perseus returned from the conquest of the Gorgons on the winged horse Pegasus, destroyed the monster, rescued Andromeda, and for his reward obtained her in marriage. The story divested of its poetical embellishments is this: Some commander of a ship, named "the Cetus," "the Whale," or "Great Fish,"* was about to carry away Andromeda, the daughter of Cepheus and Cassiopeia, when Perseus arrived from an expedition against the Gorgons in his ship "Pegasus," "the Flying Horse," and engaging in a naval contest with his rival, overcame him, delivered Andromeda, and as a reward for his gallantry obtained her in marriage. According to Pliny (Bk. 5. Ch. 21.) the scene of this adventure lay at Joppa in Judea.

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186. Αὐτὰρ ἀπὸ ζώνῃς ὀλέγον κε μεταβλέψειας
Πρώτην ἱμενος καμηπὴν σκυλιοί δράκαντος.

195. Near to the studded girdle of his waist
Lies the huge coil of Draco's speckled breast.

On our modern globes it is the second, and not the first coil of Draco, which is placed near the waist of Cepheus.

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192. Οὐριδέ εἴλιδε δύρην ἐντοσθ' ἀραρίων
Διελθ' ἐπιπλήσουσαν ἀνάκρούσων ὀχίως,
Τοῖν τοι μουναξ ὑποκείμενοι ἱδαλλοῦνται
Ἀστερες.

201. When the bifolding door the warder bars,
His crooked key depict her glittering stars.

* "Navis Κῆτος dicta que (προτομήν) protomen ceti in prora præferebat
η κητόπρωτος. Eodem naves κητίδες et κητηνai dicebantur. (Hofm.)

"Κητηνη, πλοῖον μέγα ως κῆτος." (Hesych.)

Virgil adopts "PRISTIS," the Latin of Κῆτος, for the name of one of his ships:

"Velocem Mnæseus agit acri remige PRISTIN." (Æn. v. 116.)
NOTES.

The Scholiasts, Germanicus, Festus Avienus, and with them Scaliger and Salmasius, consider that the poet alludes to the Laconian key. Huetius maintains that it is not the Laconian key, but a more ancient one in the form of a sickle; such as Homer gives to Penelope, ἐν καμπά ψα κληθος, according to Eustathius "δεπεπανοειδη," "sickle-shaped;" and he confirms his opinion by a figure.

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197. Λυπου γαρ κατεινο τυλίνθεται άινον δαλμα
'Ανδρομέδης.

205. Near, young ANDROMEDA, more splendid far.

The description of Andromeda, and of her deliverance from the sea-monster by Perseus, is one of the most beautiful passages in the Astronomicon of Manilius:

"Hanc quondam poenae dirorum culpa parentum
Prodidit, infestus totis cum finibus omnis
Incubuit pontus, timuit Maurusia tellus.
Proposita est merces, vesano dedere ponto
Andromedan, teneros ut bellua manderet artus.
Hic Hymenaeus erat: solataque publica damna
Privatis lacrymis ornatur victima poene,
Induiturque sinus non hae ad vota paratos,
NOTES.

Virginis et vivæ rapitur sine funere funus.
Ac simul infesti ventum est ad littora ponti,
Mollia per duras panduntur brachia cautes:
Et cruce virginea moritura puella pepedit.
Servatur tamen in poena cultusque pudorique.
Supplicia ipsa decent. Nivea cervice reclinis
Molliter ipsa, sua custos est ipsa figura.
Defluxere sinus humerus, fugitque lacertos
Vestis, et effusi scapulis lusere capilli.
Te circum Alcyones pennis planxere volantes,
Fleueruntque tuos miserando carmine casus,
Et tibi contextas umbram fecere per alas.
Ad tua sustinuit fluctus spectacula pontus,
Assuetasque sibi desit perfundere ripae.
Extulit et liquido Nereis ab æquore vultus;
Et casus miserata tuos roravit et undas.
Ipsa, levi flatu refovens pendentia membra,
Aura per extremas resonavit fleibile rupes.
Tandem Gorgonei victorem Perseæ monstri
Felix illa dies redeuntem ad littora duxit.
Isque, ubi pendentem vidit de rupe puellam,
Diriguit, facies quem non stupefecerat hostis.
Vixque manu spolium tenuit: victorque Medusæ
Victus in Adromeda est. Jam cautibus invidet ipsis,
Felicesque vocat, teneant quæ membra, catenas.
At postquam poena causam cognovit ab ipsa,
Destinat in thalamos per bellum vadere ponti,
Altera si Gorgo veniat, non territus ire.
Concitat aërios cursus, flentesque parentes
Promissu vitæ recreat, pactusque maritum
Ad littus remeat. Gravidus jam surgere pontus
Coeperat, et longo fugiēbant aegmine fluctus
Impellentis onus monstri. Caput eminet undas
Scandentis, pelagusque vomit. Circumsonat æquor
Dentibus, inque ipso rapidum mare navigat ore.
Hinc vasti surgunt immensis torquibus orbes,
Tergaque consumunt pelagus. Sonat undique Syrtis,
NOTES.

Atque ipsi metuunt montes, scopolique ruentem.
Infelix virgo, quamvis sub vindice tanto,
Quae tua tunc fuerat facies? quam fugit in auras
Spiritus? ut toto caruerunt sanguine membra?
Cum tua fata cavis e rupibus ipsa videres,
Adnantemque tibi pœnam, pelagusque ferentem,
Quantula præda maris? Plausis hic subvolat alis
Perseus, et coelo pendens sic fertur in hostem,
Gorgoneo tinctum defigens sanguine ferrum.
Illa subit contra, versamque a gurgite frontem
Erigit, et tortis ininitens orbibus alte
Emicat, ac toto sublimis corpore fertur.
Sed quantum illa subit, seque ejaculata profundo est,
Is tantum revolat, laxumque per sethera ludit
Perseus, et Ceti subeuntis verberatora.
Nec cedit tamen illa viro, sed seavit in auras
Morsibus, et vani crepitant sine vulnere dentes.
Efflat et in coelum pelagus, mergitque volantem
Sanguineis undis, pontumque extollit in astra.
Spectabat pugnam pugnandi causa puella;
Jamque oblita sui, metuit pro vindice tali
Suspirans, animoque magis quam corpore pendet.
Tandem confossiss subsedit bellua membris,
Plena maris, summasque iterum remeavit ad undas,
Et magnum vasto contexit corpore pontum,
Tunc quoque terribilis, nec virginis ore videnda.”

(Lib. v. 640–611.)

Ovid represents Andromeda as of a dark complexion:

“Candida si non sum, placuit Cepheia Perseo
Andromede, patriæ fusca colore suæ.”

(Sapp. ad Phaon.)

Manillius describes her as fair, “nivea cervice.”
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206. ξυνὸς δ᾽ ἐπιλάμπεται ἄστήρ,
Τοῦ μὲν, ἐπ’ ὀμφαλῷ τῆς δ’, ἔχαστόωντι καρῆντι.

213. So close they meet, one brilliant star they share,
His body it adorns—and decks her hair.

The bright star Alpherat on the head of Andomeda touches
the extremity of the figure of Pegasus, and is one of the stars
in the square, by which this constellation is distinguished.

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220. οἱ δὲ νομὴς
Πρῶτοι κείνο ποτὸν διεψήμωσαν ῥῆπτον κρήνην.

227. .... And hence the name
Of Hippocrene........

"Ἡποκρήνη," "Hippocrene," "the fountain of the horse."

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225. Αὐτὸν καὶ Κριῶ ὁμοταῦ ἐσι κέλευθοι.

233. The furious Ram pursues a swift career.

The Ram lying on the equator, the centre of the sphere,
describes the greatest possible diurnal circle, and in the same
time as the more northern constellations run their smaller circles.
Hence Aratus says, ὁμοταῦ ἐσι κέλευθοι. The Ram, being a
very important constellation, as the sun enters it at the vernal
equinox, and containing no very bright stars, the poet marks
its position in the heavens by other more conspicuous stars.
He is to be found, he says, to the south of Deltoton, the Tri-
gle, and under the bright star Mirach in the girdle of Andro-
meda; he runs also in the same path as Chele, the claws, and
the belt of Orion, both which lie on the equator.
The Ram was depicted as recumbent, and looking backward to the east. Manilius represents him in one place as admiring his own golden fleece:

"Et sua respiciens aurato vellera tergo." (11. 214.)

and in another as looking with astonishment to see the Bull rising backward way.

"Aurato princeps Aries in vellere fulgens
Respicit, admirans aversum surgere Taurum." (1. 264.)

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259. Αὐτὰρ δ’ ἐν βορέιῳ φέρεται περιμήκετος Ἄλων.

256. His giant strides the blue vault climb.

"Ὁ δὲ ἐν τῷ βορείῳ ἐστὶ κύκλῳ τῶν ἄλλων μείζων κατὰ τὴν φαντασίαν, τῆς τε Κασσιπείας, καὶ αὐτοῦ τοῦ Κηφέως. (Sch.)

Aratus applies the epithet "περιμήκετος," "very long," to Perseus, as his right hand reaches to Cassiopeia's chair, and his left foot beyond the Pleiades.

"Moles ipsa viri satie est testata parentem." (Germanicus.)

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252. .................... tà δ' ἐν ποσίν ολα διώκων
"Ἰχνα μηκύνει, κεκοιμημένος εν Δι ταπρί.

256. ............and move
A cloud of dust in heaven..........

The poet represents Perseus as moving a dust in heaven. This may be expressive of the great haste with which he is rushing to the deliverance of Andromeda, in imitation of Homer's Κοινῶν πεδίον; but more probably alludes to his position in
the heavens, one of his feet being within and the other without the milky way.

"Pulverulentus uti de terrâ elapsu' repente." (Cicero.)

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254. Ἄγχι δὲ οἴ σκαῖς ἐπεγούνιδος ἦλθα πᾶσαι
Πληιάδες φαρέωνται.

259. Near his left knee the Pleiads next are roll'd.

Aratus places the Pleiads as a constellation near the left knee of Perseus: in our modern globes they lie in the Bull, under his left foot. Manilius places them in the Bull:

"Aversus venit in coelum, divesque puellis,
Pleiadum parvo referens glomeramine sidus." (iv. 522.)

The Pleiads were called by the Romans "Vergiliae." They were objects of much observation to the ancients, rising in spring with the sun, and in autumn setting with that luminary.

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257. Ἐπτάποροι δὴ ταῖ γε μετ' ἀνθρώπων οὐδένται,
Εὐ οἷς περ ἐὖσαι ἐπόλυμαι ὑβελομοῖσιν.

263. Their number seven, though some men fondly say,
And Poets feign, that one has pass'd away.

The poet alludes to the notion that one of the Pleiads had perished; and which he states to be a mere fable. Its origin is very evident. The astronomers of Assyria, through their clear atmosphere, could distinguish seven stars in this constellation, and figured seven on their sphere; but the Greeks, unable to see more than six, invented the fable of one of them having vanished away.
268. Kai Χέλως, δὴ διήγη τὴν δ' ἀρ' ἔτι καὶ παρὰ λίκυφ
'Ἐρρεῖας ἐτάφησε.

275. When the mute shell, by cords elastic bound
Made vocal, warbled forth harmonious sound.

Mercury is said to have discovered musical sounds, and to
have invented the Lyre, which Jove immediately raised to heaven;
that is, upon musical instruments being invented, they were im-
mediately employed in the temples in the services of the Gods.
Thus Horace:

"Mercuri, nam te docilis magistro
Movit Amphion lapides canendo,
Tuque testudo, resonare septem
Callida nervis:
Nec loquax olim, neque grata, nunc et
Divitum mensis, et amica templis,
Dic modos..............

The poet properly applies the epithet αἰόλος, "variegated,"
"mottled," to the Swan. It lies in that part of the heavens
where the milky way forks into two parts. Its body, tail, neck,
central part of right wing, and part of the head, lie on the milky
way, its other parts without. Hence it is completely mottled.

Longinus cites this passage of Aratus to shew the striking
effect of a change of persons in making the hearer think him-
self really present and concerned in dangers, when only attentive to the recital of them.

"Ἐναγώνιος ὁ ὁμοίως καὶ ἡ τῶν προσεύχοντων ἀντιμετάθεσις, καὶ πολλάκις ἐν μέσοις τοῖς κυνθώνοις ποιοῦσα τὸν ἀκροατήν δοκεῖν στρέφεσθαι.

'Ὁ Ἀρατός:
Μὴ κείνη ἐν Ῥ ημι περικλύζων θαλάσσης."

(Sect. xxvi.)

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299. ............. ὄλιγον δὲ διὰ θῖλον αἰθ' ἐρύκει.

311. ............. a plank of wood

'Twixt them and Stygian Pluto's drear abode.

"Munit et hos breve lignum, et fata instantia pellit;
Nam tantum a letos, quantum rate fluctibus absunt."

(Germanicus.)

Longinus, having quoted the description of a storm from Homer (II. 15. 624), remarks, that Aratus has imitated the passage; and in these words, "ὁλίγον δὲ διὰ θῖλον αἰθ' ἐρύκει," "a slender plank preserves them from Hades," instead of increasing the terrible, has lessened it, and refined it away; putting a limit to their danger by saying "ἐθιλον αἰθ' ἐρύκει;," "the plank preserves them from Hades." While Homer puts no bounds to the terrible, but represents the sailors continually only not swallowed up by each wave.

The following is the passage from Homer:

"Ἐν ὅ ἐπεσ', ως ὅτε κῦμα θοῦ ἐν νη ὄσησι
Λάβρων υπαὶ νεφών, ἀνεμοτρεφές: ἥ δὲ τε πᾶσα
"Ἀχνὴ ὑπεκρύφθη, ἀνέμοιο δὲ δεινὸς ἀγῆς
'Ιστίω ἐμβρέμεται: τρομέονσι δὲ τε φρένα ναῦται
Δειδῶτες: τυτθὸν γαρ ὧν ἐκ θανάτου φέρονται."
316. Δελφίς δ' οὐ μάλη πολλὸς ἐπιτρέχει αἰγοκερῆ,
Μεσοδέν ήφορείς: τὰ δὲ οἱ περὶ τέσσαρα κεῖται
Γλήνεα, παρβολάδην δύο, πάρ δύο πεπτηώτα.

331. Where Capricorn his horned forehead rears,
Not distant far his course the Dolphin steers—

With four fair stars he decks the summer skies,
Sparkling and soft as maiden's beauteous eyes.

The Dolphin was considered by the ancients as the most remarkable of fishes. See Pliny, Nat. Hist. ix. viii.

"Velocissimum omnium animalium, non solum marinorum, est Delphinus, ocyor voluecre, acrior telo. . . . . . . Delphinus non homini tantum amicum animal, verum et musicæ arti, mulcetur symphonie cantu, et praecipue hydraulico sono. Hominem non expavescit, ut alienum: obviam navigis venit, alludit exultans, certat etiam, et quamvis plena preterit vela."

"Tum quoque de ponto surgit Delphinus ad astra,
Oceani cælique decus, per utrumque sacratus."

(Manil. 1. 353.)

The fable attached to the constellation of the Dolphin is this: Neptune desired to take to wife Amphitrite, who had made a vow of perpetual celibacy, upon which she fled from him, and secreted herself among the islands of Atlas. The amorous god sent various messengers in search of her, and among them the Dolphin, who at last found her, and persuaded her to return to Neptune. The god rewarded the obedient and active fish by placing him among the constellations.

The Dolphin, no doubt, was the sign and name of a fast-sailing vessel.

Aratus terms the four stars in this constellation, which form an irregular parallelogram, "Γλήνεα," "Glenea." Γλήνη is "the eye," or "image in the pupil of the eye," hence also "a young maiden."

"ποιητικῶς δὲ εἶπε τοὺς ἀστέρας γλήνεα· γλήνη γάρ ἐστιν ἡ ἐν τῷ ὀφθαλμῷ κόρη." 

(Scholiast.)
Orion was a celebrated constellation from the splendour of his stars, and also from his position in the heavens:

Cernere vicinum Geminis licet Oriona
In magnam coeli pandentem brachia partem;
Nec minus extento surgentem ad sidera passu:
Singula fulgentes humeros cui lumina signant.
Et tribus obliquis demissus ducitur ensis.
At caput Orion excelso immensus Olympo
Per tria subducto signatur lumina vultu:
Non quod clara minus, sed quod magis illa reecedant.

(Max. i. 395.)

Maximus Orion magnumque amplexus Olympum.

(Max. v. 58.)

On the face of Orion are three small stars, to which Manillius alludes:

“Per tria subducto signatur lumina vultu.”

“Orion is distinguished by three stars on his face bent backward:” in this position Orion was drawn on the ancient sphere: his head bent backward, so that his face was visible, although his back was turned to the spectator. These three stars were called JUGULA, and hence the constellation itself bore the name of JUGULA. They were important stars with the ancient astronomers, rising with the sun on the day of the summer solstice. (Vid. Pet. Dan. Huet. animadver. in Manil. Astron. i. 174.) (See note v. 636.)
Homer styles Sirius (this name is as often applied to the constellation itself as to the bright star in the mouth of the Dog) "κόντα Ωρίωνος," "the dog of Orion." Aratus applies the epithet "ποκιός," "mottled," to the dog, for the same reason as he does alóσον to "Olor," the Swan. The back of the dog lies on the milky-way, his other parts without it.

"Subsequitur rapido contenta canicula cursu,
Qua nullum terris violentius advenit astrum.
Hanc qui surgentem, primo cum redditur ortu,
Montis ab excelso speculantur vertex Tauri,
Proventus frugum varios, et tempora discunt;
Quæque valetudo veniatur, concordia quanta.
Bella facit, pacemque refert, varieque revertens
Sic movet, ut vidit, mundum, vultuque gubernat.
Magnæ fides hoc posse, color, cursusque micantis
In radios: vix sole minor; nisi quod procul hærens
Frigida cœrulofo contorquet lumina vultu.
Cetera vincuntur specie, nec clarius astrum
tingitur oceano, cœlumve revisit ab undis."  

(Man. 1. 403.)

Horace, in his ode "Ad fontem Blandusœ," says:

"Te flagrantis atrox hora Caniculae
Nescit tangere." .................

Sirius, when in conjunction with the Sun, was considered the cause of the excessive heat of the Dog-days; and when in opposition, "procul hærens," as occasioning the severe cold of the nights during the winter.

"Non secus ac liquidâ si quando nocte cometae
Sanguinei lugubre rubent; aut Sirius ardor:
Ille sinit morbosque feren mortalibus agris
Nascitur, et laevo contristat lumine cœlum."  

(En. 10. 275.)
NOTES.

331. ......................... ὃς ὑπὲρ μᾶλλον
'Οξία σειρών καὶ μὲν καλέσων ἀνθρωποι
Σείριον.

351. Men call him Sirius—for his blasting breath
Dries mortals up in pestilence and death.

Sirius is not derived, as Aratus and the Scholiasts imply, from a Greek verb; but the Greek verbs, "Σειρῶν," "to dry up:"
"Σειρωῖα," "to burn by the rays of the sun, or of a star;" and
Σαίρω, "Hio," "to open the mouth as an angry dog," are de-
rived from Σείριον, the Greek form of ἔφω, a Phœnician word, signifying, "princeps," "chief," "the chief star," "a title of the
sun."

339. ......................... αὐτὰρ ὑπὲρ αἰεὶ
Σείριον ἐξόπιθεν φέρεται μετίοιτο ἐσκόλω.

359. ......................the HARE before him flies—
Close he pursues her through the southern skies.

Manilliur says that those men who are born under the in-
fluence of Sirius, are greatly addicted to the sports of the field, and
adds:
"Nec tales mirere artes sub sidere tali;
Cernis, ut ipsum etiam sidus venetur in astra?
Prægressum quærit leporem comprehendere cursu."
(v. 231.)

342. 'Η δὲ Κυνὸς μεγάλοιο κατ' ὄψιν ἔλεγεν Ἂργῳ
Προμῦθευς' ὅτι γὰρ τῇ γε κατὰ χρέος εἶναι κέλευθοι,
'Αλλ' ἔπιθεν φέρεται τετραμμένη, οἷα καὶ αὐταί
Νῆα, ὅταν δὴ ναῦται ἐπιτρέψωσι κορώνῃ,
"Ορμον ἐσβρόχμενοι.....................

363. Near to the quarters of Orion's hound
Steers through the azure vault her nightly round
NOTES.

The far-fam'd ship, in which bold Jason's crew
First dar'd dark ocean's trackless path pursue.
When a swift vessel ploughs her watery way,
With forward prow she meets the dashing spray;
But when deep laden back from distant land
She comes, with forward poop a clamorous band
Of joyous sailors haul her to the strand.
And thus with forward poop, and prow reverse,
The heavenly Argo steers her westward course.

The celestial Argo is not borne through the heavens in the usual manner of a sailing vessel with the prow forward, but with the poop: in the manner of a vessel being drawn to land. Virgil frequently alludes to this custom:

"Obvertunt pelago proras: tum dente tenaci
Ancora fundabat naves."

(AEn. vi. 3.)

"Continuo puppes abrupunt vincula ripis,
Delphinumque modo demersis æquora rostris
Ima petunt. ............................

(AEn. ix. 118.)

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353. Τὴν δὲ καὶ οὐκ ὀλέγον περ ἀπόπροθε πεπτημών
'Ανδρομέδην μέγα Κῆτος ἐπερχόμενον κατεπέμει.

376. Mark where the savage Cetus couching eyes
Andromeda, secure in northern skies.

"Laeva sub extremis consurgunt sidera Ceti
Piscibus Andromedam ponto cæloque sequentis."

(Man. v. 656.)

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373. ................. τὰ τις ἄνδρῶν οὐκέτι ἐόντων
'Εφράσατ' ἦδ' ἐνοίησεν ἀπαυγ' ὀνομαστὶ καλέσαι,
"Ηλίθια μορφώσασα..........................

398. These heavenly signs some wise and ancient man,
Skilful and apt the realms of night to scan,
Devis'd and figur'd:.............................
There is a beautiful passage in Manilius respecting the constellations, in which the Stoic Philosopher appeals to the beauty, order, and immutability of the heavenly bodies as a refutation of the atheistical notions of Democritus and Epicurus:

"Non varios obitus norunt, variosque recursus:
Certae sed in proprias oriuntur singula luces,
Natalesque suos occasumque ordine servant.
Nec quicquid in tantâ magis est mirabile mole,
Quam ratio, et certis quod legibus omnia parent.
Nusquam turba nocet, nihil ullis partibus errat,
Laxius aut brevius mutatove ordine fertur.
Quid tam confusum specie, quid tam vice certum est?
Ac mihi tam præsens ratio nonulla videtur,
Qua pateat mundum divino numine verti,
Atque ipsum esse Deum: nec forte coisse magistrâ;
Ut voluit credi, qui primus mœnia mundi
Seminibus struxit minimis, inque illa resolvit:
E quis et maria et terras et sidera coeli,
Ætheraque immensis fabricantem finibus orbes
Solventemque alios constare; et cuncta reverti
In sua principia, et rerum mutare figuram.
Si foris ista dedit nobis forsa ipsa gubernet.
At cur dispositis vicibus consurgere signa,
Et velut imperio præscriptos reddere cursus,
Cernimus; ac nullis propterantibus ut nullas relinquit?
Cur eadem aestivas exornant sidera noctes
Semper, et hybernas eadem? certamque figuram
Quisque dies reddit mundo, certamque relinquit?
Jam tum, cum Graæ verterunt Pergama gentes,
Arctos et Orion adversis frontibus ibant:
Hæc contenta suos in vertice flectere gyros;
Ille ex diverso vertentem surgere contra
Obvius, et notio semper decurrere mundo.
Temporaque obscure noctis dependere signis
Jam poterant: coelumque suas distinxerat horas.
Quot post excidium Troiae sunt eruta regna?"
NOTES.

Quot capti populi! quoties fortuna per orbem
Servitium, imperiumque tuit, varieque revertit?
Trojanos cineres in quantum oblitae refovit
Imperium? fatis Asia jam Graecia pressa est.
Sæcula dinumerare piget, quotiesque recurrens
Lustravit mundum vario sol igneus orbe.
Omnia mortali mutatur lege creata.
Nec se cognoscunt terræ vertentibus annis.
At manet incolmis mundus, suaque omnia servat;
Quæ nec longa dies anget, minuitve senectus;
Idem semper erit, quoniam semper fuit idem.
Non alium videre patres, aliumve nepotes
Aspicient. DEUS EST, qui non mutatur in ævo.

(1. 482—530.)

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397. Ἐς μὲν ὦν ἀμφότεροι ποιῶν καλὸς τε μέγας τε
'Ὑδρόχοον' ὅ δὲ κυωνέων ὑπὸ Χῆνος οὐρη.

410. But two alone beyond the others shine:
This on the Fish's jaw—that on the Monster's spine.

FOMALHAUT, (FUMAHAUT, Grot.) a bright star of the first
magnitude, lies beneath the feet of Aquarius, at the end of
the stream which flows from his urn; and on the lower jaw of
the Southern Fish, which is turned up with its back to the
southern pole.

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399. ......................... δλιγοι γίμεν ἄλοι
Νειδοθεν Τοξενῆρος ὑπὸ προτέρους πόδεσι
Διωτοῖ κύκλῳ περιγγέες ελιασθονται.

412. Glitters the forefeet of the Archer near
The SOUTHERN CROWN.........................

It is doubtful whether Aratus in this passage alludes to the
Southern Crown.
Cicero renders the passage thus:

"Hic alia evolitant parvo cum lumine clare,
Atque priora pedum subeunt vestigia magni
Arcitenentis, et obscure sine nomine cadunt."

Festus Avienus thus:

"... qua se vestigia prima
Cornipedis simulans, circumvolvuntur Olympos,
Quis face sub tenui tenebrosus marceat ignis."

Germanicus thus:

"... "Est et sine honore Corona
Ante Sagittiferi paulum pernici crura."

Grotius conjectures that Cicero and Germanicus read ἄγ-
νέτοι for δινέτοι. Manillius does not mention CORONA among
the southern constellations.

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402. Αὐτὰρ ὑπ᾿ αἰθωμένῳ κέντρῳ τέρας μεγάλου
Σκορπίων ἄγχη νότων Ὀυτήριων αἰωρείται.

415. Where Scorpio to the south his claw expands,
Burning with constant fire an ALTAR stands.

This constellation was undoubtedly a memorial of the altar
and sacrifice of Noah after the deluge. (Gen. viii. 20—22.) The
fabulous histories always connect it with this period. Eratos-
thenes says: "It was the altar on which the gods first made a
covenant after Jupiter had slain the Titans."

Ipsi hinc mundi templum est, victrixque solutis
Ara nixt sacris, vastos cum terra gigantas
In coelum furibunda tulit; cum Di quoque magnos
Quassivere Deos. Dubitavit Jupiter ipse,
Quod poterat non posse timens; cum surgere terram
Cerneret et verti naturam credidit omnem;
Montibus atque aliis aggestos crescere montes,
Et jam vicinas fugientia sidera moles:
Nec dum hostile sibi quicquam, nec numina norat

8
NOTES.

Si qua forent majora suis. Tunc Jupiter Aræ Sidera constituit, quæ nunc quoque maxima fulget.

1. 427–439.

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404. Τοῦ δὲ τοῦ ὀλέγον μὲν ἐπὶ χρόνον ύψοθ' ἕντος Πεῦσει' ἀντιπέρην γὰρ ἀείρεται 'Ἀρκτούρος.

419. Long as Arcturus o'er the ocean rides,
So long the darksome wave the Altar hides.

The Scholiast thus explains the passage:

"Ελαβε δὲ τὸν 'Ἀρκτούρον, ἐπειδὴ καὶ αὐτὸς ἐπιψαύει τοῦ βορείου κύκλου ή πόλου, ὀσπερ καὶ τὸ θυντήριον τοῦ ἀνταρκτικοῦ, καὶ ἔστιν ὄντως· ἀνατέλλει μετὰ Δέοντος οτ' 'Ἀρκτούρος, ἱδον δύο ἡραί· εἶτα Παρθένου, ἱδον δ'· εἶται Ζυγός ἱδον ἡραί δ'· εἶται Σκορπίου, ἱδον ἡραί η'. Καὶ τότε μετὰ ἡραν σγόνην τὸ θυντήριον ἀνατέλλει, εἶτα Τοξώτης, ἡραί ι'; Αἰγόκερως ιβ'; 'Ὑδροχόος ιδ'; εἶτα 'Ἰχθύος, ἡραί ις' καὶ τοῦ θυντήριον ἡραί η'; οίκτῳ οὐν ἡρας ποιήσαν θύεται τὸ θυντήριον' οτ' ἐδ' 'Ἀρκτούρος ις'; υπέργειος μὲν γὰρ ὄντος. ὑπόγειον δὲ ἕκεινο, καὶ ἐναντίον τοῦτον πορεύεται. διὸ καὶ τὸ μὲν βάττον δῶνεί; ο' δὲ μεῖζονας ἔχει τὰς περίφορας.

According to the Scholiast Arcturus is above the horizon sixteen hours. When it has reached the meridian at the end of eight hours the Altar rises, and sets with it. Hence the one is above the horizon sixteen hours and below it eight: the other eight hours above and sixteen below. Aratus must have borrowed all his statements respecting the constellation of the Altar from some Astronomer whose observations were made south of Athens. This constellation is not wholly visible at a higher latitude than 30° north of the equator.

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440. ἐν δὲ οἱ ἀπρίξ
"Ἀλλο μάλι' ἐσφήκωτα ἐξελάμενον διὰ χεῖρος Θηρίου· ὡς γὰρ μν πρῶτερον ἐπισκήμειατο.

455. In his right hand some beast he seems to bear—
They say, an offering for the Altar near.
NOTES.

"Εχει δὲ καὶ ἐν ταῖς χερσί τὸ λεγόμενον θηρίον, οὐ ποιοῦσι τὸ σχῆμα τεταγμένον. Τινὲς δὲ φασίν, ἀσκόν αὐτὸ εἶναι οὖν, εὖ οὐ σπένδει τοῖς Θεοῖς ἐπὶ τὸ Θυτήριον.

(Schol.)

Τὸ λέγειν ἄλλο θηρίον, οὐ πρὸς αὐτὸν τὸν Κένταυρον ἀντιδιεστειλέν ἄτοπον γὰρ, θηρίον λέγειν τὸν Κένταυρον Χείρωνα, πάντων Κένταυρων λογιστάτων καὶ δικαιώτατων ἄλλα πρὸς ἀντιδιαστολὴν τοῦ Σκορπίου, δὲ ὑπέρκειται τοῦ Κένταυρον, τὸ ἄλλο θηρίον ἐπειν ἄμεινον γὰρ οὕτως ἀκοῦσαι.

(Schol.)

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450. Ναὶ μὴν καὶ Προκώνων Διδύμως υπὸ καλὰ φαείνει.

463. Beneath the Twins the portals of the east
Dread Procyon bursts......................

Προκώνων, Procyon: so called, because he rises before Κύων, Canis, Sirius.

....."Et hic geminis est ille sub ipsis
Ante-canis Graio Procyon qui nomine fertur.” (Cic.)

Hyginus calls this constellation “Minor Canis seu Canicula.”
The bright star (Sirius) in Canis Major was likewise called Canicula.

*Exoriturque Canis, latratque Canicula flammas
Et rabit igne suo geminatque incendia solis.

(v. 207.)

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458. Μακροὶ δὲ σφέων εἰσὶν ἐλισσομένων ἐπαντοῖ.
Μακρὰ δὲ σῆματα κεῖται ἀπὸροθὲν εἰς ἐν ἑώτων.

471. Thousands of ages come—thousands depart—
Ere all return and meet where once they start.

"Αἰνιττεται δὲ τὸ εἰρημένον υπὸ τῶν φυσικῶν φιλοσόφων καὶ
μαθηματικῶν, ὥς ὁ δοκιμώτερος Πλάτων ἐκεῖνον γὰρ εἶπον μέγαν

8—2
NOTES.

εναντίων, δηλαδή συνέχεια ὁ τῶν αστέρων ἐν ἐνὶ ξωδίων, ὑπὸ τῆς αὐτῆς μορίαν τότε γὰρ συμπέρασμα τῆς οἰκομένης γίνεται, καὶ ἀπόλλυται ὁ τῶν ὁ κόσμος. Συνελθόντων αὐτῶν, καὶ πάλιν κινηθέντων ἐκ τοῦ αὐτοῦ, ἀνάλευσεν καὶ κτίστω εἶναι κόσμου ἄλλου ἐφασαν. Ἐξήφισαν δὲ καὶ εὑρον γίνεθαι ἐν μυρίασι πολλῶν ἑναντίων. "Ὅταν οὖν ἀπὸ τοῦ αὐτοῦ σημείου ἐπὶ τὸ αὐτὸ σημείον καταντήσωσιν οἱ πάντες, ἑναντίον ἑστιν ὅταν γάρ, ἀφ’ οὗ τις ἀρέσηται σημείον ἢ χρόνον, ἐπὶ τὸ αὐτὸ πάλιν ἐλθῃ, ἑναντίον ἑστιν." (Scholiast.)

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479. To the high heavens thou lift the starry eye.

Manillius, describing man as the lord of creation, says:

.............."Stetit unus in arcem
Erectus capitis, victorque ad sidera mittit
Sidereos oculos.................." (iv. 905.)

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476. Κέινο περγυληρές τροχαλῶν, Γάλα μιν καλισων.

483. The MILKY ZONE........ ................

Manillius gives a poetical version of the various notions entertained by the ancients of the milky way, and among them the true one, first proposed by Democritus, that it consists of innumerable small stars:

"Anne magis densâ stellarum turba coronâ
Contexit flammas, et crasso lumine candet,
Et fulgore nitet collato clarior orbis?" (1. 753.)

In Job xxvi. 13. "דרוקonta ἀποστάτην" of the Septuagint, and "the crooked serpent" of our version, is by R. Levi considered to refer to the Milky Way.
NOTES.

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478.  

\[\text{O \ d\'o\' \ t\'i \ d\'e \ s\'f\'e\'w\'n \ m\'e\'g\'a \ m\'e\'i\'o\'n\'e \ e\'l\'i\'s\'o\'n\'s\'t\'a.}\]

487. Round the mid heavens the larger two are bound,  
Nearer the poles the lesser two are found.

The poet now proceeds to describe the position of four imaginary circles in the heavens in the following order: the tropic of Cancer, the tropic of Capricorn, the Equator, and the Ecliptic.

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535.  

\[\text{m\'i\'a \ d\'e \ s\'f\'e\'w\'n \ ë\'s\'t\'i\'n \ ë\'k\'a\'s\'t\'o\'u.}\]

543. The orbits of three circles we have trac'd,  
Directly round the polar axis plac'd:  
The fourth, obliquely running through the sky  
From lowest Capricorn to Cancer high.

Every circle on the globe described round the pole parallel to the equator cuts the horizon at two fixed points, and consequently a star apparently describing such a circle always rises and sets at precisely the same point in the horizon. But the ecliptic described obliquely round the pole cuts the horizon at every point between 22 degrees north and 22 degrees south of the equator, and the Sun, apparently describing this circle, rises and sets at different points in the horizon within these bounds.

Page 55.

541.  

\[\text{"O\'s\'s\'o\'n \ ð\' \ ð\'f\'h\'a\'l\'m\'o\'i \ b\'o\'l\'h\'s \ ã\'p\'o\'t\'ê\'m\'e\'t\'a \ a\'q\'h\'ï,}\]
\[\text{"E\'z\'â\'i\'k\'e \ ã\'n \ t\'o\'s\'o\' \ h\'m\'i\'n \ ù\'p\'o\'d\'r\'a\'m\'o. \ A\'n\'t\'a\'r \ ë\'k\'a\'s\'t\'h,}\]
\[\text{"I\'s\'h \ m\'e\'t\'r\'h\'ê\'t\'s\'a, \ d\'w \ p\'a\'r\'a\'t\'ê\'m\'e\'t\'a \ ã\'s\'t\'r\'a.}\]

559. If we this circle measure in the sky,  
Spanning a sixth part with the human eye,  
Two signs of twelve it can at once embrace,  
Thence to the central eye an equal space.
NOTES.

This is, as termed by the Scholiast, Τὸ Ἐξάγωνον Σχήμα. If an equilateral hexagon be described in a circle each side will cut off one sixth or two twelfths of the circle, and will equal the radius. The following diagram renders the statement clear. Aratus supposes that the eye can at once embrace two signs or 60 degrees of a great circle in the heavens.

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556. ...Τόσον Ὑ ἐπὶ μήκος ἑκάστη
Νῦξ αἰεὶ τετάνωται, διὸν τέ περ ἡμισὺ κύκλου
Ἀρχῳμήνη αἵπ τοικός ἀείρεται ἴψῳθι γαῖῃ.

579. Black dreary Night now holds extended sway,
Giving to earth the cold contracted day:
Now triumphs in his turn the God of light.

Ο δὲ λόγος, ἑκάστῃ νῦξ ἐπὶ τοσοῦτον μήκος γίνεται, ἠ τοσοῦτον ἕχει διάστημα τῆς περιφερείας, διὸν ἀπὸ νυκτὸς ἀρχῳμήνη ἐπαιρεται καὶ περιάγεται μέρος τοῦ κύκλου τοῦ ἡμισὺ ἐπέχου ἐξ ζωδία.

(Scholiast.)
NOTES.

One half of the ecliptic is always above and one half below the horizon. The length of the night varies and depends upon the height above the horizon to which that half of the ecliptic will rise which rises at the commencement of night: in the same manner as the length of the day depends upon the height above the horizon to which that half of the ecliptic rises which rises with the Sun.

"Illius oceano quantum submergitur alto
Tantum telluris supereminet. Omnibus iste
Noctibus illabens pelago sex inserit astra,
Sex reparat. Tanto nox humida tempore semper
Tenditur, extulerit quantum se circulus undis."

(Fest. Avien.)

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582. ε μὴν φάεις κορίστηται,
Βολυντῷ ἐπέχει πλέον δίχα μνεύσεις,
'Ημος ἡλίου κατατρομένου δύναται.

603. Arctophylax, insatiable of light,
Unwilling seeks the dreary realms of night—
Above the waves his outstretched hand remains,
Through half the night the struggle he maintains.

The constellation Boötes is setting for about eight hours, but never totally disappears, his hand lying beyond the Arctic circle. Hence he may be called insatiable of light, especially when setting with the setting sun; and to struggle against quitting the visible heavens for more than half the night.

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636. Ὅσ καί ἐπερχόμενος φοβεῖτι μέγαν Ὄριονα.

660. When ScoRpio rises with the bright Antar,
Orion marks that signal from afar.

The fabulous accounts of Orion are numerous and various. The one adopted by Aratus is this: Orion, a celebrated hunter of
Greece, was invited by OEnopion, a petty king of Chios, to destroy the animals that overran his island, and greatly injured his vineyards. The mighty hunter nearly annihilated the beasts of chase, and thus, in poetical language, committed violence upon Diana, the Goddess of hunting. Orion was bitten by one of the poisonous reptiles with which these islands abounded, and which secreted themselves in the crevices of the rocks. Hence the Goddess was said to have cleft the earth, and brought forth a monster scorpion, which attacked and killed the huntsman.

Horace makes a slight variation in this fable. According to him Orion was slain by an arrow from the bow of the virgin huntress:

"........................ integrae
Tentator Orion Diane
Virgineâ domitus sagittâ."

Homer represents him in the Elysian fields, following the same pursuits as he did upon earth:

"Ωρίωνα πελάριον εἰσενόησα
Θῆρας ὀμοι έπειλεύντα κατ’ ἀσφοδελόν λειμώνα:
Τοῦτο αὐτὸς κατέπεφεν ἐν οἰοπόλοισιν ὄρεσι,
Χερσιν ἓχων ῥόπαλον παγχαλκεον αἰεν ἀγαγεν.
(Œd. xi. 570.)

Orion was classed by the ancients among the malignant constellations. He was considered as an originator of storms both at his rising and setting. Aristotle says, "Ωρίωνος δύσιν, καὶ ἀνατολῆς παραξώδη." To this notion the poets frequently allude:

Quam subito adsurgens fluctu nimbosus Orion
In vada caeca tulit.
(Œn. i. 534.)

Quam multi Libyco volvuntur marmore fluctus,
Sævus ubi Orion hibernis conditur undis.
(Œn. vii. 718.)

Nec sidus atrà nocte amicum appareat
Quà tristis Orion cadit.
(Hor. Ep. x.)
According to some of the ancient writers Orion never sets. This can only be the case to those inhabitants of the globe who dwell within about 12 degrees of the North Pole. Virgil seems to have adopted this notion:

\[ \text{Quam magnus Orion,} \\
\text{Cum pedes incedit medii per maxima Nerei} \\
\text{Stagna viam scindens, humero supereminet undas.} \]

\text{\textit{(AEn. x. 703.)}}

The mistake has arisen from the poets applying to Orion the fables relating to Bootes.
NOTES ON THE DIOSEMEIA.

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20. Γνώσκεις τάδε καὶ σὺ τὰ γὰρ συναίδεται ἐδή 'Εννεακαίδεκα κύκλα φαίνου Ἡλίου.

25. These things thou know' st; and ancient men have told,
And trac'd in sacred characters of gold,
How Sol and Luna part again to meet
When the great cycle nineteen years complete.

At the end of nineteen years the Sun and Moon occupy nearly the same places in the Zodiac as each of them did at the commencement of that period. Hence all the appearances of the moon, in respect to the sun, return at the same places in the heavens, and at the same dates of the year. The discovery of this cycle is attributed to Meton, who wrote an account of it in a book called "Enneadecaterides," to which Aratus alludes. It was adopted by the Athenians 433 years before the Christian era to regulate their calendar, and to fix the days of their festivals, which depended in a great degree upon the state of the moon. They engraved the cycle in letters of gold on the walls of the temple of Minerva, and hence the number, which designates the year in this cycle, is called the golden number.

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22. Ὁσα τ' ἀπὸ ζώνης εἰς ἐσχατὸν Ὄριωνα 
Νῦξ ἐπιδυνεῖται, κύνα τε θραυσὺν Ὄριωνος.

29. Thou knowest all the stars that night rolls round
With great Orion, and his rabid hound.

That is, all the stars which appear throughout the year. The ancients commenced the year with the rising of the belt of Orion together with the sun; that is, at the summer solstice.
NOTES.

"Sed primaeva Meton exordia sumpsit ab anno,
Torreret rutilo cum Phoebus sidere Cancrum,
Cingula cum vehere pelagus procul Orionis,
Et cum cæruleo flagraret Sirius astro."

(Fest. Avien. 49–50.)

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160. Σκέπτεο καὶ φάτνην ἥ μὲν τ’ ὀλίγῃ εἰκὼν

'Αχλαίη.

183. ΨΗΦΙΝΗ, a nebulous bright spot

"Ἐν τῷ Καρκινῷ δύο ἀστέρες εἰσίν, οἱ καλοῦμενοι ὄνοι· ὄν τὸ
μεταξὺ τὸ νεφέλιον, ἡ φάτνη καλουμένη. τοῦτο δὲ εἶναι ἥθελ·
δε γένηται, υδατικάν."

(Theophrast.)

Again,

"ἡ τοῦ ὄνου φάτνη εἰ συνίσταται καὶ ἥθελα γίνεται, χει-
μῶνα σημαινει." 

(Theophrast.)

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177. Σῆμα δὲ τοῦ ἀνέμου καὶ οἴδαίνουσα θάλασσα

Γενέσθω.

200. And as the skies above, the waves below,

Signs of the rising wind and tempest show.

"Continuo, ventis surgentibus, aut freta ponti
Incipiunt agitata tumescere, et aridus altis
Montibus audiri fragor; aut rosonantia longe
Litera miseri, et nemorum increbescere murmur.
Jam sibi tum curvis male temperat unda carinis:
Quum medio celeres revolant ex æquore mergi,
Clamoremque ferunt ad litora; quumque marinae
In sicco ludunt fulicae; notosque paludes
Deserit, atque altam supra volat Ardea nubem."

See Virgil, Georgic I. from verse 355 to verse 440.
NOTES.

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181. Kai δ᾽ ἐν ἑτὶ ξηρὴν δὲ ἐρωδὸς σὺ κατὰ κόσμον
'Εξ ἀνές ἐρχηται φωνῇ περὶ πολλὰ λεληκως.

206. When screaming to the land the lone Hern flies,
And from the crag reiterates her cries.

'Eρωδὸς. Ardea. The Hern.

There were, according to Aristotle, three species of Hears: Pella, Alba, Stellaris; the Black, the White, the Speckled.

The flight of this bird from sea to land is here given as a sign of wind. At line 240, its flight from land to sea as a sign of rain.

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184. Kai πότε καὶ κέπφοι, ὅποτ' εἴδοι ποτέων,
'Ἀγγία μελλόντων ἀνέμων εἰληδά φέρονται.

208. Breasting the wind in flocks the Seamews sail,
And smooth their plumes against th' opposing gale.

"Κέπφος, Fulica. A white semann with a black cap. Germaniccè, ein weyss Mewe."

(Turner.)

The Scholiast says, "the Kepphos was a sea-bird, with very little flesh, being nearly all bone and feather; and that it delighted in floating on the surf."

PAGE 71.

186. Πολλάκι δ᾽ ἄγριάδες νῆσσαι ..............

212. ..................the Wild Ducks soar.

"Νῆττα, Anas. Anglice, a Duck. Germaniccè, eyn Endt."

Plinius:

"Anates sole, quæque sunt ejusdem generis, in sublime sese protinus tollunt atque e vestigio column petunt, et hoc etiam aqua."

(Turner.)
NOTES.

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186. 

\[ \varepsilon \in \Delta \iota \Delta \nu \alpha \]

210. And diving **Cormorants**

"\( \varepsilon \iota \theta \iota \nu \iota \), Mergus. **Anglicè, Cormorant. Germanicè, Eyn Duecker."

Aristoteles :

"Mergus marina avis est, ex piscium venatu victitans, subit tamen altius in fluvios."

(Turner.)

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216. *\( \nu \tau \rho \upsilon \zeta \varepsilon \iota \rho \o \varepsilon \beta \iota \nu \iota \nu \iota \varepsilon \iota \mu \mu \alpha \iota \iota \delta \sigma \iota \iota \gamma \iota \nu \gamma \iota \iota \nu \iota \nu \nu \mu \)."

248. When at the early dawn from murmuring throat Lone **Oloolygo** pours her dismal note.

There is a great variety of opinions respecting the word **Oloolygo**. Hyginus renders it "Bubo," an Owl. Avienus latinises "Oloolygo," by "Ulula." Cicero translates it, "Acredula."

Sæpe etiam pertriste canit de pectore carmen,
Et matutinis acredula vocibus instat,
Vocibus instat, et assiduas jacet ore querelas,
Cum primum gelidos rores aurora remittit.

Commentators on Cicero doubt whether this word means "a wood-lark," or "a nightingale." Grotius quotes the following passage from Pliny, and maintains that Ololygo is a species of **Frog**: "Ranis prima (lingua) cohaeret, intimâ absolutâ a gutture quam vocem mitunt: Mares tum vocantur Ololygones; stato id tempore evenit cipientibus ad coitum fœminas." He conjectures that "Acredula," in the fragment of Cicero, should be "Agredula," according to Isodorus, a tree-frog. "Rana parva in sicco vel agris commemorans unde et nuncupata."
NOTES.

We have in Theocritus, who was contemporary with Aratus:

Τοι δὲ ποτὶ σκιεραίν ὀροδαμνίσιν αἰθαλίωνες
Τέττιγες λαλαγεύντες ἔχουν πώνου ἀ & ὀλολυγών
Τηλόθεν ἐν πυκνήσι βάτων τρυίζοκεν ἀκάνθαις.
(Id. vii. 138—140.)

The Scholiast on this passage says, “Ololygo was a bird living in woody places.” Voss renders it a small species of owl. Others, a thrush, or one of the finch tribe. It rather militates against the interpretation of Grotius, that both Aratus and Theocritus make Ololygo of the feminine gender. I have left the word untranslated, and the reader must choose between owl, nightingale, woodlark, and frog.

PAGE 73.

218. 246. Κορώνη, cornix, a crow; and Κόραξ, corvus, a raven, according to Turner.

According to Aratus, it seems that Κορώνη is a raven, or crow: Κόραξ a crow, or rook.

PAGE 73.

225. ............... καὶ ἄθροιν ἄρθρον ἤπιεν ἰούλοι
Τείχη ἄνερποτες ..................

256. While numerous insects creep along the wall.

"Ο ἰούλος σκόλης ἐστὶ πολύπουσι.
(Schol.)

PAGE 75.

278. "Γέρανος," grus, a crane.

300. "Grues multa prudenter faciunt: loca enim longinquaque petunt, sui commodi gratiā, et altè volant, ut procul prospicere possint, et si nubes tempestatem ve viderint, conferunt se in terram."
(Arist.) (Turner.)
NOTES.

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292. Καὶ σπίνος ἡδα σπίζων.

317. When SPARROWS ceaseless chirp at dawn of day.

318. "Spinum Aristotelis grenefincam nostram esse arbitror."

Avienus translates it, "Fringilla." Hyginus, "Passer."

PAGE 76.

312. Πρίνοι δ' οὐ καρπὸ ι κατακθὲς, οὐδὲ μέλαναι

331. Σχῖνοι ἀπείρησοι.

335. Not signless by the husbandman are seen

The ILEX, and LENTIScus darkly green.

Prinos and Schinos, two trees bearing acorns, or nuts of some kind. To the latter is applied the epithet "μέλανης," "black," and, according to Aratus and Cicero, it produced three crops in each year.

"Jam vero semper viridis semperque gravata

Lentiscus triplici solita grandescere factu,

Ter fruges fundens tria tempora monstrat arandi."

"Non hoc quidem quaero, cur haec arbor una ter floreat, aut cur arandi maturitatem ad signum floris accommodet. Hoc sum contentus, quod, etiam si quo quidque fiat ignorem, quid fiat intelligo."

(Cic. De Divin.)

PAGE 76.

335. Οἶος ἐπὶ σφῆκεσων ἀλώσεται αὐτίκα δίνως.

351. If from the earth the numerous HONEYs rise,

Sweeping a living whirlwind through the skies.

Aratus adds two other prognostics, one of a severe, the other of a mild winter.

Θηλείαι δὲ σύνε, θηλεία δὲ μῆλα, καὶ αἰγες,

'Οππότ' ἀναστρωφόσιν ὁχῆς, τὰ δὲ γ' ἀρένα πάντα

Δεξάμεναι πάλιν αὐτὶς ἀναβιθῆν οχέωνται,
NOTES.

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Αὐτῷ καὶ σφήκασθι μέγαν χειμῶνα λέγωμεν. 
'Οψε δὲ μισηγμένων αἰγῶν, μήλων τε, σωᾶν τε 
χαίρει ἄνολβος ἄνηρ, οὐ οὐ μᾶλα θαλπίσωτι 
Εὐδίου φαίνοντι βιβαιόμεναι ἐνιαυτῶν.

PAGE 79.

403. . . . . . . καὶ γὰρ τε κύων ὁμόξαρο ποσοῖν 
'Αμφοτέρους, χειμῶνοι ἐπερχομένοι δοκεῖον.

418. Sign too of rain: his outstretch'd feet the Hound 
Extends, and curves his belly to the ground.

The Scholiast gives ὁμόξαρο for ὁμόξατο.

PAGE 79.

405—409. Καὶ μῆν ἐξ ὕδατος, κ.τ.λ.
420—423. Before the storm the CRAB, &c.

“Scholiastes quoque hos versus continuos non agnoscit, quod 
in eo rarum. In Avieno (qui similiter omittit) non perinde in- 
frequens, adeo ut sepe nos referre tæduerit, quoties ille aliquid ex 
Arato pretermittit. Itaque hos versus spurios puto, quales plures 
esse in hoc opere non dubito. Nam de muribus repetit cum paulo 
ante de ipsis dixerit, quod tamen et alibi de corvo et graculo reperies.”

(Grotius.)

PAGE 80.

416. . . . . . . . . . . . . . . . . . . . . μᾶλα ἄρκιον εἶν
Φρόζεσθαι φθίνουσοι, ἐφισταμένιοι τε μηνὸς 
Τετράδας ἀμφοτέρας . . . . . . . . . . . . . . . . . . .

430. Observe when twice four days she veils her light, 
Nor cheers with silvery ray the dreary night.

The four days preceding and the four days following that of 
the new moon.

"Ὁ δὲ νόης, φυλάσσων τὰς τετράδας ταῦ ἄτα, ἐπεὶ πέρατα 
tῶν δύο μηνῶν εἰσὶν ὁμοί συνερχομένων, ὥς οὖν μεθόριον ὑπαρ- 
χούσας, ὅτε καὶ ο άιθήρ σφαλεῖς ἐστὶ καὶ ὀμβροφόρος.”

(Schol.)