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THE
PHENOMENA AND DIOSEMEIA
OF
ARATUS.

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THE
PHENOMENA AND DIOSEMEIA
OF
ARATUS,

TRANSLATED INTO ENGLISH VERSE, WITH NOTES,

BY

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Πάνθ' Ἠγησιάναξ τε καὶ Ἑρμῖππος τὰ κατ' αἶθρην

Τείρεα, καὶ πολλοὶ ταῦτα φαινόμενα

Βίβλοις ἐγκατέθεντο· ἀποσκόπιοι δ' ἀφάμαρτον·

ΑΛΛΑ ΤΟ ΛΕΠΤΟΛΟΓΟΥ ΣΚΗΠΤΡΟΝ ΑΡΑΤΟΣ ΕΧΕΙ.

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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 scholiast speaks of him as ἐπιφανοῦς 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 Persæus the Stoic. In the latter the young student found not only a tutor, but a patron and friend. Persæus was in high estimation with Antigonus, surnamed Gonatas, at that time king of Macedonia†; and upon

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

† Antigonus II. or Gonatas, was the great grandson of Antigonus, Alexander's general. Antigonus intrusted to Persæus 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 Persæus 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 $365^{\text{d}}. 5^{\text{h}}. 49^{\text{m}}$. 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-

* The king gave the poet a copy of the work of Eudoxus: ἅμα εἰπόντος, "ὥς ΕΥΔΟΞΟΤΕΡΟΝ ποιῆς τὸν ΕΥΔΟΞΟΝ, ἐκτείνας τὰ παρ' αὐτῷ κείμενα μέτρα."

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, Ποιητὴν οὐδὲν ἁδοξότερον τοῦ Ὀμήρου; 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 *Phænomena* and *Diossemeia*. 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 *Phænomena*. 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 *Phænomena* 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 evehendi." (Buhle.)

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

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

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 *Phænomena*; 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 οὐδέποτ' ἄνδρες ἐῷμεν
 Ἀρρῆτον. Μεστὰι δὲ Διὸς πᾶσαι μὲν ἀγυιαί,
 Πᾶσαι δ' ἀνθρώπων ἀγοραί· μεστὴ δὲ θάλασσα,
 Καὶ λιμένες. Πάντῃ δὲ Διὸς κεχρήμεθα πάντες.
 ΤΟΥ ΓΑΡ ΚΑΙ ΓΕΝΟΣ ΕΣΜΕΝ· ὁ δ' ἥπιος ἀνθρώποισι
 Δεξιὰ σημαίνει· λαοὺς δ' ἐπὶ ἔργον ἐγείρει,
 Μιμνήσκων βιότοιο· λέγει δ' ὅτε βῶλος ἀρίστη
 Βουσί τε καὶ μακέλῃσι· λέγει δ' ὅτε δεξιαί ὦραι
 Καὶ φυτὰ γυρῶσαι, καὶ σπέρματα πάντα βαλέσθαι.

* "In dictione poetica non comparandus est Avienus quidem Cicerone aut Germanico, excellit tamen inter poetas Latinos seriores puritate et elegantia sermonis." (Buhle.)

Αὐτὸς γὰρ τάδε σήματ' ἐν οὐρανῷ ἐστήριξεν,
 Ἄστρο διακρίνας· ἐσκέψατο δ' εἰς ἐνιαυτὸν
 Ἀστέρας, οἵκε μάλιστα τετυγμένα σημαίνειν
 Ἀνδράσιν, ὥραιων ὄφρ' ἐμπεδὰ πάντα φύωνται.
 Τῷ μιν αἰὲ πρῶτόν τε καὶ ὕστατον ἱλάσκονται.
 Χαῖρε πάτερ, μέγα θαῦμα, μέγ' ἀνθρώποισιν ὄνειαρ.

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 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 Astrologiæ ornatissimis atque optimis versibus de cœlo 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

* Euseb. Evang. Præf. Lib. xiii.

† Clem. Alex. Strom. Lib. v.

‡ On the revival of literature in the fifteenth century several editions of Aratus were published. In 1521, Philip Melancthon edited the *Phænomena* with a Latin version and preface. In 1600, Hugo Grotius published the *Phænomena* 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 credidit 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 cœlestes deinceps descriptæ sunt; delectat harum descriptionum ordo simul et varietas; ornatae sunt illæ mythis non oneratae; et quod puritatem, simplicitatem, elegantiam Græci sermonis attinget 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 *φανόμενα* dicuntur quæ apparent in cœlo." (Scapula.)

† "*Διοσημεία* seu *Διοσημία*. Signum Jove: Prodigiosa tempestas: 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 *Ἰατρικαὶ Δυνάμεις*.

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

*Αἰάζω Διότιμον, ὃς ἐν πέτραισι κάθηται
Γαργαρέων παῖσιν βῆτα καὶ ἄλφα 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 λεπτόν*.^{*} Speaking of Gyaros, a small island in the Grecian archipelago, he says : Aratus points out their poverty in his *Τὰ κατὰ λεπτόν* :

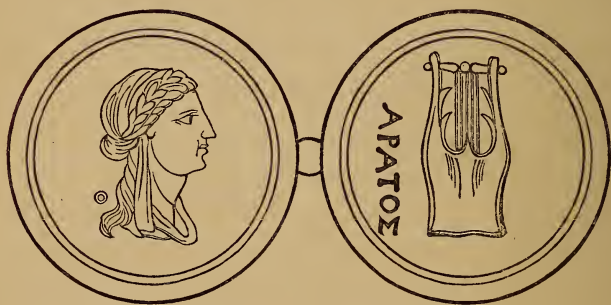
*Ω Λητοῖ σὺ μένεις μὲν σιδηρείῃ Φολεγάνδρῳ
Δειλῇ, ἣ Γύαρον παρελεύσεαι ἀντιχ' ὁμοίῃ ;*

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, σφόδρα πολυγράμματος ἄνηρ.

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†.



* "Cydnus ultra per Tarsum exit. Deinde urbs est olim a Rhodiis, Argivisque, post Piratis Pompeio assignante possessa, nunc Pompeiopolis, tunc Soloe. Juxta in parvo tumulo ARATI poetæ monumentum, ideo referendum, quia ignotum, quam ob causam jacta in id saxa desiliunt." [Pomp. Mela. Cap. 13.]

† Vid. Beger. Thesaur. Brandenburg. p. 265.

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 :

Ἐν μὲν γαῖαν ἔταξ', ἐν δ' οὐρανὸν, ἐν δὲ θάλασσαν,
Ἡελιὸν τ' ἀκάμαντα, σελήνην τε πλήθουσιν,
Ἐν δὲ τὰ τεύχεα πάντα, τά τ' οὐρανὸς ἐστεφάνωται,
Πληϊάδας θ' Ὑάδας τε, τότε σθένος Ὠρίωνος,
Ἄρκτον θ', ἣν καὶ ἄμαξαν ἐπὶ κλησὶν καλέουσιν,
Ἡ τ' αὐτοῦ στρέφεται, καὶ τ' Ὠρίωνα δοκεύει
Οἷη δ' ἄμμορος ἐστὶ λοετρῶν Ὠκεανοῖο.

“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, memoriæ 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:

Οἱ μὲν ἐπ' ἡπείρῳ, τοίπερ Σύριοι καλέονται·
 Οἱ δ' ἄλὸς ἐγγὺς ἑόντες, ἔπωνυμίην Φοίνικες,
 Τῶν δ' ἀνδρῶν γενεῆς οἱ Ἑρυθραῖοι γεγάασιν·
 Οἱ πρῶτοι νήεσσιν ἐπειρήσαντο θαλάσσης,
 Πρῶτοι δ' ἐμπορίας ἀλιδινέος ἐμνήσαντο,
 Καὶ βαθὺν οὐρανίῳν ἄστρον πόρον ἐφράσσαντο.

(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: פג Pag or פגא Pega, “a bridle,” and סוס Sus, “a horse,” forming the word פגסוס “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.”

Κητητοὶ δὲ τρίποδες τε, καὶ ἵππων ξανθὰ κάρηνα. (Il. 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, "Amasai," "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 *את-הכרבים ואת להט החרב המתהפכת*, *τὰ χερουβὶμ καὶ τὴν φλογίνην ῥομφαίαν τὴν στρεφομένην*, "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: *דוב*, Dúb, 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 γόνασιν*] Genuculator: 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: אָדָם, "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, "Ὀφιοῦχος," "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 (*θηρίον*) a victim, an offering, or as some say (*οἶνον ἄσκον*) a flask of wine. And not far distant, Orion, (Nimrod) *הַגִּבּוֹר צִיד*, "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, DUHBE, 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. ENGNASIN [*Ὁ 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 (*Ζώνη*) round the waist: bearing in one hand a sickle, and in the other a goad or spear. In this

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 (Ζώνη) 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 (Ζώματα), a chain on her wrists passing round her back. On her head ALPHERAT: on her loins MIRACH: on her foot ALMACK.

12. PEGASUS. The forepart of a winged horse.

13. DELTOTON. An isosceles triangle.

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 te dexterioꝛ tortum declinet in anguem,
Neve sinisterioꝛ 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.

17. CYGNUS. THE SWAN. A bird with expanded wings, and outstretched neck.

18. SAGITTA. AN ARROW or DART.

19. AQUILA, or VULTUR VOLANS. AN EAGLE. In this constellation is the bright star ATAIR.

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.)

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 Φάτνη, Præsepe, the manger; and on each side of this nebula to the north and south a small star. These two stars were called "Ονοι, 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.

7. CHELÆ. THE CLAWS. The foreclaws of Scorpio.

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, “Μεγαθήριον,” “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 cœli 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 cœperunt 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 cœli post terras jura manebunt.”

(Lib. iv. 548.)

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There is a splendid star *ANTAR*, or *COR SCORPIONIS*, on the breast of *Scorpio*.

9. *SAGITTARIUS*. *THE ARCHER*. A centaur or man on horseback bearing a bow.

10. *CAPRICORNUS*. *THE HORNED GOAT*. A goat with the hinder extremities of a fish.

11. *AQUARIUS*. *THE MAN WHO HOLDS THE WATER-ING 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.*)

" *Quæ*, simul inversum contristat *Aquarius* annum,
Haud usquam prorepat."

(*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*.

SOUTH OF THE EQUATOR.

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 JUGULÆ, 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:

. ἀρίζηλοι δέ οἱ ἀνγαὶ
 Φαίνονται πολλοῖσι μετ' ἄστρασι νυκτὸς ἀμολγῶ·
 "Οὐ τε κύν' Ὠρίωνος ἐπὶ κλησιν καλέουσι,

Λαμπρότατος μὲν ὄγ' ἐστὶ κακὸν δέ τε σῆμα τέτυκται,
Καί τε φέρει πολλὸν πυρετὸν δειλοῖσι βροτοῖσι.

Π. XXII. 29.

Ponendæque domo quærenda est area primum :

Novistine locum potiozem rure beato ?

Est ubi plus tépeant 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.

5. CETUS. THE WHALE. THE GREAT FISH. It looks to the east.

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.

8. CORONA AUSTRALIS. THE SOUTHERN CROWN.

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.

10. CENTAURUS. THE CENTAUR. A man on horse-back, bearing an animal on a pole or spear.

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. 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, עש, כסיל, כימה, מזרת, 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 עש, כסיל, כימה, Ash, Kesil, Kimah, Πλειὰς, Pleias, Ἑσπερος, Hesperus, Ἀρκτοῦρος, Arcturus; and in Ch. xxxviii. 31, 32, the same words are rendered Ἑσπερος, Hesperus, Ὠρίων, Orion, Πλειὰς, Pleias. In Amos v. 8, עשה כימה וכסיל ("who made Kimah and Kesil"), is rendered ὁ ποιῶν πάντα καὶ μετασκευάζων, "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 עש, Ash, Blight: כסיל, Kesil, Cold: כימה, Kimah, Heat. There is the same diversity of opinion respecting מזרת, Mazzaroth. R. Levý 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 difficultatem, dum continet astrorum ejusmodi nomina de quibus nihil nisi conjectura nobis relicta est. Nos nihil audemus definire: sed cum Rabbane in hoc potius acquiescimus, quod insignia astra sint, a quibus ad reliqua omnia valeat collectio." Bochart (Hierozoic. Vol. II. p. 113, 114) gives an explanation of Job xxxviii. 32, עיש על-בניה, "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 עֵשׂ, כְּסִיל, כִּימָה, Ash, Kesil, Kimah, signify vapour, ice or snow*, and rain, the three natural conditions of water; 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.

* כִּסְלֵו, Kisleu, was the name 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 ΟΣ ΠΟΤΕ
ΛΕΠΤΗ

ΦΡΟΝΤΙΔΙ ΔΗΝΑΙΟΥΣ ΑΣΤΕΡΑΣ ΕΦΡΑΣΑΤΟ
ΑΠΛΑΝΕΑΣ Τ ΑΜΦΩ ΚΑΙ ΑΛΗΜΟΝΑΣ ΟΙΣΙΝ
ΕΝΑΡΓΗΣ

ΙΛΛΟΜΕΝΟΣ ΚΥΚΛΟΙΣ ΟΥΡΑΝΟΣ ΕΝΔΕΔΕΤΑΙ
ΑΙΝΕΣΘΩ ΔΕ ΚΑΜΩΝ ΕΡΓΟΝ 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, 10
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. 20
 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, 30
 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. 40
 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 50
 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. 60
 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. 70
 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. 80

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. 90
 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,
 Astræa 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. 100
 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 110
 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. 120
 “Rising to view I see a ghastly train—
 “Revenge—Oppression—Woe—Despair—and Pain.”

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, 130
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. 140
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 : 150

'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 : 160
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 seour'd the dusty plain with fervid spoke.
Now round the pole he holds his swift career,
While presses on his track the greater Bear. 170
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 Kins their mother's honour share.
CAPELLA's course admiring landmen trace,
But sailors hate her inauspicious face.

Beneath Auriga, turning to the east,
The Tyrian BULL, Europa's treacherous beast, 180
His golden horns and snowy neck displays :
Rivals his splendid head Apollo's rays.
Glow's 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, 190
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. 200

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. 210

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. 220
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. 230

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. 240

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. 250

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. 260
 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—CELÆNO—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— 270

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

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 clouldless 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 ; 320
 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. 330

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. 340
 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. 350

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 Phœbus' car.
 The silken bands, that join the Fishes' tails, 380
 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 390
 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—unconfined
 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— 400
 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 : 410
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. 420
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. 430
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. 440
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 Eurys with his blighting breath is near.

The CENTAUR next his monster form displays.
Is he sage Chiron, sung in Homer's lays ? 450

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:

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— 480
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. 490
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 SERPENTARIUS rears,
And nearer yet the SERPENT's head appears. 500

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 Phœbus gains this point, approaching near
 E'en to the forefeet of the greater Bear, 510
 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. 520
 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 Phœbus cuts this EQUINOCTIAL way,
 He gives to man the balanc'd night and day : 530
 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. 540
 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, 550
 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, 560
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— 570
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 : 580

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 Phœbus' rising chariot is not seen ; 590
 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. 600
 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. 610

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. 620

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. 630
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— 640
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. 650
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.

660

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 670
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— 680
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, 690
 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, 700
 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 710
 Half goat, half fish, the wintry CAPRICORN,
 Auriga setting bears his Kids away;
 And ocean quenches Procyon's feverish ray.

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— 720
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— 730
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 :

Not all his limbs the eastern ocean clear
Till in the heavens the brother Twins appear.
Now first Bootes sinks into the main, 740
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, 750
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. 10

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. 20

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. 30

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.
Ofttimes at eve the balmy breezes blow,
And soft as milk the murmuring billows flow.

But ere again the rosy-finger'd hours
Unbar for Phœbus' car the golden doors, 40
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. 50
 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 : 60
 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, 70

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. 80

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. 90
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. 100
 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. 110
 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. 120
 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 ; 130
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 PHÆBUS 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, 140
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.

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 ; 150
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 PHŒBUS' 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 160
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 Phœbus' 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, 170
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 Phæbus gives
 As to their rest his wearied steeds he drives.

Now mark where high upon the zodiac line 180
 The stars of lustre-lacking Cancer shine.
 Near to this constellation's southern bound
 PHATNE, 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 ONOI by the ancient sages nam'd.
 If when the sky around be bright and clear
 Sudden from sight the PHATNE disappear,
 And the two ONOI north and south are seen 190
 Ready to meet—no obstacle between—
 The welkin soon will blacken with the rain,
 And torrents rush along the thirsty plain.
 If black the PHATNE, and the ONOI 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 200
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, 210
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 220
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 230
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 240
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— 250
Dips her black head—her wings, and body laves.

The Ox looks up and snuffs 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. 260

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 pinion shakes ;
When the shrill screaming HERN 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 ; 270
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 uncapt the mountain's head,
While on its base a vapoury veil is spread ; 280
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-charge'd clouds the air's oppress,
PHATNE, the spot that shines on Cancer's breast, 290
Attentive mark : if bright the spot appear,
Soon Phœbus 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, 300
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 ? 330
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. 340
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 ; 350
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. 360
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; 370
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, 380
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, 390
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, 400
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, 410
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 ofttimes 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 420
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.

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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.

PAGE 33.

5. Τοῦ γὰρ καὶ γένος ἐσμέν

5. And we his offspring are.

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

“Πρὸς το, ‘Πατὴρ ἀνδρῶν τε θεῶν τε.’ εἰ γὰρ αὐτὸς ταῦτα ἐδημιούργησε πρὸς τὸ τοῖς ἀνθρώποις βιωφελές, αὐτοῦ ἂν κληθεῖν, αὐτὸν πατέρα καὶ δημιουργὸν ἐπιγραφόμενοι. Δύναται δὲ καὶ ἐπὶ τοῦ ἀέρος· αὐτὸν γὰρ ἐπισπώμενοι, ὥς ἐξ αὐτοῦ ζῶμεν, ὄντος ζωητικοῦ, καὶ τῆς πνοῆς ἡμῶν αἰτίου.”

(Scholiast.)

From these words, which St Paul quoted to the philosophers of Athens to prove the unity of the godhead, Manillius 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 cœlumque redire animas cœloque venire?”

(Lib. iv. 883.)

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16. Αὐτὸς, καὶ προτέρῃ γενεῇ.

“Vide Scholiasten, qui heroes, Perseum, Oriona, aliosque intelligit. Nonnulli ad Jovem ipsum referunt, et explicant αὐτὸς καὶ προτέρῃ γενεῇ, *qui et ipse es et prima propago*: cui quidem

interpretationi favet Grotius, quod Jupiter sit *Sol* nonnullis et *πρωτογόνος*. Mihi neutrum sufficit; sed potius arbitror locum esse corruptum, et pro vulgato legendum esse *Ἀυτοῖς καὶ προτερῇ γενεῇ*, ita, ut totum commation jungatur cum antecedenti *ἀνθρώποισιν*, et sensus exeat hic: *salve pater, magna admiratio, magna hominibus utilitas, qui sunt et qui ante fuerunt.*"

(Buhle.)

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22. ἔχει δ' ἀτάλαντον ἀπάντη
Μεσσηγὸς γαῖαν.....

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. Manillius says:

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

"Aëra pergelidum tenuis diducitur axis,
Libratumque regit diverso cardine mundum:
Sidereus circa medium quem volvitur orbis,
Æthereosque rotat currus; immotus at ille
Austrinas aretos magni per inania mundi,
Perque ipsum terræ directus constitit orbem."

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26. δύω δέ μιν ἀμφὶς ἔχουσαι
Ἄρκτοι ἅμα τροχόωσι.....

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

(I. 301.)

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30. εἰ ἐτεὸν δὴ,
 Κρήτηθεν κείναι γε Διὸς μεγάλου ἰοτητι,
 Οὐρανὸν εἰσανέβησαν.....

27. With mortals once they dwelt ; if truth belong
 To old tradition, and the Poet's song.

Aratus prefaces the first fable which he introduces with *εἰ ἐτεὸν δὴ* : 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 Cynosura, 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.

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37. Ἑλίκη γε μὲν ἄνδρες Ἀχαιοὶ
 εἰν ἀλὶ τεκμαίρονται, ἵνα χρὴ νῆας ἀγνείν,
 τῇ δ' ἄρα Φοίνικες πύσσυνοι περώσσι θάλασσαν.
37. Pleasing to sight is HELICE's bright team,
 And Grecian sailors hail her guiding beam.

The Greeks guided their course by the constellation Helice ; but the Phœnicians, 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 “Ἑλικώπες,” “observing Helice,” to the Greek sailors :

τὴν μὲν γὰρ συν νηὶ θοῇ ἑλικώπες Ἀχαιοὶ
 ἔς Χρύσην πέμπουσιν..... (Il. i. 389.)

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

(Ovid.)

“Thales, qui diligenter de his rebus exquisivit et hanc prius 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 hac studiosius perspicendo diligentius navigare existimantur et vere eam ab inventoris genere PHŒNICE appellant.”

(Hyginus.)

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61. Κείνη που κεφαλὴ τῇ νήχεται, ἤχί περ ἄκραι
Μίσγονται δύσιές τε καὶ ἀντολαὶ ἀλλήλησι.

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 ἀρκτικὸς κύκλος ἀφορίζει τὰ ἀεὶ θεωρουμένα. (Proclus.) A star which lies upon this circle descends westerly to the horizon, and without disappearing rises easterly. Ἐπ' ἄκροις τοῖς τοῦ ὠκεανοῦ ὕδασι νέρχεται. οὐ γὰρ καταδύεται, ἀλλ' ὡς ὑπὲρ αὐτοῖς ἐπινήχεται." (Sch.) Hence the Poets said, at this point the east and west meet together:

“Ἐγγὺς γὰρ νυκτός τε καὶ ἡματός εἰσι κέλευθοι.”
(Od. 8. 86.)

..... Νύξ τε καὶ ἡμέρα ἄσσον ἰοῦσαι.
(Hes. Theog. 748.)

This circle was, according to Aratus, 52° north, corresponding with the latitude of Athens 38°. It may here be remarked that Aratus uses the words ocean and sea as synonymous to the horizon. Virgil imitates Aratus in his description of the Dragon:

Maxumus hic flexu 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 μογέοντι κυλίνδεται ἀνδρὶ εἰκός
Εἰδῶλον, τὸ μὲν οὐ τις ἐπίσταται ἀμφαδὼν εἰπεῖν,
Οὐδέ τι κρέμαται κείνος πόνω· ἀλλὰ μιν αὐτῶς
ἘΝΤΟΝΑΣΙΝ καλέουσι.

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 ENGNASIN 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 causæ.”
 (i. 321.)

Again:

“Nixa genu species et Graio nomine dicta
 Engnasi, ignotâ facies sub origine constat.”
 (v. 645.)

This constellation is thus described by the Scholiast:

Πλησίον τῆς τοῦ δράκοντος κεφαλῆς ἀνδρὶ μογέοντι καὶ κάμνοντι ὅμοιος κυλίνδεται. Οὐ καθ' αὐτὸν δὲ κυλίνδεται· συγκαταφερομένη γὰρ τῷ οὐρανῷ συγκαταφέρεται· ἀλλὰ πρὸς τὴν θέσιν ἀποβλέπει· καὶ γὰρ ὁ κλάσας καὶ καταπεσὼν ἐστίν, ὡς ἀπὸ τινος καμάτον· περὶ δὲ τοῦ Εἰδώλου τούτου, οὐδεὶς ἱστορήσαι ἴσχυσεν, ἀλλὰ μόνον τὸν ἐν γούνασιν αὐτὸ προσεῖπον, ἥγουν ὠνόμασαν. Ὁκλάζοντι δὲ ἔοικε κατὰ τὴν θέσιν. Εἶδωλον 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 Serpentarius, 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 Lyræ:”

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

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71. Αὐτοῦ κακῆϊνος Στέφανος, τὸν ἀγανὸν ἔθηκε
 Σῆμ’ ἔμειναι Διόνυσος, ἀποικομένης 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 δ’ ἐμμενὲς εὖ ἐπαρηρὼς
 Ποσσὶν ἐπιθλίβει μεγαθηρίον ἀμφοτέρωσι
 Σκορπίον.....

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. Χηλάς, the claws, occupying one whole sign, or 30 degrees, are termed μεγάλας, (89.)

Νέιοθι δὲ σπείρης μεγάλας ἐπιμαίεο Χηλάς.

Beneath its coils the giant CLAWS are found.

PAGE 36.

92. τὸν ῥ’ ἄνδρες ἐπικλείουσι Βωώτην,
 Οὐνεχ’ ἄμαξάϊς ἐπαφώμενος εἶδεται Ἄρκτου.

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

“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. Ἡμάτιος δὲ ὑπέργειος. Ἑννευχος ὑπόγειος. (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. ἧ ρ' ἐν χερσὶ φέρει στάχυν αἰγλήεντα.

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 sinistrâ
Fulget spica manu ”

PAGE 37.

123. Οἷν χρύσειοι πατέρες γενεὴν ἐλίποντο
Χειροτέρην, ὑμεῖς δὲ κακώτερά τ' ἐξείεσθε.

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

“Œtas parentum pejor avis tulit
Nos nequiores mox daturos
Progeniem vitiosiore.”

(Hor. Od. 11. 7. 46.)

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137. Τῆς ὑπὲρ ἀμφοτέρων ὥμων εἰλίσσεται ἀστήρ
Δεξιτερῇ πτέρυγι· Προτρυνγῆτῃρ δ' αὐτὲ καλεῖται.

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

Προτρυνγητήρ, 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 πρό ποδῶν φέρεται καλός τε μέγας τε
Εἷς μὲν ὑπωμαίων, εἷς δ' ἱξυόθεν κατίοντων,
Ἄλλος δ' οὐραίοις ὑπὸ γονύασιν

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 Προτρυνγητήρός εἰσιν ἄστερες δ. εἷς μὲν πρό τῶν ποδῶν αὐτῆς, εἷς δὲ ὑπὲρ τοὺς ὤμους, εἷς δὲ ἀπὸ τῆς ὀσφύος, εἷς δὲ μεταξὺ τῆς οὐρᾶς καὶ τῶν ὀπισθίων γονάτων τῆς μεγάλης Ἀρκτου.

(Scholiast.)

"Virginis at placidæ præstanti 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:

Quâ sunt prima feræ vestigia, præminet ignis;
Altera, quâ pedibus regio est clunalibus, ardet
Stella itidem; genibusque dehinc se tertia promit."

(Buhle.)

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

Οἶός οἱ πρό ποδῶν φέρεται καλός τε μέγας τε
Εἷς μὲν ὑπωμαίων, εἷς δ' ἱξυόθεν κατίοντων,
Ἄλλος δ' οὐραίοις ὑπὸ γονύασιν.

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

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145. ἀλλ' ἄρα πάντες
 Ἀπλόοι, ἄλλοθεν ἄλλος ἀνωνυμίῃ 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 Κόνων ἔβλεψε ἐν ἡέρι τον Βερονίκης
 Βόστρυχον, ὃν τ' ἄρα κείνη πᾶσιν ἔθηκε θεοῖσιν.”

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

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147. Κρατὶ δέ οἱ Δίδυμοι μέσση δ' ὑπὸ Καρκίνος ἐστί.
 Ποσσὶ δ' ὀπισθοτέροισι Λέων ὑπὸ καλὰ φαίνει.
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.

honoured with a place among the constellations. Aratus and Manilius call him Heniochus, quasi ἡνίοχον ἔχων, "habenas-tenens."

"Tum vicina ferens nixo vestigia tauro
Heniochus, studio mundumque et nomen adeptus;
Quem primum curru volitantem Jupiter alto
Quadrijugis conspexit equis, cœloque 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. Æn. IX.)

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

(Man. I. 372.)

"..... neque
Tumultuosum sollicitat mare,
Nec sævus Arcturi cadentis
Impetus, aut orientis Hœdi."

(Hor.)

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167. Πὰρ ποσὶ δ' Ἡνιόχου κεράων πεπτήτοτα Ταῦρον
Μαίεσθαι.....

179. Beneath Auriga, turning to the east,
The Tyrian BULL.....

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 cœlum tenet. Aspice Taurum
Clunibus, et Geminos pedibus, testudine Cancrum
Surgere: cum rectis oriantur 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 September; and only 178 in passing through Libra, Scorpio, Sagittarius, 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, extremoque inrorat Aquarius anno.’

(Georg. III. 303.)

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172.οὐδέ τοι αὔτως
Νήκουστοι Ἰάδες, τὰ μέν ῥ’ ἐπὶ παντὶ μετώπῳ
Ταυροῦ βεβλέαται.....

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.)

According to Hesiod there were five Hyads :

“.....νύμφαι Χαρίτεσσιν ὁμοῖαι,
 Φαισύλη, ἥδὲ Κορωνίς, ἔϋστεφανός τε Κλέεια,
 Φαίω θ' ἰμερόεσσα, καὶ Εὐδώρα τανύπεπλος·
 Ἄς Ὑάδας καλέουσιν ἐπὶ χθονὶ φῦλ' ἀνθρώπων.”

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176.συνεληλάμενοι δὲ φέρονται·
 Ἄλλ' ἀεὶ Ταῦρος προφερέστερος Ἡνίοχοιο
 Εἰς ἑτέραν καταβῆναι, ὁμηλυσίη περ ἀνελθών.
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' ἄρα Κηφῆος μογερόν γένος Ιασιίδαο
 Αὔτως ἄρ' ῥήτον κατακείμεται.

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 ζώνης ὀλίγον κε μεταβλέψειας*
Πρώτην ἱεμενος καμπὴν σκολιοῖο δράκοντος.
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. *Οἷνδ' ἐκ κληῖδι θύρην ἔντοσθ' ἀραρυῖαν*
Δικλίδ' ἐπιπλήσσοντες ἀνακρούουσιν ὀχῆες,
Τοῖόν τοι μουνὰς ὑποκείμενοι ἰνδάλλονται
Ἄστερες.
201. When the bifolding door the warder bars,
 His crooked key depict her glittering stars.

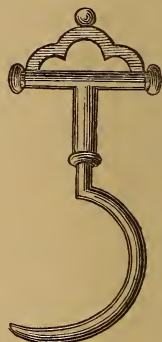
* "Navis Κῆτος dicta quæ (προτομήν) protomen ceti in prorâ præferebat ἢ κητόπρωρος. Eadem naves κητίδες et κητήναι dicebantur. (Hofm.)

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

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

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

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, *ἐγκαμπέα κληΐδα*, according to Eustathius "*δρεπανοειδῆ*," "sickle-shaped;" and he confirms his opinion by a figure.



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197. Αὐτοῦ γὰρ καὶ κείνο κυλινδρεται αἰνὸν ἄγαλμα
Ἀνδρομέδης.

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 pœnæ 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 Hymenæus erat: solataque publica damna
Privatis lacrymis ornatur victima pœnæ,
Induiturque sinus non hæc ad vota paratos,

Virginis et vivæ rapitur sine funere funus.
Ac simul infesti ventum est ad littora ponti,
Mollia per duras panduntur brachia cautes :
Et cruce virgineâ moritura puella pependit.
Servatur tamen in pœna cultusque pudorque.
Supplicia ipsa decent. Nivea cervice reclinis
Molliter ipsa, suæ custos est ipsa figuræ.
Defluxere sinus humeris, fugitque lacertos
Vestis, et effusi scapulis lusere capilli.
Te circum Alcyones pennis planxere volantes,
Fleveruntque tuos miserando carmine casus,
Et tibi contextas umbram fecere per alas.
Ad tua sustinuit fluctus spectacula pontus,
Assuetasque sibi desiit perfundere ripas.
Extulit et liquido Nereis ab æquore vultus ;
Et casus miserata tuos roravit et undas.
Ipsa, levi flatu refovens pendentia membra,
Aura per extremas resonavit flebile rupes.
Tandem Gorgonei victorem Persea 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 pœnæ 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
Cœperat, et longo fugiebant agmine 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,

Atque ipsi metuunt montes, scopulique ruentem.
 Infelix virgo, quamvis sub vindice tanto,
 Quæ tua tunc fuerat facies? quam fugit in auras
 Spiritus? ut toto caruerunt sanguine membra?
 Cum tua fata cavis e rupibus ipsa videres,
 Adnantemque tibi poenam, pelagusque ferentem,
 Quantula præda maris? Plausis hic subvolat alis
 Perseus, et cœlo pendens sic fertur in hostem,
 Gorgoneo tinctum defigens sanguine ferrum.
 Illa subit contra, versamque a gurgite frontem
 Erigit, et tortis innitens orbibus alte
 Emicat, ac toto sublimis corpore fertur.
 Sed quantum illa subit, seque ejaculata profundo est,
 Is tantum revolat, laxumque per æthera ludit
 Perseus, et Ceti subeuntis verberat ora.
 Nec cedit tamen illa viro, sed sævit in auras
 Morsibus, et vani crepitant sine vulnere dentes.
 Efflat et in cœlum pelagus, mergitque volentem
 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 confossis subsedit bellua membris,
 Plena maris, summasque iterum remeavit ad undas,
 Et magnum vasto contextit corpore pontum,
 Tunc quoque terribilis, nec virginis ore videnda.”
 (Lib. v. 540—611.)

Ovid represents Andromeda as of a dark complexion:

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

(Sapp. ad Phaon.)

Manilius describes her as fair, “nivea cervice.”

PAGE 41.

206. ξυνὸς δ' ἐπιλάμπεται ἀστὴρ,
 Τοῦ μὲν, ἐπ' ὀμφαλίῳ τῆς δ', ἐσχατόωντι καρήνῳ.

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 Andromeda touches the extremity of the figure of Pegasus, and is one of the stars in the square, by which this constellation is distinguished.

PAGE 42.

220. οἱ δὲ νομῆες
 Πρῶτοι κείνο ποτὸν διεφήμεσαν Ἴππου κρήνην.

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

“Ἴππουκρήνη,” “Hippocrene,” “the fountain of the horse.”

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225. Αὐτοῦ καὶ Κριοῖο θοώταταί εἰσι 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, *θοώταταί εἰσι 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 Triangle, and under the bright star Mirach in the girdle of Andromeda; he runs also in the same path as Chelæ, 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. Manillius represents him in one place as admiring his own golden fleece :

“Et sua respiciens aurato vellera tergo.”
(II. 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.”
(I. 264.)

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250. Αὐτὰρ ὅγ' ἐν βορέῳ φέρεται περιμήκετος ἄλλων.

256. His giant strides the blue vault climb.

“Ὁ δὲ ἐν τῷ βορείῳ ἔστί κύκλῳ τῶν ἄλλων μείζων κατὰ τὴν
φαντασίαν, τῆς τε Κασσιόπείας, 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 satis est testata parentem.”
(Germanicus.)

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252.τὰ δ' ἐν ποσὶν οἶα διώκων
Ἴχθυα μῆκύνει, κεκονισμένος ἐν Διὶ πατρὶ.

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 Κονίην πεδίοιο; 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.)

PAGE 43.

254. Ἀγχι δὲ οἱ σκαίῃς ἐπιγουνίδος ἦλιθα πᾶσαι
Πληιάδες φορέονται.....

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 cœlum, divesque puellis,
Pleiadum parvo referens glomeramine sidus.”

(IV. 522.)

The Pleiads were called by the Romans “Vergiliæ.” 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 ταί γε μετ’ ἀνθρώπους ὑδέονται,
Ἐξ οἶαι περ εἶναι ἐπόψιαι ὀφθαλμοῖσιν.

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.

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268. Καὶ Χέλυσ, ἥτ' ὀλίγη· τὴν δ' ἄρ' ἔτι καὶ παρὰ λίκνῳ
Ἑρμείας ἐτόρησε.

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 immediately 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.....

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275. Ἦτοι γὰρ καὶ Ζηνὶ παρατρέχει αἰόλος Ὅρνις.

283. Jove's mottled SWAN.....

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.

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287. Μὴ κείνῳ ἐνὶ μὴνὶ περικλύζοιο θαλάσση.

299. Hapless the mariners, who rashly brave.

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 δ' ὁμοίως καὶ ἡ τῶν προσώπων ἀντιμετάθεσις, καὶ πολλάκις ἐν μέσοις τοῖς κινδύνοις ποιοῦσα τὸν ἀκροατὴν δοκεῖν στρέφεσθαι

Ὁ Ἄρατος:

Μὴ κείνῳ ἐνὶ μὲν περικλύζοιο θαλάσσῃ.”

(Sect. xxvi.)

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299.ὀλίγον δὲ διὰ ξύλον αἰδ' 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 leto, quantum rate fluctibus absunt."

(Germanicus.)

Longinus, having quoted the description of a storm from Homer (Il. 15. 624), remarks, that Aratus has imitated the passage; and in these words, "ὀλίγον δὲ διὰ ξύλον αἰδ' 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 "ξύλον αἰδ' 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 δ' ἔπεισ', ὥς ὅτε κῦμα θοῇ ἐν νηὶ πέσῃσι
Λάβρον ὑπαὶ νεφέων, ἀνεμοτρεφές· ἡ δέ τε πᾶσα
Ἄχνη ὑπεκρύφθη, ἀνέμοιο δὲ δεινὸς ἀήτης
Ἰστίῳ ἐμβρέμεται τρομέουσι δέ τε φρένα νῆυται
Δειδιότες τυτθὸν γὰρ ὑπ' ἑκ θανάτοιο φέρονται.”

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316. Δελφίς δ' οὐ μάλα πολλὸς ἐπιτρέχει αἰγοκερῆϊ,
Μεσσόθεν ἡερόεις· τὰ δέ οἱ περὶ τέσσαρα κείται
Γλήνεα, παρβολάδην δύο, πὰρ δύο πεπηῶτα.

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 volucres, acrior telo. Delphinus non homini tantum amicum animal, verum et musicæ arti, mulcetur symphoniciæ cantu, et præcipue hydraulici sono. Hominem non expavescit, ut alienum: obviam navigiis venit, alludit exultans, certat etiam, et quamvis plena præterit vela.”

“Tum quoque de ponto surgit Delphinus ad astra,
Oceanici cœlique decus, per utrumque sacratus.”

(Manil. i. 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 γὰρ ἐστὶν ἡ ἐν τῇ ὀφθαλμῷ κόρη.”

(Scholiast.)

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322. Λοξὸς μὲν Ταύροιο τομῇ ὑποκέκλιται αὐτὸς
'Ὠρίων.

343. Athwart the Bull first rise—majestic sight!
ORION'S giant limbs and shoulders bright.

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 cœli 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 recedant.

(Man. i. 395.)

Maximus Orion magnumque amplexus Olympum.

(Man. v. 58.)

On the face of Orion are three small stars, to which Manilius 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 JUGULÆ, 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.)

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326. Τοῖος οἱ καὶ φρουρὸς ἀειρομένῳ ὑπὸ νότῳ
φαίνεται ἀμφοτέροισι Κύων ὑπὸ ποσσὶ βεβηκὼς,
Ποικίλος

347. Nor with less ardour, pressing on his back,
The mottled HOUND pursues his fiery track.

Homer styles Sirius (this name is as often applied to the constellation itself as to the bright star in the mouth of the Dog) “κύν’ Ὀρίωνος,” “the dog of Orion.” Aratus applies the epithet “ποικίλος,” “mottled,” to the dog, for the same reason as he does αἰόλος 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 vertice Tauri,
 Proventus frugum varios, et tempora discunt;
 Quæque valetudo veniat, concordia quanta.
 Bella facit, pacemque refert, varieque revertens
 Sic movet, ut vidit, mundum, vultuque gubernat.
 Magna fides hoc posse, color, cursusque micantis
 In radios: vix sole minor; nisi quod procul hærens
 Frigida cœruleo contorquet lumina vultu.
 Cetera vincuntur specie, nec clarius astrum
 Tingitur oceano, cœlumve revisit ab undis.”

(Man. i. 403.)

Horace, in his ode “Ad fontem Blandusiæ,” says:

“Te flagrantis atrox hora Caniculæ
 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 cometæ
 Sanguinei lugubre rubent; aut Sirius ardor:
 Ille sitim morbosque ferens mortalibus ægris
 Nascitur, et lævo contristat lumine cœlum.”

(En. 10. 275.)

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331. ὅς ῥα μάλιστα
 'Οξέα σειριάειν· καί μιν καλέουσ' ἄνθρωποι
 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, “Σειρέω,” “to dry up:” “Σειριάω,” “to burn by the rays of the sun, or of a star;” and Σαίρω, “Hio,” “to open the mouth as an angry dog,” are derived from Σείριος, the Greek form of 𐤊𐤍, a Phœnician word, signifying, “princeps,” “chief,” “the chief star,” “a title of the sun.”

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339. αὐτὰρ ὅγ' αἰεὶ
 Σείριος ἐξόπιθεν φέρεται μετίοντι ἑοικώς.

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

Manilius says that those men who are born under the influence 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 astris?
 Prægressum quærit leporem comprehendere cursu.”

(v. 231.)

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342. Ἡ δὲ Κυνὸς μέγαλοιо κατ' οὐρὴν ἔλκεται Ἀργῶ
 Πρυμνόθεν· οὐ γὰρ τῇ γε κατὰ χρέος εἰσι κέλευθοι,
 Ἄλλ' ὅπιθεν φέρεται τετραμμένη, οἷα καὶ αὐταὶ
 Νῆες, ὅταν δὴ ναῦται ἐπιτρέψωσι κορώνην,
 Ὅρμον ἐσερχόμενοι.

363. 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
 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.”

(Æn. vi. 3.)

“Continuo puppes abrumpunt vincula ripis,
 Delphinumque modo demersis æquora rostris
 Ima petunt.. .. .”

(Æn. ix. 118.)

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353. Τὴν δὲ καὶ οὐκ ὀλίγον περ ἀπόπροθι πεπτηνίαν
 Ἀνδρομέδην μέγα Κῆτος ἐπερχόμενον κατεπέιγει.

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

“Læva sub extremis consurgunt sidera Ceti
 Piscibus Andromedam ponto cœloque sequentis.”

(Man. v. 656.)

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373. τὰ τις ἀνδρῶν οὐκέτ' ἐόντων
 Ἐφράσατ' ἥδ' ἐνόησεν ἅπαντ' ὀνομαστὶ καλέσσαι,
 Ἥλιθα μορφώσας.

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 :

Certa 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 mutatoque ordine fertur.

Quid tam confusum specie, quid tam vice certum est?

Ac mihi tam præsens ratio non ulla 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 cœli,

Ætheraque immensis fabricantem finibus orbes

Solventemque alios constare; et cuncta reverti

In sua principia, et rerum mutare figuras.

Si fors ista dedit nobis fors ipsa gubernet.

At cur dispositis vicibus consurgere signa,

Et velut imperio præscriptos reddere cursus,

Cernimus; ac nullis properantibus ulla relinqui?

Cur eadem æstivas exornant sidera noctes

Semper, et hybernas eadem? certamque figuram

Quisque dies reddit mundo, certamque relinquit?

Jam tum, cum Graiæ 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 obscuræ noctis deprendere signis

Jam poterant: cœlumque suas distinxerat horas.

Quot post excidium Trojæ sunt eruta regna?

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

(I. 482—530.)

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397. Εἰς μὲν ὑπ' ἀμφοτέροισι ποσὶν καλὸς τε μέγας τε
 Ὑδροχόου· ὁ δὲ κυανέου ὑπὸ Κήτεος οὐρῇ.

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. ὀλίγοι γέμεν ἄλλοι
 Νείοθεν Τοξευτῆρος ὑπὸ προτέροισι πόδεσσι
 Δινωτοὶ κύκλῳ περιγέες εἰλίσσονται.

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 aliæ volitant parvo cum lumine claræ,
Atque priora pedum subeunt vestigia magni
Arcitenentis, et obscuræ sine nomine cadunt.”

Festus Avienus thus :

.....“qua se vestigia prima
Cornipedis simulant, circumvolvuntur Olympo,
Queis face sub tenui tenebrosus marceat ignis.”

Germanicus thus :

.....“Est et sine honore Corona
Ante Sagittiferi paulum pernicia crura.”

Grotius conjectures that Cicero and Germanicus read ἄγ-
νωτοι for δινωτοί. Manilius does not mention CORONA among
the southern constellations.

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402. Ἀτὰρ ὑπ' αἰθομένῳ κέντρῳ τέρας μεγάλοιο
Σκορπίου ἄγχι νότοιο Θυτήριον αἰωρεῖται.

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.”

Ipsius hinc mundi templum est, victrixque solutis
Ara nitet sacris, vastos cum terra gigantas
In coelum furibunda tulit ; cum Di quoque magnos
Quæsiwere 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

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

(I. 427—439.)

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404. Τοῦ δὴ τοι ὀλίγον μὲν ἐπὶ χρόνον ὑψοθ' ἐόντος
Πεύσειαι· ἀντιπέρην γὰρ αἰρείεται Ἀρκτούροιο.

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

The Scholiast thus explains the passage:

Ἔλαβε δὲ τὸν Ἀρκτοῦρον, ἐπειδὴ καὶ αὐτὸς ἐπιφανέει τοῦ βορείου κύκλου ἢ πόλου, ὥσπερ καὶ τὸ θυτήριον του ἀνταρκτικοῦ, καὶ ἔστιν οὕτως· ἀνατέλλει μετὰ Λέοντος ὁ Ἀρκτοῦρος, ἰδὸν δύο ὥραι· εἶτα Παρθένης, ἰδὸν δ'· εἶτα Ζυγὸς ἰδὸν ὥραι 5'. εἶτα Σκορπίος, ἰδὸν ὥραι 7'. Καὶ τότε μετὰ ὥραν ὀγδόην τὸ θυτήριον ἀνατέλλει, εἶτα Τοξότης, ὥραι 1'. Αἰγόκερως 1β'. Ὑδροχόος 1δ'. εἶτα Ἰχθύες, ὥραι 15'. καὶ τοῦ Θυτηρίου ὥραι 7'. ὁκτώ οὖν ὥρας ποιῶσαν θύεται τὸ Θυτήριον· ὁ δὲ Ἀρκτοῦρος 15'. ὑπέργειος μὲν γὰρ οὗτος. ὑπόγειον δὲ ἐκεῖνο, καὶ ἐναντίον τούτου πορεύεται. διὸ καὶ τὸ μὲν θᾶπτον δύνει· ὁ δὲ μέζονας ἔχει τὰς περιφοράς.

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 δέ οἱ ἀπρίξ
Ἄλλο μάλ' ἐσφῆκωται ἐληλάμενον διὰ χειρὸς
Θηρίον· ὥς γάρ μιν πρότερον ἐπιφημίζαντο.

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

Ἐχει δὲ καὶ ἐν ταῖς χερσὶ τὸ λεγόμενον θηρίον, οὗ ποιούσι τὸ σχῆμα τεταγμένον. Τινὲς δὲ φασιν, ἀσκὸν αὐτὸ εἶναι οἴνου, ἐξ οὗ σπένδει τοῖς Θεοῖς ἐπὶ τὸ Θυτήριον.

(Schol.)

Τὸ λέγειν ἄλλο θηρίον, οὗ πρὸς αὐτὸν τὸν Κένταυρον ἀντι-
διέστειλεν· ἄτοπον γὰρ, θηρίον λέγειν τὸν Κένταυρον Χείρωνα,
πάντων Κενταύρων λογιώτατον καὶ δικαιοτάτον· ἀλλὰ πρὸς
ἀντιδιαστολὴν τοῦ Σκορπίου, ὃς ὑπέρκειται τοῦ Κενταύρου, τὸ
ἄλλο θηρίον εἶπεν· ἄμεινον γὰρ οὕτως ἀκοῦσαι.

(Schol.)

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450. Ναὶ μὴν καὶ Προκύων Διδύμοις ὑπὸ καλὰ φαίνεται.

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

Προκύων, Procyon: so called, because he rises before Κύνων,
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 flammæ
Et rabiit igne suo geminatque incendia solis.

(v. 207.)

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458. Μακροὶ δὲ σφέων εἰσὶν ἐλισσομένων ἐνιαυτοί.
Μακρὰ δὲ σήματα κείται ἀπόπροθεν εἰς ἐν ἔόντων.

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

“Αἰνίττεται δὲ τὸ εἰρημένον ὑπὸ τῶν φυσικῶν φιλοσόφων καὶ
μαθηματικῶν, ὧν ὁ δοκιμώτερος Πλάτων· ἐκέκινον γὰρ εἶπον μέγαν

ἐνιαυτὸν, ὅταν συνέρχωνται οἱ ζ' οὗτοι ἀστέρες ἐν ἐνὶ ζωδίῳ, ὑπὸ τὴν αὐτὴν μοῖραν· τότε γὰρ συμπέρασμα τῆς οἰκουμένης γίνεται, καὶ ἀπόλλυται οὗτος ὁ κόσμος. Συνελθόντων αὐτῶν, καὶ πάλιν κινήθέντων ἐκ τοῦ αὐτοῦ, ἀνάνευσιν καὶ κτίσιν εἶναι κόσμον ἄλλον ἔφασαν. Ἐψήφισαν δὲ καὶ εὖρον γίνεσθαι ἐν μυριάσι πολλῶν ἐνιαυτῶν. Ὅταν οὖν ἀπὸ τοῦ αὐτοῦ σημείου ἐπὶ τὸ αὐτὸ σημεῖον καταστήσωσιν οἱ πάντες, ἐνιαυτός ἐστιν· ὅταν γὰρ, ἀφ' οὗ τις ἄρξηται σημείου ἢ χρόνου, ἐπὶ τὸ αὐτὸ πάλιν ἔλθῃ, ἐνιαυτός ἐστιν."

(Scholiast.)

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

Manilius, 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. Κεῖνο περιγληνὲς τροχαλὸν, Γάλα μιν καλέουσιν.

483. The MILKY ZONE.....

Manilius 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?"

(I. 753.)

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

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478.τὰ δὲ μέτρα τόσοι πισύρων περ ἔόντων
Οἱ δύο τοὶ δὲ σφέων μέγα μείονες εἰλίσσονται.
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.

PAGE 54.

535. μία δὲ σφεῶν ἐστὶν ἐκάστου
Ἐξείης ἐκάτερθε κατηκλυσίη ἄνοδός τε.
Αὐτὰρ ὅγ' ὠκεανοῦ τόσσον παραμείβεται ὕδωρ,
Ὅσσον ἀπ' Αἰγιοκερῆος ἀνερχομένοιο μάλιστα
Καρκίνον εἰς ἀνίοντα κυλίνδεται.....
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. Ὅσσον δ' ὀφθαλμοῖο βολῆς ἀποτέμνεται αὐγή,
Ἐξάκις ἂν τόσσ' ἡμῖν ὑποδράμοι. Αὐτὰρ ἐκάστη,
Ἴση μετρηθεῖσα, δύο παρατέμνεται ἄστρο.
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.

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.



PAGE 55.

556. ...Τόσον δ' ἐπὶ μῆκος ἐκάστη
 Νύξ αἰεὶ τετάνυσται, ὅσον τέ περ ἡμῖν κύκλου
 Ἀρχομένης ἀπὸ νυκτὸς αἰίρεται ὑψόθι γαίης.

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

Ὁ δὲ λόγος, ἐκάστη νύξ ἐπὶ τοσοῦτον μῆκος γίνεται, ἢ τοσοῦτον ἔχει διάστημα τῆς περιφερείας, ὅσον ἀπὸ νυκτὸς ἀρχομένης ἐπαίρεται καὶ περιάγεται μέρος τοῦ κύκλου τὸ ἡμῖν ἐπέχον ἕξ ζῳδίων, εἰ ἀρχομένης τῆς νυκτὸς ἀνατέλλει Καρκίνος περὶ πρώτην καὶ δευτέραν ὥραν, τοσοῦτον ἔξει διάστημα, ἕως οὗ πάλιν ἐπὶ δύσιν ἔλθῃ. Καὶ ἀνυσθέντος τοῦ ἡμικυκλίου ἀπὸ Καρκίνου ἕως Τοξότου, τὸ πᾶν τῆς νυκτὸς μῆκος τελεῖται.

(Scholiast.)

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.)

PAGE 56.

582. ὃ δ' ἐπὴν φάεος κορέσεται,
Βουλυτῷ ἐπέχει πλεῖον δίχρα νυκτὸς ἰούσης,
ἥμος ἡελίοιο κατερχομένοιο δύηται.
603. 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.

The constellation Bootes 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.

PAGE 59.

636. Ὃς καὶ ἐπερχόμενος φοβέει μέγαν Ὠρίωνα.
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 Cænopion, 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 :

“ integræ
Tentator Orion Dianæ
Virgineâ domitus sagittâ.”

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

..... Ὠρίωνα πελώριον εἰσενόησα
Θήρας ὁμοῦ εἰλεῦντα κατ' ἀσφοδελὸν λειμῶνα·
Τοῦς αὐτοὺς κατέπεφνεν ἐν οἰοπόλοισιν ὄρεσσι,
Χερσὶν ἔχων ῥόπαλον παγγάλκεον αἰὲν ἀγέες.

(Od. 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, “Ὠρίωνος δύσιν, καὶ ἀνατολὴν παραχώδη.” To this notion the poets frequently allude :

Quam subito adsurgens fluctu nimbosus Orion
In vada cæca tulit.

(Æn. i. 534.)

Quam multi Libyco volvuntur marmore fluctus,
Sævus ubi Orion hibernis conditur undis.

(Æn. vii. 718.)

Nec sidus atrâ nocte amicum appareat
Quâ 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 :

..... Quam magnus Orion,
Cum pedes incedit medii per maxima Nerei
Stagna viam scindens, humero supereminet undas.
(Æn. x. 703.)

The mistake has arisen from the poets applying to Orion the fables relating to Bootes.

NOTES ON THE DIOSEMEIA.

PAGE 64.

20. Γινώσκεις τάδε καὶ σύ· τὰ γὰρ συναίδεται ἤδη
Ἐννεακαίδεκα κύκλα φαινοῦ Ἡελίοιο.
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 æra 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.

PAGE 64.

22. Ὅσσα τ' ἀπὸ ζώνης εἰς ἔσχατον Ὠρίωνα
Νύξ ἐπιδινεῖται, κύνα τε θρασὺν Ὠρίωνος.
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.

"Sed primæva Meton exordia sumpsit ab anno,
 Torreret rutilo cum Phœbus sidere Cancrum,
 Cingula cum veheret pelagus procul Orionis,
 Et cum cæruleo flagraret Sirius astro."

(Fest. Avien. 49—50.)

PAGE 70.

160. Σκέπτεο καὶ φάτνην· ἡ μὲν τ' ὀλίγη εἰκὺα
 Ἀχλὺς.

183. PHATNE, a nebulous bright spot.....

"Ἐν τῷ Καρκίνῳ δύο ἀστέρες εἰσὶν, οἱ καλούμενοι ὄνοι· ὧν τὸ
 μεταξὺ τὸ νεφέλιον, ἡ φάτνη καλουμένη. τοῦτο δὲ ἐὰν ζοφῶ-
 δες γένηται, ὕδατικόν."

(Theophrast.)

Again,

"ἡ τοῦ ὄνου φάτνη εἰ συνίσταται καὶ ζοφερά γίνεται, χει-
 μῶνα σημαίνει."

(Theophrast.)

PAGE 71.

177. Σῆμα δέ τοι ἀνέμοιο καὶ οἰδαίνουσα θάλασσα
 Γιγνέσθω.

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 misceri, et nemorum increbescere murmur.
 Jam sibi tum curvis male temperat unda carinis:
 Quum medio celeres revolant ex æquore mergi,
 Clamoremque ferunt ad litora; quumque marinæ
 In sicco ludunt fulicæ; notosque paludes
 Deserit, atque altam supra volat Ardea nubem."

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

PAGE 71.

181. Καὶ δ' ἂν ἐπὶ ξηρὴν ὄτ' ἐρωδιὸς οὐ κατὰ κόσμον
'Εξ ἁλὸς ἔρχηται φωνῇ περὶ πολλὰ λεληκως.

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

'Ερωδιὸς. Ardea. The Hern.

There were, according to Aristotle, three species of Herns :
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.

PAGE 71.

184. Καὶ πότε καὶ κέπφοι, ὅπότε' εὐδιοὶ ποτέωνται,
'Αντία μελλόντων ἀνέμων εἰληδὰ 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. Ger-
manicè, 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' ἀγριάδες νῆσσαι

212. the WILD DUCKS soar.

"Νῆττα, Anas. Anglicè, a Duck. Germanicè, eyn Endt."

Plinius :

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

(Turner.)

PAGE 71.

186. ἡ ἐν ἀλὶ δῖναι
Aἰθυια

210. And diving CORMORANTS.....

“*Aἰθυια*, *Mergus*. Anglicè, Cormorant. Germanicè, Eyn Duecker.”

Aristoteles :

“*Mergus marina avis est, ex piscium venatu victitans, subit tamen altius in fluvios.*”

(Turner.)

PAGE 72.

216. **Η τρύζει ὀρθινὸν ἐρهماίη ὀλολυγών.*

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

There is a great variety of opinions respecting the word Olo-lygo. Hyginus renders it “*Bubo*,” an Owl. Avienus latinises “*Ololygo*,” 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) cohæret, intimâ absolutâ a gutture quum vocem mittunt: Mares tum vocantur Ololygones; stato id tempore evenit cientibus 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.*”

We have in Theocritus, who was contemporary with Aratus :

Τοὶ δὲ ποτὶ σκιεραῖς ὀροδαμνίσιν αἰθαλίωνες
 Τέπτιγες λαλαγέυντες ἔχον πόνον· ἅ δ' ὀλολυγῶν
 Τηλόθεν ἐν πυκινῇσι βάτων τρύζεσκεν 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 ἀθρόον ὥφθεν ἴουλοι
 Τείχη ἀνέρποντες

256. While numerous insects creep along the wall.

Ὁ ἴουλος σκώληξ ἐστὶ πολύπους.

(Schol.)

PAGE 75.

278. “Γέρανος,” grus, a crane.

300. “Grues multa prudenter faciunt: loca enim longinqua petunt, sui commodi gratiâ, et altè volant, ut procul prospicere possint, et si nubes tempestatemve viderint, conferunt se in terram.”

(Arist.) (Turner.)

PAGE 75.

292. Καὶ σπίνος ἡῶα σπίζων.

317. When SPARROWS ceaseless chirp at dawn of day.

313. "Spinum Aristotelis grenefincam nostram esse arbitror."
(Turner.)

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

PAGE 76.

312. Πρίνοι δ' οὐ καρποῖο καταχθέες, οὐδὲ μέλαιναί

331. Σχῖνοι ἀπείρητοι.

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 "μελαίνη," "black," and, according to Aratus and Cicero, it produced three crops in each year.

"Jam vero semper viridis semperque gravata
Lentiscus triplici solita grandescere foetu,
Ter fruges fundens tria tempora monstrat arandi."

"Non hoc quidem quaero, cur hæc 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. Οἷος ἐπὶ σφήκεσσιν ἐλίσσεται αὐτίκα δίνος.

351. If from the earth the numerous HORNETS rise,
Sweeping a living whirlwind through the skies.

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

Θήλειαι δὲ σύες, θήλειαι δὲ μῆλα, καὶ αἶγες,
Ὅππότ' ἀναστρωφῶσιν ὀχῆς, τὰ δέ γ' ἄρρ' ἐνα πάντα
Δεξάμεναι πάλιν αὐτίς ἀναβλήδην ὀχέωνται,

Αὐτῷ καὶ σφήκεσσι μέγαν χειμῶνα λέγοιεν.
 Ὅψ' ἐ δὲ μισγομένων αἰγῶν, μήλων τε, συνῶν τε
 Χαίρει ἄνολβος ἀνὴρ, οἷ οἱ οὐ μάλα θαλπιδύωντι
 Εὐδιδὼν φαίνουσι βιβαιομέναι ἐνιαυτόν.

PAGE 79.

403. καὶ γάρ τε κύων ὠρύξατο ποσσὶν
 Ἀμφοτέροις, χειμῶνος ἐπερχομένοιο δοκεύων.

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

The Scholiast gives ὠρέξατο for ὠρύξατο.

PAGE 79.

405—409. Καὶ μὴν 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 infrequens, adeo ut sæpe nos referre tæduerit, quoties ille aliquid ex Arato prætermittit. Itaque hos versus spurios puto, quales plures esse in hoc opere non dubito. Nam de muribus repetit cum paulo ante de iis dixerit, quod tamen et alibi de corvo et graculo reperies.”

(Grotius.)

PAGE 80.

416. μᾶλα ἄρκιον εἶη
 Φράζεσθαι φθίνοντος, ἐφισταμένοιο τε μηνός
 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 νοῦς, φυλάσσειν τὰς τετράδας τὰς δύο, ἐπεὶ πέρατα τῶν δύο μηνῶν εἰσὶν ὁμοῦ συνερχομένων, ὥς οἶον μεθόριον ὑπαρχούσας, ὅτε καὶ ὁ αἰθὴρ σφαλερός ἐστι καὶ ὁμβροφόρος.”

(Schol.)

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