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ON THE
CALENDAR AND ZODIAC
OF
ANCIENT EGYPT.

THE UNIVERSITY OF CHICAGO PRESS

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DISSERTATION
ON THE
CALENDAR AND ZODIAC
OF
ANCIENT EGYPT ;
WITH
REMARKS ON THE FIRST INTRODUCTION AND USE OF
THE ZODIAC AMONG THE GREEKS.

BY
W. MURE, Esq.

EDINBURGH :
BELL & BRADFUTE ; W. & D. LAING ;
AND
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LONDON.

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UNIVERSITY OF CHICAGO

PHYSICS OF THE SOLID STATE

BY J. H. VAN VLIET

PH.D. THESIS, UNIVERSITY OF CHICAGO, 1954

PHYSICS DEPARTMENT

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PREFACE.

As the chronology of ancient Egypt has of late excited considerable attention among those who attach interest to the history of the primæval world, it appeared to the author of the following pages, that some service might be rendered to this branch of study, by a careful inquiry into the first elements of the chronological art among the inhabitants of that country; that is to say, their methods of computing and dividing time by months, years, or other periods.

The first of the five sections into which this dissertation is distributed, treats generally of the peculiarities of the form of year used by the Egyptians; more especially as regards the influence which those peculiarities may have exercised, or have been supposed to exercise, on their modes of calculating and recording the dates of their civil history. As the ancient authorities on these points are neither few nor unimportant, and as they have already been examined often

and at great length by the most distinguished chronologers of modern times, little new matter could here be expected. But I have endeavoured to collect and arrange in as simple and concise a form as the nature of the inquiry permitted, every thing of moment that has hitherto been asserted or conjectured by my predecessors in the same investigation; drawing, however, my own conclusions, and offering such illustrations, as may serve either to correct the errors into which foregoing writers may appear to me to have fallen, or to throw additional light on our general subject.

The three following sections are devoted to a more minute analysis of the primitive form and probable origin of the egyptian calendar, *astrological* and *civil*; and of the effect produced on the superstitions and other habits of the people, by the early connexion and subsequent separation of these two departments of the same institution. The system which I have here ventured to propose is, I believe, entirely new. It was first suggested during a course of inquiry into other points of egyptian antiquity, by observation of certain curious coincidences, which, though not in themselves enough to justify any conclusions, were yet sufficient to provoke farther researches; the result of which has been to augment the number of these coincidences so considerably as to impress on my mind the belief, that they could not be the effect of mere chance; and I have no hesitation in declaring my own conviction, that in these three sections have been pointed out not only the real origin of the zodiac, but

the primitive form and mysterious import of at least one half of its signs. Those to which I would refer more particularly, are Aries, Gemini, Cancer, Leo, Virgo, and Libra.

That a system combining and resting upon so many obscure and enigmatical details, should be restored at once complete in all its parts, was not to be expected, for several obvious reasons; among others, for this very simple one, that the department of antiquarian science to which this inquiry belongs is still in its infancy; many of the facts or monuments which have afforded the most striking illustrations of our subject having only been brought to light within these few years—some even since these researches were first undertaken; and at this moment others are, or may be, in course of publication, which may help to fill the remaining gaps in the circumference of the egyptian astrological sphere.

The fifth and concluding section has been devoted to the examination of the probable period and circumstances of the first introduction of the zodiac into Greece—a question essentially connected, as shall be shown, with our previous analysis of its egyptian origin.

Some general elucidations of our subject, or of matters of critical interest connected with it, the discussion of controverted points, &c. which could not conveniently be inserted in the pages of the text, have been added in an appendix.

As much of what is new in the following work rests upon the evidence of the recent discoveries in

hieroglyphic literature, which have excited so much interest of late; and as the reality of a portion of those discoveries, at least to the full extent claimed by their authors, has been questioned, and in some instances perhaps justly; it might be thought necessary, that whoever attempts to ground any argument on their authority, should enter into some preliminary explanation how far he considers them entitled to confidence, and of the motives which have induced him to form his opinion. As this, however, would open a field of discussion far too wide to be comprehended within the plan of this essay, I shall be contented with stating my conviction, that the system of hieroglyphic interpretation chiefly developed by Mons. J. F. Champollion, in his *Précis du Système Hiéroglyphique*, is substantially correct. With regard therefore to the appeals which I may have occasion to make to individual portions of that system, where there occurs no reasonable ground of doubt, I shall not hesitate, according to the usual principle of citation of authority, to quote them as matter of fact; where the case is not so clear, I shall either in the text or annotations state my reasons for agreeing or differing.

Not having been able to procure a supply of coptic types, where I have had occasion to introduce words of that language, I have made use of greek capitals as a substitute. Of these, the greco-egyptian or coptic characters are, as is well known, merely a corruption; with the exception of five or six added to convey certain sounds to which there is nothing correspond-

ing in the greek tongue, and the representatives of which, in the ancient written language of Egypt, have therefore been retained, and transferred to the modern alphabet. Of these supplementary characters, I have caused a number sufficient for present use to be cut.

Upon all occasions numerous references have been given to the most esteemed authors who have already treated, in many instances separately, and more at length than was consistent with the limits of my text, the various subjects on which I have had occasion to touch, in as far as my opportunities of procuring their works, often from their very nature scarce, would permit. This I trust the candid reader will attribute not to any anxiety on the part of the author to display reading, but to a desire, however valueless his own labours may prove, of rendering at least some service to those who may be entering on the same line of pursuit, by pointing out the sources from whence materials for more extensive and successful investigations are to be derived.

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PLATES.

MEMORANDUM

TO :

FROM :

SUBJECT :

Reference is made to the report of the committee on the subject of the proposed changes in the organization of the Department of the Interior, which was submitted to the President on July 1, 1933.

It is recommended that the proposed changes be approved.

The proposed changes are in accordance with the recommendations of the committee and will result in a more efficient organization of the Department of the Interior.

Very truly yours,

W. W. Clegg, Director

Approved:

W. W. Clegg, Director

1933

1933

1933

SECTION I.

GENERAL REMARKS ON THE EGYPTIAN YEAR AND CANICULAR CYCLE.

THOSE who have devoted any attention to the antiquities of Egypt, will be aware, that a cycle of 1460 years, formed upon a difference of a quarter of a day, between the length of the civil year in use among its inhabitants, consisting of three hundred and sixty-five days, and the more nearly accurate tropical or julian year of three hundred and sixty-five days and a quarter, occupies a prominent place in all discussions relative to the early history and chronology of that empire, and has given rise to a considerable deal of controversy among the learned of modern times; the investigation of the details of its primitive formation and use, involving an inquiry into all the minor points of the very obscure history of the egyptian calendar.^a

^a The following are the principal authors, ancient and modern, on the subject of the egyptian year. Geminus, *Elementa Astronomiæ*, c. vi. apud Petavium in op. *De doctrina temporum*, vol. iii. ed. 1705. Censo-

A few observations on the origin and general properties of this cycle, will therefore form the basis of the ensuing illustrations. For although it may in itself, strictly speaking, be considered as the whole or summary, of which the remaining portions of our subject are merely parts or elements, yet, as will readily appear in the sequel, the peculiar character of this investigation renders the analytical mode of inquiry preferable.

There have been some, who, adopting an exaggerated view of the antiquity and extent of the astronomical science of the Egyptians, as well as of the fidelity of their historical annals, seem to have held, that if the dates of events of remote and fabulous ages be recorded in years of this cycle, they ought, admitting the good faith of the authors by whom they have been

rinus. de die natali, c. 18. sqq. Theon Alexandr. ad calcem Dodwell. append. ad Dissertationes cyprianicas. Scaliger, de Emendatione temporum, p. 179. sqq. ed. 1598. Petavius, de Doctrina temporum, vol. i. lib. iii. c. 2.; vol. iii. Var. Diss. v. 3. sqq. Bainbridg. Canicularia, Ox. 1648. Marsham, Chronicus canon, Lond. 1672, pp. 9. 235. 295. Dodwell, append. ad Dissert. Cyprian. Desvignoles, de Annis ægyptiac. Miscell. Berolinens. t. iv. p. 3. Sir I. Newton, Chronology, pp. 30. 79. 4to. 1728. De la Nauze, Histoire du Calendrier égyptien. Mém. Acad. Inscr. t. xiv. p. 334. xvi. p. 170. sqq. Fréret, op. cit. t. xvi. p. 308. Défense de la chronologie. p. 385. sqq. 4to. 1758. Jackson, Chronological antiquities, vol. ii. initio. 4to. 1752. Court de Gebelin. monde primitif. t. iv. c. 5. p. 126. sqq. 4to. 1773-82. Hales, Analysis of Chronology, ed. 1830, vol. i. p. 31. sqq. Fourrier Recherches sur les sciences, &c. de l'égypte, Mémoires de la Descript. de l'égypte, Antiq. t. i. p. 805. sqq. Ideler, Historische Untersuchungen über die astronomischen Beobachtungen der Alten. Berl. 1806, 8°. s. 64. ff. Id. Technische Chronologie, Bd. i. s. 93. Berl. 8. 1825. (The first mentioned work of this distinguished German chronologer and mathematician has been published in French by Halma at the end of his translation of Ptolemy, which I regret not having been able to see.) Biot, Recherches sur plusieurs points de l'astronomie égyptienne, Par. 1823, p. 148, sqq.

transmitted, to be assumed as fixed and standard epochs, by which the remainder should be regulated, as by a true test of correctness; somewhat as events of obscure and doubtful periods of later history, if recorded in connexion with eclipses, or other phenomena of the heavenly bodies, are assumed by preference as chronological pivots. The following example may serve for illustration. The first strictly historical epoch of the egyptian annals, is that of the expulsion of certain Asiatic tribes, called Pastors or Shepherds, who, in the early ages of the world, had occupied, to the prejudice of the aboriginal inhabitants, the whole or greater part of the country. This deliverance was effected by the victorious arms of a native prince commonly called Amosis, by some Thoutmosis, who forced the strangers to abandon their last hold, a strong city called Avaris on the frontiers of Arabia, and finally established the Mizraimite sway over the whole valley of the lower Nile; hence honoured by his native historians with a place at the head of a dynasty, the eighteenth in their lists. This was an event of the highest importance, and such as must have formed a standard historical æra; and been likely, above all others, had the chronological art been as far advanced at the time as some would suppose, to have been accurately recorded by every known method, astronomical or civil.

But on consulting the various extant fragments of egyptian history, even amid all their uncertainties, and the corruptions of the texts of the authors in whose works they have been preserved, we have sufficient proof that a very considerable difference must have existed, in the relative antiquity assigned by

different native annalists to this epoch. According to the text of Manetho, a celebrated historian of this country, as preserved by Africanus, the accession of the eighteenth dynasty would be dated about the year 1670 B. c. According to a different version of the same author given by Eusebius, it would fall about 1725 B. c. And in another national document, called "the old Egyptian Chronicle," it is placed about 1748 B. c.^b But Clemens Alexandrinus,^c himself an Egyptian, and well versed in the antiquities of his own country, fixes, apparently on the authority of Ptolemy the Mendesian, (another native historian of equal celebrity with Manetho,) this same epoch of the

^b The numbers of the years contained in the dynasties up to the nineteenth inclusive, according to these various authorities, are given in my Remarks on the chronology of the egyptian dynasties; and may also be seen in a note to p. 142 of the 85th Number of the Quarterly Review. For the eighteenth dynasty, we must add to the lists of Africanus 263 years; to those of Eusebius and the Old Chronicle, 348. The same dynasty, with Josephus, (contr. Ap. i. § 15. ed. Haverc. t. ii. p. 446.) who has affected to preserve its details, after Manetho, with a scrupulous degree of accuracy, assigning the fractional months of each reign, comprehends 333 years. Several modern authors, (Larcher, Herod. t. vii. p. 153. edit. 1786. Faber, Pagan Idolatry, vol. iii. p. 534. Hales, Analys. of Chronol. vol. iv. pp. 419. 422. edit. 1830) misled, it would appear, by an error in the Latin version of Havercamp, have stated the numbers of the Jewish historian at 340 years 7 months. These M. Champollion Figeac (Lett. i. sur le Mus. de Turin, p. 95) has adopted, as the basis of an attempt to reconcile the discrepancies in the statements of the ancients concerning this point of egyptian chronology. Theophilus of Antioch (Ad. Autol. ad calc. Justin. M. edit. 1743, p. 392) has also given, after Manetho, a list of the eighteenth dynasty, similar, in as far as the corrupt state of his text will permit of our judging, to that preserved by Josephus, from whom he has apparently copied it. The most important of these texts on egyptian chronology, are to be found in the useful collection of Mr. Cory, entitled, Antient Fragments—Lond. Pickering, 1828, p. 47, sqq.

^c Strom. lib. i. p. 335. conf. p. 320, edit. 1688.

expulsion of the Shepherds and the commencement of the eighteenth dynasty, to the 346th year before the lapse of the sothic cycle. This is the cycle above alluded to; which terminated, as shall be seen, in the year 1322 B. C. Now, upon the principle above mentioned, that dates attached to years of this cycle, are to be considered as not only historically, but as it were astronomically recorded; and supposing that Ptolemy the Mendesian, or Clemens, it matters not which, had really, as there is no reason to doubt, drawn his information from trust-worthy original records; it ought, amid the confusion and contradiction which prevails among these authorities, to have the preference; and consequently, the æra of the accession of Amosis, and of the expulsion of the Shepherds, would be placed about 1668 B. C.

A very few observations, however, in the course of the ensuing analysis, will, I trust, be sufficient to show, that dates of this nature, in years of the cycle, are in themselves no better than any others; being to all appearance merely proleptic; matter of after calculation, not of contemporary observation or record; as well as that the very history of the cycle itself affords proof, that the learned men of Egypt were much less advanced in either chronological or astronomical science than their more enthusiastic admirers have imagined, at the remote period to which their historical records or their celestial observations have been supposed to extend.

I shall endeavour to bestow upon this point, and others of equal or greater difficulty and obscurity connected with it, as close, and at the same time as impartial an investigation as I am able. The antiquities of this celebrated nation, in spite of all the

learning and ingenuity which have been devoted to them, have been destined seldom to obtain a fair and unprejudiced examination from the historical critic of modern times. This is not very difficult to account for ; when we consider the paucity of original documents, the meagerness and obscurity of those which exist, and the extreme vagueness and imperfection of the information derived at second hand from the classical authors of Greece and Rome. On all subjects of great extent or interest, the extravagance of conjecture or of system is usually in proportion to the slenderness of our means of accurate information. Hence one need feel little surprise, if some, dazzled by the splendour of the monuments still existing on the banks of the Nile, or influenced by too servile a deference to the vain-glorious traditions of the Egyptians themselves, and the exaggerations of credulous Greeks, have been willing to give this people credit for a degree of perfection in art and science of every description, equal if not superior to any hitherto attained by the most polished nations of christian Europe, at a period when, according to all reasonable probability, the human species, if already created, could scarcely have advanced beyond the first steps in civilization. Others, in combating these visionary theories, have fallen into an opposite extreme of paradox ; advancing opinions, and endeavouring to establish systems, altogether derogatory, as well to the real antiquity of this wonderful race, as to their just rank in the intellectual scale of nations.

In the present inquiries I shall make every effort to avoid the Scylla as well as the Charybdis, which have proved fatal to so many voyagers in the straits of egyptian research ; and in attempting to throw

light on the calendar and the elements of the chronology of this ancient people, by combining and collating all the more important fragments of classical antiquity bearing on the subject, with the evidence of existing monuments, and more especially of that mass of valuable material, which the enterprise of the traveller or the labour and ingenuity of the learned have, for the most part within the last thirty years, added to this department of antiquarian science,—it shall be my endeavour to banish all feeling of prejudice, either favourable or adverse to the nation itself, and all system but that of a careful investigation of truth.

The Egyptians having, at an early period of their history, established an imperfect solar year of three hundred and sixty-five days, soon found out that its revolution did not produce the returns of the corresponding seasons, but anticipated them by nearly a quarter of a day annually. This anticipation they fixed by inaccurate observations at six hours precisely, and hence it was easy to calculate that in 1461 revolutions of their own year, equal to 1460 of the tropical year, their Thot or new-year's-day would, (according to their own computation,) have retrograded from a given point through the tropical year, so that after the completion of that period, it would again coincide with the same day and season as it had done at starting. If this was their notion of the cycle, as there is little reason to doubt it was, it is hardly necessary to observe that they were mistaken; they calculated that every four years they lost a quarter of a day; whereas they only lost five hours and nearly forty-nine minutes; since the true solar year really contains upwards of eleven minutes less than the

julian year of $365\frac{1}{4}$ days ; so that the first day of the egyptian year, after 1461 of its revolutions, instead of having retrograded completely through the seasons, would coincide with the corresponding day of the julian year, when the sun was in a point of the zodiac about twelve degrees in advance of that which it occupied at the commencement of the period. Thus the twentieth of July, O. S. of the year 1322 B. C., on which day, as shall be seen below, a cycle began, was fourteen days after the summer solstice ; but in A. D. 139, when that cycle ended, the same day of the julian year fell on the twenty-sixth day after the solstice.^d

This excess of a quarter of a day, which they assigned the true solar year above their own, they either borrowed from, or connected with, the heliacal rising of Sirius or the Dogstar, which they supposed recurred at intervals of three hundred and sixty-five days and a quarter ; and in this they seem to have been right ; for although the true sidereal year exceeds the julian time nearly as much as the tropical year falls short of it, yet it would appear from the calculations of modern astronomers,^e that the intervals between the heliacal rising of Sirius, in the latitude of Egypt, during the flourishing ages of the empire, that is for upwards of two thousand years before our Saviour, by a certain concurrence in the positions of the heavenly bodies, really were what the Egyptians supposed them to be. The periods of the cycle were regulated by the coin-

^d Ideler, *Unters. üb. die astr. Beob.* s. 79, 81.—Ed. Halma p. 38, *Techn. Chron.* Bd. i. s. 129.

^e Petav. *Var. diss.* V. 6. *Bainbr. Canic. Conf. Græv. ad calc. op. Kirchius ap. Desvign. de Ann. Ægypt. Misc. Berol. tom. iv. p. 3.* Idel. *Unters. üb. d. Astron. Beob. d. Alt.* s. 88. *Id. Techn. Chronol.* Bd. i. s. 129 ff.

cidence of this phenomenon with the first day of Thot, the first month of their year ; which coincidence, according to historical data, took place on the 20th of July, in the year of Christ 139.^f That year was therefore the end of a cycle. Counting back 1460 years, we have the 20th of July of the year 1322 B. C. for its commencement ; and if we count back other 1460 years, we shall have the year 2782 as the commencement of that which terminated in 1322. The Dogstar was called in Egypt the star of Isis, or Sothis ; hence the name of *sothiac*, or *canicular* cycle.

The explanation given by the Egyptians, or rather by the Greeks for them, of this discrepancy between their civil year and the true reckoning, on which their cycle was grounded,—namely, that it was a point of their national religion that every feast should fall successively on every day of each season of the year, which was thus effected by their being attached to certain days of their own calendar,^g—is evidently a mere after-excuse, invented to palliate an unintentional defect, rather than a reason for what was, in itself, from the first, an intentional institution ; for, besides that they would have overshot their mark, as their feasts, instead of taking the days of the tropical year in regular succession, would have fallen, during four years, on the same day, and then passed on to the next, it were in itself inconceivable that any people should originally have established their festivals upon such a principle ; for, as among all superstitious na-

^f Censorin de die nat. c. xxi. Conf. Petav. Var. diss. v. 6. De la Nauze Mem. de l'Acad. des Inscr. xiv. p. 343. sq. Ideler, Unters. üb. die astr. Beob. s. 74. Techn. Chron. Bd. ii. s. 127 sq.

^g Gemin. Element. Astron. c. vi. apud Petav. Uranolog. in op. de doct. temp. vol. iii. p. 19.

tions, and more especially those whose superstitions were so evidently founded on the phenomena of the physical world, religious rites must, in their origin, have borne reference to the various phases of the heavenly bodies, as well as the necessary periodical operations of agriculture, they must, from their very nature, have been essentially connected in their institution with certain seasons. And that this holds good of Egypt above all other states, must be obvious to every person who has bestowed the least attention on either the natural or civil history of the country. So that to have celebrated the death of Osiris, which, according to themselves, was figurative of the low state of the waters of the Nile and the decline of the sun in the zodiac, in the month of May, when the sun was rapidly advancing to the zenith, and the Nile just beginning to swell, would have been such an anomaly, as might, indeed, have been brought about by a confusion of circumstances, and the obstinacy of a bigotted people, but never could have been the effect of design. It would, however, appear that some of their more important solemnities did remain fixed to certain seasons, and, consequently, could not have been attached to particular days of any month; such were the harvest-home of Isis, described by Diodorus,^h at which the first-fruits of certain vegetables were offered, and the sacrifice of hogs at full moon, mentioned by Herodotus.ⁱ To these might, perhaps, be added the Niloa, or festival of the inundation, described by Seneca^k and Heliodorus,^l and apparently also noticed by

^h Bib. hist. l. i. c. 14.

ⁱ L. ii. c. 47, conf. Plut. de Is. et Os. c. 8.

^k Quæst. nat. l. iv. c. 2, p. 726, A. Edit. Lipsii, 1715.

^l Æthiop. l. ix. p. 423, Ed. Commel. Cant. 1596.

the father of grecian history.^m Other examples might possibly be adduced ; but as the writers on whose authority they rest flourished after the introduction of the julian year into Egypt, and as their illustrations of the egyptian mysteries are given very confusedly, partly with reference to the dates of the new calendar, partly to those of the ancient year still in use among the aboriginal inhabitants, the less attention is due to them.ⁿ The instances here quoted, however, are sufficient, for the present, to show, that some at least of their feasts were originally assigned to certain seasons ; and the same may, from the very nature of egyptian superstition, be inferred concerning the remainder. Afterwards, amid the irregularities of their calendar, those festivals whose ceremonies were so necessarily dependent on the seasons, with respect to which they were first instituted, that they could not possibly be performed at any other, the harvest-home, for example, or the Niloa, remained fixed, while others, where the connexion was of less importance, continued attached to their respective days of the national months, and not to the degrees of the ecliptic ; and the priesthood, finding the year of three hundred and sixty-five days a simple and convenient method of reckoning in other respects, and unwilling to make any farther alteration in their civil institutions, so repugnant to the feeling of the nation at all times, sanctified this defect of the calendar as a religious peculiarity, which distinguished their national solemnities from those of their neighbours ; the motive of their primæval institution being still kept in view among the priests themselves, and

^m II. 60, conf. auct. apud Jablonsk. Panth. æg. lib. iv. c. 1, § 16 ; and Heeren Ideen über die Politik, &c. der Alten. Edit. 1826. II. Th. II. Abth. p. 375.

ⁿ See note to p. infr.

forming probably, as we shall have occasion to observe farther hereafter, an important part of those mysterious significations so much celebrated as contained in all the superstitious rites of this people.

Farther proof, if indeed any be required, that it could not have been the original intention of the egyptian legislators, in establishing their civil year, to make its revolution fall short of the true solar time, exists in the circumstance, admitted by themselves, and proved by the whole tenor of their tradition, that, in early periods of their history, they, like other nations in the infancy of civilization, used a year of three hundred and sixty days, divided into twelve months of thirty days each,^o which formed the basis of their calendar as afterwards permanently settled, and which, if adhered to without occasional correction, would, no doubt, have caused their feasts to retrograde through the seasons, but would have been far from making them fall successively on each day of the solar year. Now, as many of their superstitious rites may safely be considered at least as ancient as their civil chronology, it is clear, upon their own admission, that those rites could originally have been established on no such principle as that which we have just been examining. As to the real nature of this year of three hundred and sixty days; whether, as some have supposed, it was allowed, like its successor, to anticipate the tropical time, so that its commencement falling back five days and a quarter each revolution, would shift through the seasons in about seventy years; or whether it was a lunisolar year, rectified occasionally by embolic months, it would be in vain minutely to inquire, as

^o See Appendix, No. I.

we have few or no historical data concerning it ; but the latter opinion is certainly the most reasonable, since it can hardly be supposed that any nation would long submit to so very inconvenient an irregularity as must otherwise have been the result. It was, however, in order to obviate permanently, as they imagined, the perpetual fluctuation of the seasons, which must have been consequent on a strict adherence to their ancient mode of reckoning, that they established their new form of year, by adding five supernumerary days at the end of the twelve months. This additional number of days they borrowed from rude observation of the courses of the stars, as a more accurate guide than the changes of the moon, which had been the foundation of their primitive reckoning, calculating these courses, in round numbers, at three hundred and sixty-five days. And it is not to be believed that they would, after once venturing upon such an innovation on their ancient institutions, have been contented thus only to reform their civil calendar by halves, substituting a lesser for a greater error, had they at that period known any more exact approximation to the truth. There can, therefore, be no reasonable doubt but that the Egyptians, in instituting their year of three hundred and sixty-five days, believed, or hoped, that its revolution would bring about the return of the seasons, and that the sothic cycle is, in fact, the result of their disappointment.

The epoch at which these five days were permanently added is also mere matter of conjecture, not being recorded by any trustworthy document, and the statements of the classical authors concerning it being vague and contradictory. Syncellus^p ascribes the im-

^p Chronogr. p. 123, D. inter Script. Byzant. t. vi. Par. fol. 1652.

provement to a king called Aseth, whom some, on grounds of a very unsatisfactory nature, have identified with one of the shepherd kings. Censorinus^a appears to consider as its author one Arminon; which name, however, does not occur in the lists of egyptian sovereigns. The opinions of modern chronologers on this point have been, as might be expected, much divided; but those who have taken the most reasonable view of the subject are agreed in supposing the institution to have been of no very extreme antiquity, probably not prior to the exodus, as there is much reason to believe that the jewish legislator, who was learned in all the wisdom of the Egyptians, was unacquainted with any such institution. Sir Isaac Newton^r would place it about nine hundred years before the christian era; but, as his opinion is grounded on a system of chronology which, however ingenious, is now generally admitted to be fallacious, little weight can be attached to it. Dodwell^s carried his contempt of the astronomy of the Egyptians so far as to maintain that their solar year was no invention of their own, but borrowed from the Persians, on the conquest of their country by Cambyses. On the other hand, Zoëga's^t admiration of the science of his favourite among the nations of antiquity led him to deny that this imperfect or moveable year was ever really in use among them, but that they had the julian or tropical year from time immemorial; and hence he supposes, like Dodwell, though on different grounds, that the other was an institution of their conquerors, falsely attributed to themselves by the Greeks, who first became

^a De die nat. c. 19.

^r Chronol. pp. 30, 79, sq.

^s De vet. cycl. diss. ii. sect. 6, p. 70; diss. iii. sect. 4, 6, p. 134.

^t Numm. Ægypt. Mus. Borg. addend. p. 395.

acquainted with it in their country after the conquest. The fallacy of both these opinions, eminent as is the authority by which they are supported, is too obvious to require to be pointed out minutely. Gatterer asserts, that the year of three hundred and sixty-five days must have been used in Egypt in the seventeenth century before Christ, *because Cecrops brought it with him into Attica.*^u The learned chronologer does not say how he ascertained this last fact, but I conceive it would be somewhat difficult to discover authority for it.^v The most plausible opinion, perhaps, is that which supposes that the reform of the egyptian calendar took place in that same celebrated year 1322, which was the period of the sothiac cycle, and that they then transferred their new year's day from the position in the seasons which it previously occupied to the day whereon Sirius rose heliacally,—a phenomenon of great importance in their mythology, as well from their general superstitious reverence for that brilliant star, as from its appearance coinciding with the inundation of the Nile, and being supposed to exercise a physical influence on the rise of its waters. The very circumstance that the cycle of 1460 years, formed upon the deficiency of their new calendar, was afterwards regulated by the coincidence of the Thot with that particular day, is certainly strong ground of belief, as has been observed by De la Nauze and others,^w that the reform itself was accompanied by that

^u Weltgeschichte, Bd I. p. 579, ff. Götting. 8º 1785.

^v See Append. No. II.

^w De la Nauze, Mem. de l'Acad. des Inscr. t. xiv. p. 343. Goguet orig. des loix, tom. iv. p. 479, Ed. Par. 1758. Ideler Unters. über die astr. Beob. &c. s. 70, ff. Techn. Chronol. Bd I. s. 131. Playfair, Chronol. p. 13. Encyc. Brit. art. Chronology, No. 21. Under the government of a sovereign called Menophris, if we may trust a fragment of Theon Alex.

coincidence ;^x and, if so, without taking an extravagant view of egyptian chronology, we can hardly assign it to any other epoch than 1322 B. C., as the year 2782, on which the commencement of the previous cycle would fall, reaches too remote a period of antiquity to justify the belief that even the egyptian state was as far advanced in civilization as the existence of such an institution would lead us to infer. It is, however, by no means inconsistent with probability, that, the calendar having been reformed some time previous to the year 1322, its Thot, or first day, being fixed at a more advanced season, may, by retrograding towards the solstice, have coincided with the heliacal rising of Sirius in that year ; and this interesting coincidence having been observed and recorded by the Egyptians, may afterwards have aided them in regulating the proportion between their own and the tropical year, and so have equally formed the basis of their cycle. This seems to have been the view taken of it by Jackson,^y who supposes the Thot, on the addition of the epagomenæ, to have been fixed about the autumnal equinox, which opinion we shall have occasion to notice more particularly in treating of the egyptian zodiac. Sir Isaac Newton,^z on the same principle, supposed the Thot of the improved year to have been fixed about the vernal equinox of the year 887 B. C., so that it would have retrograded to the 26th of February in the first year of Nabonassar, or 746 years before the

cited from the Paris MS. by Biot *Rech. sur l'astron. égypt*, p. 303. Larcher *Herodot. tom. ii. ed. 2. p. 553.* Champoll. *I^{re} Lett. sur le mus. de Turin. Notice chronol. p. 100.* Volney, however, rejects, but apparently without reason, the interpretation of this passage adopted by these authors ; see his *Recherches nouvelles sur l'hist. ancienne, tom. iii. p. 216.*

^x See *Append. No. III.*

^y *Chron. Ant. vol. ii. p. 7.*

^z *Chronol. pp. 31, 79.*

christian era, and have first coincided with the rising of Sirius in A. D. 139. That is, however, as already observed, much too low an estimate of this important point of egyptian antiquity.

Diodorus^a mentions a golden circle, of three hundred and sixty-five cubits in circumference, by a cubit in breadth, as having been formerly shown in a theban edifice, among which cubits were distributed the days of the year, with the proper risings and settings of the stars attached to each, and their mystical import, according to the egyptian astrologers. It is not very easy to say what degree of faith is here due to the description of Diodorus, which he professes to have derived from Hecataeus of Abdera, or other greek writers on Egypt of the days of the Ptolemies; yet, immediately afterwards, he informs us that this sphere was carried off by Cambyses, two hundred years before their time. Admitting, however, the tradition to be correct, there would be much reason to believe that the sphere was constructed at the time the new calendar was established, as a monument of the institution; certainly, it may be presumed, if Diodorus' account be correct, not after they had observed the real discrepancy between the civil and the sidereal year, otherwise it would have been quite vain to have fixed the risings and settings of the stars, and their prognostications, to particular days of the months, as they must have known that in a few years the use of their sphere

^a Lib. i. § 49.

^b "From this monument I collect," says Sir Isaac Newton, (Chron. p. 30,) "that it was Amenophis" (that is the person by whom he supposed it to have been erected) "who established this year, fixing the beginning thereof to one of the four cardinal points of the heavens. For had not the beginning thereof been now fixed, the heliacal risings and settings of the stars could not have been noted on the days thereof."

would have been at an end. The building in which Diodorus states this golden calendar to have been placed, seems to have been a monument of the reign of Sesostris, (first king of the nineteenth dynasty,) which the historian or his authorities mistook for the sepulchre of a more ancient king, Osymandyas,^c of whom there may have been some memorial in the neighbourhood. The reign of Sesostris, according to the most moderate estimate of his native historians, cannot be brought down lower than about the middle of the fourteenth century B. C. ; but as the egyptian emperors were much in the habit of adding to, and embellishing the edifices of their predecessors, and as this sphere was a mere piece of ornamental furniture, not necessarily connected with the structure itself, its existence there might be evidence of its having been framed at a period posterior to the accession of the nineteenth dynasty, though it would be none of its being of equal antiquity with the reign of the sovereign abovementioned. It might naturally suggest itself, that a satisfactory mode of deciding the controversy respecting the institution of the epagomenæ; or five additional days, would be to ascertain whether, among the dates which recent discoveries in egyptian literature enable scholars to interpret from the ancient records, there be any marked in those days at remote periods of antiquity. But it is singular enough, that although a great number of historical dates, both of the ancient dynasty of the Pharaohs, and of the greek and roman sovereigns have been brought to light,^d

^c Upon this curious point of antiquity, vid. Champol. II. Lettre sur le Mus. de Turin, p. 11. Conf. Let. 14. from Egypt, Lit. Gaz. Nov. 21, 1829. p. 762. Heeren Ideen ü. die Politik, &c. ii. Th. ii. Abth. s. 233. ff.

^d Vid. ap. Young, account of recent discov. in hierogl. Lond. 1823.

in the egyptian language and characters as well as in greek, yet all, I believe without exception, refer to days of the months, and not one to the embolic days. This may be the result of accident, or possibly these days may have been in a certain degree *nefasti*, and hence less likely to occur connected with dates of civil or religious solemnities; though I am not aware that there is any authority to justify such a belief; indeed the very constitution of the calendar, which caused the greater number of feasts to take the days of the year in succession, seems to render it inadmissible; besides which, royal deaths, births, accessions, and other public events of an unexpected nature, whether joyful or calamitous, might require to be recorded on the epagomenæ, as well as the days of the months.

But at whatever epoch the egyptian calendar was finally established, it is clear that the first notion of the canicular cycle must date from the subsequent period, when they had not only experienced how incorrect it still was, but had fixed their error at a quarter of a day; and connected the deficiency with the corresponding excess of the interval between the heliacal risings of their favorite star, over their civil year. Having calculated, therefore, that they lost a day every four revolutions, it was a very simple mat-

Kosegarten de prisc. Ægypt. litteratura. Vimar. 1828. Champol. II. Lett. sur le Mus. de Turin. The representative marks of the *επαγόμεναι* have, it appears, not hitherto been discovered in the hieroglyphic, or any other native egyptian character; which is surprising, considering that most of the other signs for the reckoning of time, such as year, day, the twelve months, and the numerals from one to a thousand, have been identified, as might be expected from their nature, with greater facility, and more mathematical certainty, than almost any other hieroglyphic cyphers.

ter to regulate a cycle of 1461 of their own years upon this principle; for as there are just so many quarters of a day in the julian year, at the end of that period, their Thot, that is the first day of their first month, must have retrograded through it to the point from whence it set out.

It is equally clear, that this anticipation of the seasons having been once so fixed, a cycle of this nature could be dated from any given day of any given year, to a corresponding day after 1461 revolutions; from the year, for instance, on which Sirius rose heliacally on the first of the month Phamenoth, as well as from that on which it rose heliacally on the first of Thot. Thus the Phœnix, according to some,^e was fabled to appear in Egypt at intervals of 1461 years, which might be called the cycle of the Phœnix; and in the same way national revolutions, the accession of favorite sovereigns, or other remarkable events, might in partial chronological systems become the basis of sothiac cycles. Of this we shall have occasion presently to notice an example of considerable importance to the elucidation of our subject.

With regard to the period, when the discrepancy between the civil and the tropical year was first observed and defined; it naturally suggests itself, that the discovery would take place, in consequence of their having remarked, that the interval between the heliacal risings of Sirius, which they had assumed as equal to the solar year, exceeded their own by about six hours. This, accordingly, has been the opinion of those who suppose that the new calendar was established in 1322 B. c., its first day being fixed to that

^e Tacit. Ann. vi. c. 28.

whereon Sirius rose heliacally ; among others of Professor Ideler ;^f who adds, that on account of the great difficulty of observing with any degree of nicety in the climate of Egypt the exact days on which the stars were disengaged from the rays of the sun,^g a very considerable time might have elapsed, before they could have ascertained that Sirius appeared precisely a day later in their calendar every four years. This same difficulty has led other experimental astronomers^h to doubt or to deny, that the true length of the julian year could have been originally regulated by any reference to the phases of the Dogstar at all ; and rather to suppose that having been calculated by some other means, such as the observation of the shadow, or of the points of sunrise, it may afterwards have been identified with the heliacal year of Sirius. These are matters which fall within the province of practical astronomers, and where they differ, the historical critic cannot pretend to decide. Some authors of eminenceⁱ have indeed, in the heat of controversy, or under the influence of system, even gone the length of doubting whether the τέταρτον ἡμέρας of excess had been thus ultimately defined, at the period of the first familiar acquaintance of the Greeks with Egypt ; an opinion of which I conceive no person who takes an impartial view of egyptian antiquity, will be inclined to approve. Its supporters appeal to

^f Unters. ü. die astr. Beob. &c. p. 85.

^g For this see Nouet ap. Volney recherches nouvelles sur l'hist. anc. tom. iii. append. p. 332.

^h Delambre ap. Cuvier on the revol. of the surf. of the globe, p. 140. Engl. trans. Lond. 1829. Conf. Biot Recherches sur l'Astron. égypt. p. 224.

ⁱ Goguet Origine des loix, tom. v. p. 171. Dupuis, Hist. de l'Acad. des Insc. t. xxix. p. 113. Delambre, Hist. de l'astr. anc. t. i. p. xlviiii. additions, &c. Cuvier op. sup. cit. p. 142.

Herodotus, who, it is asserted, is so far from betraying any suspicion of the additional quarter of a day having been known to the Egyptians in his time, that he commends that people,^k because “they first of all men had discovered the true year, distributing it into twelve portions according to the seasons; and in this respect show themselves so much the wiser than the Greeks in his opinion, as the Greeks intercalate every second year, to keep pace with the seasons; but the Egyptians, counting twelve months of thirty days each, add to each year five days extraordinary, and thus the seasons are kept to their proper places.” Here, as elsewhere, the father of Grecian history does indeed show how unwise he himself was in these matters, and utters at the same time an unintentional satire upon that wisdom which was the object of his admiration; the system he eulogizes being founded on the very defect which his countrymen took pains to rectify by their cycles of lunar years. But what conclusion are we entitled to draw from this respecting the astronomical science of the Egyptians?¹ This, it is evident, is merely the opinion of Herodotus himself, who, finding a year of only three hundred and sixty-five days in civil use among them, which his profound admiration for their wisdom led him ignorantly to fancy must be the true length of the solar revolution, makes his observations accordingly; affording one, among other strong proofs, of his superficial acquaintance with several important points of Egyptian custom, on which his authority is so often and confidently appealed to by modern critics. The priests may surely have admitted the extra six hours

^k II. § 4.

¹ See Append. No. IV.

into their astronomical computation in the days of Herodotus, although they were not at pains to communicate their knowledge to that curious though simple inquirer, of whose honest credulity they seem not unfrequently to have made a jest.^m It is however added, that Thales, who visited Egypt several generations prior to Herodotus, and was admitted to a participation of the mysteries of the learned men of that country, obtained from them no nearer approximation to the true time than his countryman. Our acquaintance with the philosophy of Thales is by far too vague and imperfect, to justify any positive inference respecting his doctrines, either moral or physical, much less with regard to those borrowed by him from Egypt. But under any circumstances, if we admit that the year of 365 days was established in that country, as there can be no reasonable doubt it was, many centuries before the days of either of the Greek sages above mentioned, it were hardly credible that a people in the habit of observing the heavens, as the Egyptians unquestionably did with some attention, if not with very excellent instruments, and among whom, from the very nature of their climate, the calculation of the returns of the seasons was a matter of considerable importance, and at the same time of

^m See, among other examples that might be adduced, the account given him by the hierogrammatist of Sais, who may be presumed to have been among the dignitaries of the sacerdotal order most distinguished for learning and gravity, concerning the rise of the Nile in a pool between two lofty peaks at Syene; whence issuing, its waters were divided, part flowing to the north, part to the south, (L. ii. § 28.); also concerning the signification of the word *Piromi*, attached to the images of departed priests, as of other mortals, to distinguish them from those of the gods; and conf. Young art. Egypt, Supp. Encyc. Brit. p. 46. Champol. Précis du syst. hiér. tab. gen. No. 153, sqq.

greater facility than in most other countries,—it is hardly credible that such a people should have been so stupid as not to have perceived, that in a hundred and twenty years the periodical returns of seed-time and harvest, of the rise and fall of their river, of the risings and settings of their favourite stars, had altered their positions in the calendar by about a month; and if so, it required no very profound astronomical science to fix the excess of the tropical year in round numbers at a quarter of a day. If their astronomers had not made this discovery before the days of Herodotus, we must altogether deny them the merit of ever having made it at all; for it is not to be supposed, that amid the anarchy, oppression, and national distress, which followed the Persian conquest, the degraded priesthood should in a few years have advanced more rapidly in astronomical discovery, than during ten centuries of the more brilliant ages of national prosperity and independence. We should therefore be reduced to the necessity of supposing, that they acquired their knowledge of the julian year from the Greeks; which is as inconsistent with probability, as with the unanimous testimony of the Greeks themselves.ⁿ

The silence however of the travellers of this last-mentioned nation on these points, though not sufficient to justify so low an estimate of egyptian learning, is certainly somewhat surprising. Plato and Eudoxus are indeed stated by Strabo,^o to have been

ⁿ Larcher, in as far as I know, is the only critic who has gone the length of advancing even this paradox. *Memoire sur le Phoenix, &c. Hist. et Mém. de l'Inst. royal, vol. i. p. 220. Classe d'hist. et de litt. anc. Apud Idel. Techn. chron. Bd. i. s. 137, note.*

^o P. 1143, ed. Falcon.

made acquainted by the theban priests with the additional quarter of a day; but amid the multitude of learned and inquisitive men who are said to have devoted so much attention and so many years' study to egyptian history, it is remarkable that no notice should be taken of its application to the cycle prior to the days of Manetho;^p and this, added to the meagerness of the allusions to the cycle itself, contained in his works, as well as in those of other native annalists, must be considered as strong proof how recent and imperfect its use really was in their chronology.

It would be quite superfluous, after what has been already observed, to enter upon any lengthened argument to show, that this celebrated sothic period, at whatever epoch the first notion of it may have occurred, need be considered, in its application to remote ages; as nothing more than a matter of calculation, resembling the julian period of Scaliger, or other similar chronological fictions. This is indeed self-evident, and has been so fully explained and illustrated by various authors, more especially by M. Biot in his valuable Researches on several points of Egyptian astronomy, that it will be sufficient to refer the reader who may be curious to inquire farther to his work, where the subject has been exhausted in a section expressly devoted to its investigation.^q It may therefore safely be asserted, that it were as unreasonable to assume, that because in a system of chronology the date of some event of remote antiquity is assigned to such or such a year of this cycle, the knowledge of the cycle itself must necessarily have existed in Egypt at

^p See Append. No. V.

^q P. 148, sqq. conf. Idel. Unters. üb. di astr. Beob, &c. s. 83.

the same period, as it would be to assert, that the julian year was used by the Greeks on the first establishment of the olympiads, because that event, in our chronology, is assigned to a certain year of the julian period. It is surprising, however, to what an extent this error has prevailed among authors who ought to have known better: thus Fréret,^r and after him Bailly,^s have assumed the knowledge of this mode of reckoning among the Egyptians, in the year 2782 B. C., merely on account of an apparent allusion by Manetho to a vague date of his native history, given as they supposed in years of the cycle terminating in 1322, and which ought therefore to have commenced in 2782. And Bailly has gone the still greater length of inferring, that the year of 365 $\frac{1}{4}$ days was known to the Egyptians at that remote period. Had Manetho, as he might accidentally have done, ascribed to some still more ancient event of his fabulous history its date in years of a former cycle, it would, upon this principle, be equally incumbent on us to admit the knowledge of the solar year in 4242 B. C., and so on ad infinitum, or at least up to a period of near 37000 years before our Saviour; for it will be seen presently, that the native historians claimed twenty-five such cycles for the fabulous duration of their empire, counted back from the year 350 B. C., the actual existence and use of which among the antediluvian, or rather antemundane Egyptians, must also be admitted upon the premises of the above mentioned authors. Sir Isaac Newton^t having, in his Chronology, placed the period of the reform of the calendar

^r Défense de la Chronologie, pp. 25. 246. 414.

^s Hist de l'astr. anc. L. v. § 10. p. 402.

^t Pp. 30. 79. sqq.

about the 900 B. C., Fréret,^u in his confutation of that system, advanced as proof of the prior existence of the egyptian year certain passages of Manetho, and other historians of the age of the Ptolemies, where dates of remote events are assigned in years of the cycle; inferring, as a necessary consequence, the existence in those days of the form of year of which the cycle was composed. Newton did not condescend to enter upon a serious exposure of this sophistry, but merely observed, that his critic had misunderstood him, as his argument referred merely to the egyptian year, and had nothing to do with the cycle.^v This answer his antagonist himself quotes, somewhat piqued,^w and in his reply formally states, that he is unable to comprehend how Newton distinguished between the egyptian year and the cycle composed of that year, or how the one could exist without the other. The learned academician might as well have said, that he was unable to comprehend how barbarians could reckon time by days and nights without the knowledge of the julian year; or how Julius Cæsar could have established his calendar, without being acquainted with the julian period. It is surprising that so acute a genius as Fréret unquestionably was, should have been so blinded by the effect of prejudice or system, as thus to have persisted in that very sophistry himself which he saw and pointed out so acutely and convincingly in others.

^u Défense de la Chron. p. 414.

^v Phil. Trans. vol. xxxiii. p. 320. "I meddle not with that cycle, but speak of the egyptian year of 365 days."

^w Défense de la Chronol. p. 414. Je ne puis comprendre comment M. Newton distingue entre l'année égyptienne et le cycle composé de ces années. Ces deux choses me semblent tellement liées qui l'une ne peut aller sans l'autre.

A still farther illustration we have of the influence on historical criticism, of this error of assuming dates of calculation for epochs of contemporary observation or record, in its application to the celebrated æra of Nabonassar, which falls to be noticed here, as having been, from certain circumstances, closely connected and mixed up with the chronology of Egypt. This was a chaldee period, commencing in 747 B. C., dated, as is usually supposed, from the accession of a Mesopotamian prince of the name of Nabonassar; and the greek astronomers, Hipparchus, and after him Ptolemy, having adopted the celestial observations of the Chaldees by preference, as the basis of their own astronomical systems, assumed this æra as the limit, within which such of those observations as they considered worthy of their attention were comprised. But finding it convenient, according to their own principle of computation, to reduce the babylonian reckoning of time, in common with that of all other states to whose scientific records they had occasion to appeal, into the year in civil use in Alexandria, (at that time the chief seat of learning,) which, from its familiarity and great convenience, they had adopted as a standard—we have thus in their works a series of egyptian years, dating from the twenty-sixth of February 747 B. C., (on which day the moveable Thot fell at that epoch), called the æra of Nabonassar; and hence modern chronologers have been misled, as above stated, to assume, some^x that the Chaldees had adopted the use of the solar years of 365 days from the Egyptians at that period; others^y that this is

^x Newton, Chronol. pp. 80. 252. De la Nauze, Mem. de l'Acad. des Inscr. t. xiv. p. 338.

^y Scalig. de Emend. temp. p. 189.

merely an egyptian æra, but dated from a conquest of the country by Nabonassar the Assyrian; and Dodwell^z and others, as already observed, have even gone the length of supposing that the year of 365 days was originally an invention of the Chaldees, first introduced into Egypt by the Persian conquerors. All which opinions are equally unsupported by any authority but the conjecture of their supporters, as has been pointed out by Petavius,^a and still more fully and satisfactorily by Fréret^b and Jackson.^c

The sothiac cycle being therefore, like the julian period, or the egyptian year of Nabonassar, merely proleptic, the dates of remote events of egyptian history recorded in years of that cycle, putting the general fabulousness of the early annals of the nation out of the question, can be in themselves no better than any others; as not being necessarily, nor probably, connected with any observation made at the time itself. Had the cycle been known at the period of the expulsion of the Shepherds, and the accession of Amosis; and this important epoch of the national history been so noted at the time in the sacerdotal records; and established as it were on an astronomical basis, according to actual observation of Sirius; there could hardly have been any dispute among those who afterwards compiled the same records, with regard to so positive and standard a point of chronology; and consequently the wide discrepancy which we find between the statements of Ptolemy the Mendesian—

^z De vet. cycl. Diss. ii. § 6. conf. Zoëg. Num. Egypt. Mus. Borg. p. 395.

^a De doct. temp. L. iii. c. 6.

^b Mem. de l'Acad. des Inscr. t. xvi. p. 205, sqq.

^c Chronol. Antiq. vol. ii. p. 80. conf. infr. Append. No. VI.

of the Old Chronicle—and those of Josephus, Africanus, and Eusebius, each professing to be derived from Manetho—could never have existed. This date therefore, of three hundred and forty-five years before the lapse of the cycle, can merely give us to understand, that according to Ptolemy's view of the egyptian annals, the expulsion of the Shepherds took place as many years before his own time, as were contained in the intervening period ; or about the 1668 B. C. according to our reckoning ; and may have been a computation^d made by himself, from observation of the place in the tropical year which the Thot occupied, as compared with the day of the egyptian year on which Sirius rose heliacally, at the epoch when he himself wrote. Had the Old Chronicle fixed the date of this event in years of the cycle, it would have placed it in the four hundred and twenty-sixth year before its lapse ; Manetho, taking his numbers according to Africanus, would nearly have coincided with Ptolemy ; according to Eusebius he would have fixed it four hundred and three years before its lapse ; and according to Josephus would probably have differed from all the others.

There can be no doubt but that chronological tables, formed upon this cycle on the principle of calculation above alluded to, would have been found by the egyptian annalists a very convenient and useful method of establishing the relative dates of remarkable events ; some sort of standard æra or period of this kind being a desideratum in the annals of every nation, more especially when of so great extent and antiquity as those of Egypt. But there are various

^d See Append. No. VII.

circumstances which tend to show that this mode of calculation, as here described, never was in familiar use among the chronologers of that country. First, the extreme paucity, or rather total want of dates so recorded; that of Ptolemy or Clemens above quoted, being, as we shall see, the only palpable one upon record, as far at least as my researches go. Secondly, that although among the native historians of the age of the Ptolemies, mention occurs of a period of 1461 years as a measure of their annals, real or fabulous, the cycle which they used seems to have been very differently regulated from that concerning which we have hitherto been inquiring; for the Old Chronicle already quoted, makes the egyptian empire last twenty-five cycles, containing 36525 years, and terminating with Nectanebo their last native monarch; whose attempt to re-establish the independence of his country was crushed by Darius Ochus in the year 350 B. C. These cycles therefore differed in their periods by upwards of four hundred and eighty years, from those which terminated in 1322 B. C. and A. D. 139. I have formerly had occasion to observe,^e on the authority of Africanus and Syncellus, that there is much reason to believe, that, on this point, Manetho and the native annalists in general, followed the same method of computation as the Old Chronicle; and that opinion has been since confirmed by a passage of Jamblichus,^f who expressly states, that according to Manetho, Mercury (or Thot) had illustrated the sacred history of Egypt in 36525 volumes; which, as Gale justly observes in his note to the passage,^g can refer

^e Brief remarks on the Chronol. of the Egypt. Dynasties, p. 22.

^f De myst. ægyptiac. sect. viii. c. 1, edit. Gale. 1678. p. 157.

^g Conf. Marsh. Chron. Can. p. 10.

to nothing else than the fabulous 36525 years, or twenty-five cycles of duration, assigned to this empire. All this is sufficient proof that the historical cycle commonly used by the egyptian annalists differed from the astronomical cycle, regulated by the coincidence of the Thot with the heliacal rising of Sirius. It is however evident, as has been shown by Bainbridge,^h Ideler,ⁱ and by myself elsewhere,^k from the general tenor of their records, and the comparative chronology of other nations, that the date preserved by Clemens Alexandrinus is given in years of the cycle terminating in 1322 B. C. That this date is borrowed by him from the pagan historian Ptolemy, to whom he appeals as to the best authority, there can be little doubt; as the method of computation itself, limited as it is among the egyptian annalists, was yet peculiar to them. The only occasion where the name of Manetho occurs connected with a date of this nature, is a passage of Syncellus;^l which some have interpreted as stating, that Manetho had placed the occupation of Egypt by the Shepherds in the seven hundredth year of a canicular cycle. Of this, however, as the text of Syncellus is now read, no sense whatever can be made; and unless we suppose either that the passage is corrupt, or that Syncellus himself has misquoted or misunderstood Manetho, we must admit that Manetho computed his cycles in a manner different from any hitherto mentioned.^m For as the seven hundredth

^h Canic. p. 35.

ⁱ Techn. Chronol. Bd. i. s. 134.

^k Brief remarks on the chronol. &c. p. 32. note.

^l Chronogr. p. 103.

^m This confused passage of Syncellus, which has been the basis of so many erroneous and discordant systems relative to egyptian history, has been analyzed in my Brief remarks on the chronology of the egyptian

year spoken of by Syncellus in connexion with the cycle of Manetho, is also, according to the same christian chronologer, the seven hundredth year after the dispersion of Babel, and as the dispersion of Babel is placed by him in the year 2724 B. C., the cycle itself would have terminated in 1264 B. C.; which would harmonize with no method of computation hitherto developed. Although Marshamⁿ has clearly pointed out this discrepancy, yet Fréret,^o and after him Champollion Figeac,^p have founded their respective systems of egyptian chronology upon the basis of the date of Syncellus, as alluding to seven hundred years of a cycle terminating in 1322; and Pezron^q has also admitted it into his calculations, but on the supposition that it referred, in a confused sort of way, to the cycle of the Old Chronicle; which suited his views better. The results of their respective theories are as incongruous and unsatisfactory, as might be expected from the common error on which they are founded. What is perhaps still less excusable, Bailly has, with other critical fallacies of Fréret, adopted also this imaginary date, and assigned it considerable importance in his history of ancient astronomy.^r

dynasties; where the principal misinterpretations to which it has been subjected have been pointed out.

Chron. Can. p. 296.

^o Mém. de l'Acad. des Insc. t. xlvii. p. 30. sqq. and Déf. de la Chronol. pp. 25, 407.

^p Prem. Lett. sur le musée de Turin, notice chronol. p. 99.

^q L'antiquité des tems défend. &c. 4to. p. 168.

^r Hist. de l'astron. anc. pp. 173. 402.

SECTION II.

CONCERNING THE TWELVE EGYPTIAN CALENDAR MONTHS, AND THE TWELVE SIGNS OF THE ZODIAC. ANALYSIS OF THEIR ORIGINAL POSITIONS WITH RESPECT TO THE SEASONS, AND TO EACH OTHER.

HAVING thus examined, in as far as our scanty materials will permit, the true nature and history of the canicular cycle, and of the form of year on which it was grounded, we shall now proceed to inquire more minutely into the origin, and primitive arrangement with respect to the seasons, of the egyptian calendar itself; that is to say, of the twelve months which constituted the elements of that year and cycle. The investigation of these matters will, besides its own immediate results, also tend naturally to throw additional light on others previously treated of. And on entering upon this obscure and difficult portion of our subject, I shall at once lay distinctly and concisely before the reader the basis, and at the same time the summary, of those researches to which the remainder of this essay will be devoted, by observing: that a careful examination of the names and hieroglyphical emblems of the twelve egyptian months, as referred to the twelve corresponding seasons of the climate of the banks of the Nile, and illustrated by the general details of egyptian tradition and mythology, have led

me to infer: First, that these emblems were originally adapted to a year, whose Thot, or first day, was fixed about the autumnal equinox; Secondly, that on the basis of such a year, there exists between the names and characters of the months, and the signs of the zodiac considered as mythological symbols or hieroglyphics, so close a correspondence and analogy, as not only affords additional proof of the correctness of this basis, but tends to explain and elucidate, in a new and unexpected manner, that great mystery, the origin and primitive use of the zodiac itself.

I am well aware how very strong, and indeed reasonable, an inclination there may be, to consider discussions of this kind as useless or visionary, and more especially all speculations connected with the history of the zodiac,—a name which, considering the extravagancies into which this subject has led many learned and ingenious persons during the last thirty years, might be supposed sufficient in itself to call forth a blush on the cheek of every egyptian antiquary, for the errors of his brethren, if not for his own. Convinced, however, of the reasonableness, I will not say the conclusiveness, of the system which I am about to propose, I shall not be deterred by any such considerations from offering those remarks which may, I conceive, whether correct or erroneous, be calculated either in themselves to throw light on an obscure point of antiquity, or lead to farther inquiries illustrative thereof.

It will readily be admitted, that any people, in whatever state of barbarism or civilization they may be supposed, who established a form of year, divided into twelve months, according to the seasons, must have intended that its revolution should bring about,

more or less accurately, the returns of those seasons to the corresponding months. Some, when they discovered that their computation was defective, may have been willing, from indifference, superstition, or other causes, to submit to the inconvenience of a mutable year, while others were careful, by occasional correction or intercalation, to keep its commencement more or less steady to its original point; but none could have meant to establish, in the first instance, as a positive institution, so very useless or even pernicious an irregularity. That the Egyptians, at least, had no such intention, we appear to have convincing proof in the hieroglyphic signs of their months, emblems handed down from very remote antiquity, having been observed in dates of records, which may reasonably be assigned to a period not less than fifteen hundred years prior to the christian era, as has been shown in a satisfactory manner by M. Champollion the younger, in his letters on the museum of Turin.^a These emblems I have caused to be engraved, for the convenience of reference,^b and in order that the reader may judge for himself, how far I am justified in supposing that they represent the portion of the year to which I am about to assign them.

The characters here given are borrowed from the work of Professor Kosegarten^c on the ancient language

^a Lettres I. II. à M. le duc de Blacas d'Aulps, relatives au Musée égypt. de Turin, Par. 1824, 1826.

^b Vid. PLATE No. I. In the names of the months I have there adhered to the vulgar greek orthography, as adopted by Professor Kosegarten, which differs in some instances from what I have in the sequel been induced to prefer, as the more genuine coptic or egyptian forms.

^c De prisc. ægypt. litterat. Comment. I. p. 50, tab. D. Also ap. Young, Rudiments of an egypt. dictionary, p. 5, append. to Tatham's Egyptian grammar, Lond. 1830.

and literature of Egypt, being derived originally from the papyri of the museum of Turin ; and many of them may be seen in the plates to the letters on that museum,^d above mentioned, occupying their places in the dates of the hieroglyphic inscriptions, which form the material of those learned and ingenious illustrations. I have seen another set of similar characters compiled by some of our own countrymen, in the course of their researches in Egypt, and forming part of a valuable collection of hieroglyphic and other remains, engraved in lithography at Cairo.^e The symbols of the months are, with little variety, the same, to all essential purposes, as far as our present inquiry is concerned, in both collections ; but I have preferred those of Professor Kosegarten, as well from their indisputable antiquity as from their greater simplicity. The principal variations in the other set are, first, a sign of water or moisture under the numeral of each month, possibly an emblem of the general influence which the phenomena of the Nile exercised on the regulation of the calendar, as on most other national institutions of the Egyptians ; and, secondly, that the idea month is designated by a star, in addition to the more familiar and ancient emblem, the inverted half-moon. We shall have occasion farther to notice this last peculiarity in a subsequent page.

The year, it will be observed by a reference to the plate, is divided into three portions, each containing four months ; which arrangement corresponds to the statement of Diodorus,^f that the Egyptians acknowledged but three seasons, spring, summer, and autumn,

^d Vid. Atlas à la 2^{de} lett.

^e Materia hieroglyph. pl. vi. conf. Young, Suppl. Enc. Brit. art. Egypt, pl. lxxvii. No. 179.

^f Diod. i. c. 11, 16.

and may be the foundation of the tradition mentioned by that author, and familiar among the ancients,^g that their year itself formerly consisted of only four months. The notion, however, that such a computation ever was in actual use, though admitted by many chronologers, in common with years of one, two, and three months, for the accommodation of fanciful systems, appears destitute of historical proof, as well as of reasonable probability.

The first four months, or the first season, Thot, Paophi, Athyr, Choiak, are represented, first, by the common sign of month, an inverted half moon; secondly, by the peculiarly characteristic sign of the season, a group of lotus flowers and buds, symbols of vegetation familiar to those conversant in hieroglyphic lore,^h but more especially of the fresh and vigorous vegetation caused by the fertilizing influence of the waters of the Nile; thirdly, by their respective numbers, I, II, III, IV. The emblems of these four months denote therefore the season commencing with the first subsiding of the inundation, when the egyptian plain burst forth, as it was gradually uncovered by the waters, into the most brilliant verdure; partly

^g Diod. i. c. 26. Plut. in Num. c. 18. Censorin. de die nat. c. 19. August. de civit. Dei. xii. 10, xv. 12. Plin. H. N. vii. 49. Solin. Polyh. c. 1, p. 3, C. edit. Salm. Procl. in Tim. Plat. p. 31.

^h This sign is also the phonetic letter **Ⲱ**, (SH) of the egyptian hieroglyphic alphabet. M. Champollion (précis du Syst. hiérog. 2de édit. p. 116.) calls it an espèce de *jardin*, because it is the first letter of the word **ⲰNH**, which bears that sense in coptic. (ibid. p. 361. It is however evidently but an abbreviated variety of the group of water-plants, the symbol of the lower region, that is, of lower Egypt, so remarkable for that species of vegetation. (vid. Champol. Panthéon. pl. 7. A. 7. B.) So that the word **ⲰAPI**, the egyptian generic name for water-plants, would perhaps furnish a more appropriate derivation. (vid. Rossi. Etym. Copt. and Croze. Lexic. ægypt. in voce).

natural, arising from the spring of the lotus, and the multitude of other plants, as well aquatic as of spontaneous growth, for which Egypt was so celebrated that Pliny, supported by Herodotus,ⁱ asserts they would almost suffice for the subsistence of the inhabitants, without toil or tillage of any kind; partly—if one may be allowed to use such a term—artificial; for the sowing commenced as the flood subsided, and the young blade, during this season, rapidly springing up, contributed still more to deck the fertile plain with luxuriant green. These four months, therefore, have been not inappropriately named in the Cairo collection, the season of water plants.

Of the next four, Tobi, Mechir, Phamenoth, Pharmouthi, the precise sense of the symbol is not so obvious. The hieroglyphic legend, read phonetically, gives us Er- or Hir, or H-r-t; which syllables, Champollion, from the analogy of the Rosetta inscription, interprets, though on somewhat questionable grounds,^k “brilliant or resplendent.” Admitting, however, the correctness of the rendering, it would be difficult to see the propriety of the application of this epithet to the four months in question, which from their position must have been the season of drought and aridity, without being that in which the sun was at his greatest height and brilliancy. In the Cairo collection they are called the season of ploughing; but I question whether there be sufficient authority, from the history of ancient Egyptian husbandry, to justify such a description. The season of harvest would, I conceive, be a more appropriate appellation, for rea-

ⁱ Plin. H. N. L. xxi. c. 15. Herod. ii. 92.

^k Précis. du Syst. hiérog. 2d ed. p. 208. Tab. gen. No. 395. conf. Klaproth Collect. d'antiquités Egypt. fol. Par. 1829. Observat. crit. p. 7.

sons which shall be given when we come to examine the months in detail. The position, however, which these four occupy, renders the sense of their hieroglyphic name of less importance; since the characters of those which precede, and of those which follow them, sufficiently vouch for their own.

The four last, Pachon, Paoni, Epiphi, Messori, are rightly named in the work just quoted, the season of waters; that is, of the increase or overflow of the Nile, as expressed by the hieroglyphic of water, and more especially of the water of the Nile, thrice repeated, and forming the most important feature of the group. This emblem is almost too well known, and its sense too obvious, to require much comment; being one of the most common and familiar, and occurring constantly, not only as the hieroglyphic sign, but as the picture as it were of water. Thus, in a scene given in the Cairo collection,¹ where a body of prisoners is led across a river, probably the Nile, or one of its branches, the water is represented by a number of these zigzags, among which are also drawn fish, and round their edges leaves, denoting the water plants on its banks. The boats in the river scene of the grotto of Elithya are also drawn on a similar ground. The same figure is applied to the pouring of water, the fluid being represented by a zigzag line issuing from a vase; and is also the sign Aquarius of the zodiak.

Professor Ideler, in allusion to certain passages of the ancients above quoted, concerning the ancient subdivision of the egyptian year, while yet unacquainted with the discoveries on which the present

¹ Mater. hierogl. pl. xxxvi.

observations are grounded, expresses himself as follows:^m “ It is very probable that the Egyptians, on the first establishment of their solar year, subdivided it into periods of four months, as nature herself subdivides the seasons in their climate in a similar manner; namely, into the period of the inundation, that of the bursting vegetation, and that of dry and unwholesome heat.” This is so apt and true a description of what has since turned out to be the fact, that one might almost have supposed, that instead of being merely an ingenious conjecture, it had been written as a commentary on the hieroglyphic calendar itself.

On the supposition, then, that these emblems denote the peculiar character of the respective seasons or months, as originally fixed in the primitive egyptian calendar; it remains, before we can be led to any further conclusions, to assign these months their proper position in the solar or tropical year, corresponding to their characters. And here we can have little hesitation in fixing the commencement of the first month to the autumnal equinox; as well from the probability that the Egyptians, in common with other neighbouring nations, in the early ages of their history, really did so reckon, as shall be seen,—as from the fact, that at this period precisely, with the subsiding of the inundation, commenced that luxuriant growth of water-plants, and that florid vegetation indicated by the hieroglyphic of the season. “ The lotus,” says Pliny,ⁿ “ springs up as the waters of the Nile begin to subside; its stalk and luxuriant leaves not unlike those of a bean, but shorter and more

^m Techn. Chronol. Bd. i. s. 94.

ⁿ Hist. nat. L. xiii. c. 17. conf. Herodot. ii. 92. Theophr. Hist. plant. iv. c. 10. conf. Prosp. Alp. not. ad loc.

slender, crowned with a flower like a poppy." This last is a tolerably accurate description of the flower of the symbol, as represented in the more finished hieroglyphic texts. To the above we may add the elegant description of the same phenomenon by our own geographer Pinkerton :^o " The lotus is a species of nymphæa or water lily, which at the retreat of the inundation covers all the canals and shallow pools with its broad round leaves, among which are its cup-shaped blossoms of pure white and cerulean blue, reposing with inimitable grace on the surface of the water." And the French memorialists remark,^p that at this period the Nile rapidly retiring, " the earth is all of a sudden covered with abundant vegetation." With respect to the remaining months, and the general rapidity of growth of all kinds which is the character of the season, Maillet^q observes, that " during November, December and January, the vegetation is so powerful, that an ox reposing on the grass would find sufficient pasture for a day by browsing around him without rising from his place." This first season therefore comprehends the four months dated from the end of our September, during which the sun traverses the signs of Libra, Scorpio, Sagittarius, and Capricorn. The next season, the four months of drought, from the end of January to the end of May ; and the season of water, or of the increase of the Nile, the remaining four, from the end of May to the end of September. It might perhaps be objected,

^o Modern Geogr. 4to. vol. ii. p. 736, conf. Heeren, Ideen. &c. ii. Th. ii. Abth. s. 357, ff.

^p Mem. relative to Egypt, &c. Engl. trans. 1800, p. 12.

^q Descript. de l'Égypte, ed. 1740, vol. i. Let. i. p. 30. conf. Savary Lett. sur l'Ég. 8°. 1786, tom. ii. p. 7.

that the swell of the river does not begin until about the summer solstice, towards the end of June; and there is no doubt but that the greater number of authors, both ancient and modern, are used to date the augmentation of its waters in general terms from that epoch. But that this must be understood, not of the first perceptible influence of the rains of Ethiopia upon its stream, but either of the period when it became so visibly affected as to excite the attention of the vulgar, or when the first observation of the increase was made on the nilometer, and promulgated to the public, may be presumed, as well from the testimony of those travellers who have had the best opportunities of judging, as from the ascertained facts respecting the fall of the periodical rains, which commence when the sun is perpendicular to the climate of Abyssinia, about a month after the equinox, and constantly increasing, produce a perceptible alteration in the waters of the river about the end of May or the beginning of June.^r The statements of egyptian travellers on this point are so various as almost to be contradictory, some placing the first visible increase at the solstice, others a month before, others not for some days afterwards; which discrepancy must be accounted for by the fact, admitted by intelligent observers, that the phenomenon itself is not strictly regular in its periodical returns. The following is the account of Maillet,^s whose opinion, from his long residence in the country, added to his general good sense and accuracy, is deserving of greater attention than that of the mere occasional

^r Poncet. ap. Pinkert. Coll. of Voyag. vol. xv. p. 83. Bruce, Travels, vol. v. p. 333, 8^o Edin. 1805.

^s Descrip. de l'Eg. vol. i. lett. 2. p. 70.

and hasty traveller, who must necessarily be a partial and superficial observer. He remarks, that though some asserted that the river began to increase as soon as the sun had crossed the line, no such augmentation was perceptible, and that, in general; there can hardly be said to be any difference until the last days of April or the beginning of May. The waters first become muddy, and then increase, but so slowly, that, during a considerable part of the month of June; there is hardly a cubit of rise; but that, about the solstice, it is already very considerable. And, in conformity with the above, in his account of the nilometer or mikias,^t he states, that the first examination takes place about the end of April; the second about the end of June, at which time the Nile has risen eight or nine cubits, and adds, that it was a wise regulation to place the first announcement of the increase of the waters at this advanced season, in order to spare the people anxiety concerning their progress. This may account for the circumstance that so many authors, without inquiring into details, assign the solstice, in round terms, as the fixed date of the commencement of the inundation. The testimony of Maillet is supported by several others of the most respectable writers on Egypt, and the minutest observers of the physical peculiarities of its climate. “The river Nile,” says Thevenot,^u “begins commonly to swell in the month of May, and on St. Peter’s day, the 28th of June, they begin to cry about the streets how much its waters have risen.” “In the first days of June,” says Savary,^v “the Nile begins to increase, but the

^t Op. cit. p. 83.

^u Travels, Engl. trans. 1687, pt. i. b. ii. c. 22, p. 158.

^v Lett. sur l’Eg. tom. ii. p. 179.

augmentation first becomes remarkable about the summer solstice." Shaw,^w too, states, that, in the middle of June, in his time, the waters had risen very considerably.

It will farther be observed, that the hieroglyphic of water attached to the third season is to be considered as denoting, not so much the inundation itself, as the space between the first perceptible rise of the river and the period when its waters began again to decrease; first, because the actual overflow of the Nile scarcely lasts three months, commencing at soonest in the middle of July, and terminating suddenly in the beginning of October; secondly, because the season of vegetation, or of water plants, setting in at once with the subsiding of the flood, (as illustrated by the above passages of Pliny, and other authors, collated with the hieroglyphic of the first four months,) cannot admit of the new year's day being fixed at any other epoch than the equinox of autumn, or towards the end of our September, when the Nile, according to the unanimous testimony of both geographers and travellers, regularly begins to uncover the land, its stagnating waters to send forth their luxuriant growth, and the whole face of nature is renewed; all which coincidences combined formed an epoch which could hardly fail to present itself to the first simple framers of a calendar in this climate, as the natural and obvious commencement of their year. As, therefore, the Nile does, in fact, begin to alter its appearance, almost invariably, many days before the solstice, it remains an evident consequence, that, consistently with the quadrimestrial partition of the year, the month

^w Travels, Ed. 1808, 8^o vol. ii. p. 224, c. 2, sect. 3.

preceding that epoch must necessarily be the first of the season of waters, or of the rise of the river. But, besides this, although we certainly have the statements of many respectable authorities among the Greeks, that they themselves were the first to discover the true cause of the inundation of the river, I confess I am unable to look upon the opinion, that the Egyptians, during the flourishing ages of their empire, were totally unacquainted with this important point of the natural history of their own country, in any other light than as an egregious paradox. There can be no doubt but that the Egyptians and the Ethiopians of the upper Nile were a people of the same origin and of similar manners, and in habits of frequent communication, both civil and military, with each other; so that the report of a single traveller, or emancipated prisoner of war, would have sufficed to establish the truth. And if we admit, what has long been the general opinion of the learned, that Abyssinia is the parent land of the Mizraimite race,^x the notion that the Egyptians should, in the infancy of their civil institutions, and for some thousand years afterwards, never have had a tradition of the periodical rains which swelled their river, becomes quite inadmissible. Here, as usual, Herodotus is appealed to, whose testimony I reject at once, as the priests most unquestionably made game of him in their answers to his inquiries respecting the Nile. The next authorities are Eudoxus and Plato. These two distinguished men visited Egypt about the same time, and have transmitted

^x Diod. l. iii. § 2, 3. Panw. Rech. sur les Egypt. vol. i. pp. 23, 225. Murray, app. to Bruce's travels, vol. ii. p. 479, Ed. 1805. Zoëg. de Obelisc. p. 577. Heeren, Ideen, &c. II. Th. I. abth. p. 439. Champol. Précis, &c. p. 455.

two different, though apparently perfectly correct, accounts of the real opinions of the priesthood concerning the phenomena of their river, and which are also jointly stated and confirmed by Horapollo. That of Plato shall be mentioned in another place. But Eudoxus^y was informed that the inundation was caused by the periodical fall of the tropical rains. Now, as they must have known that these rains, falling with greatest violence during the months of May and June, were immediately followed by the at first almost imperceptible alteration of the state of the river, they would find it the more reasonable to comprehend the month immediately preceding the solstice in the season of waters, although the visible rise of the river might not commence until nearly the solstice itself. The hieroglyphical seasons may therefore be distributed, as to their more immediate reference to the phenomena of the Nile itself, which influenced all the institutions of this country, into four months of the rise, four months of the fall, and four months of the lowest or stationary condition of its waters. Lest, however, it should be thought that too much reliance has here been placed on conjecture, and too little on ancient authority, I shall produce very convincing and satisfactory testimony to prove that this division of the seasons is as conformable to the familiar opinion of antiquity as to the truth. The following is the result of the investigations of Aristides, who states that he

^y Plutarch, de plac. phil. iv. i. Eustath. Comm. ad Odyss. p. 1505. Edit. Rom. conf. Libell. de hist. philos. inter Galen. opp. c. 88. Before Eudoxus however, Democritus, among the Greeks, had assigned the true cause, (Diod. i. § 39,) whose knowledge, if we may trust his own account, as quoted by Clemens Alex., was also derived directly from Egypt. (Strom. lib. i. p. 304, A. conf. Diod. i. § 98.)

had traversed Egypt four times, as far as Ethiopia, for the express purpose of examining the peculiarities of the Nile. “When the proper season arrives,” says he,^z “the river begins to increase, but so slowly, that at first the augmentation is not perceptible, but, setting out with a few inches, it gradually gains force, so that in about *four months* the waters reach their greatest height at Memphis.” “They subside in a similar manner, and require about as long to return to their pristine state as they did to reach their full height.”^a Precisely the same account is given by Seneca:^b “*Nilus per quatuor menses liquitur, et illi æqualis accessio est,*”—“The Nile subsides during *four months*, and the increase of its waters occupies an equal time;” all this too agrees exactly with the distribution of the egyptian year by Diodorus, as above mentioned, into three seasons; spring, summer, and autumn—winter being omitted altogether, and justly, as there is in fact no such season in Egypt. The arrangement that would appear most natural in the opinion of a Greek, would probably be February, March, April, May, for spring; June, July, August, September, for summer; October, November, December, January, for autumn; but it is to be supposed that the Egyptians, in conformity with the peculiarities of their climate, reversed this order; the four last mentioned months, the first of their calendar, being in fact their season of spring, seed-time, and opening vegetation.

Now the symbols which we have just been examining, being peculiarly figurative of certain seasons,

^z Orat. Egypt. Ed. Ox. 1730, tom. ii. p. 336.

^a P. 338.

^b Quæst. nat. iv. 2, p. 725, A.

it results indisputably, that it could not be the intention of the Egyptians when they invented them, that the months whose names they represented should shift their places in the year ; no nation could have been willfully guilty of such an absurdity. It is equally plain, that the year to which they were originally adapted, commenced, not with the heliacal rising of Sirius, and the overflow of the Nile, as some suppose was the case on the first establishment of the calendar,^c but with the subsiding of the waters about the autumnal equinox. Nor is this view of the primitive arrangement of the Calendar of the Egyptians by any means new ; several distinguished writers have been of opinion, that their ancient year began in autumn ; among whom it were sufficient to mention Calmet, Jackson, and Playfair.^d None of these however state their reasons in detail. But the celebrated Zoëga, who, in profoundness of learning and acuteness of conception, is second to no Egyptian antiquary, not only was convinced, but had actually, as he himself informs us, composed a dissertation to prove that the Thot or commencement of the year, in its original form, was fixed precisely as I have stated it ; that is, “*ab incipiente retrocessu Nili,*” “*from the first subsiding of the inundation of the river.*”^e His reasons for holding this opinion he also does not give at length, and it must be admitted that his views of certain other

^c See Appendix, No. VIII.

^d Calmet Dict. de la Bib. v. Monde. Playfair, Chronol. p. 11. Jacks. Chron. Antiq. vol. i. p. 23. ii. p. 5. It must be admitted, however, that this learned chronologer's ideas are here somewhat confused.

^e Num. Ægypt. Mus. Borg. addend. p. 395. I have since observed that Dr. Hales (Analys. of Chronol. vol. i. p. 31.) supports the same opinion, by reasons drawn from the natural history of Egypt, similar to those here advanced.

collateral points of egyptian chronology, as stated in the passage referred to, are far from correct ; indeed, his own diffidence of their soundness, as he himself informs us, prevented him from publishing his essay ; there are however various circumstances, as shall be observed in another place, which lead to a belief that some of the arguments which have been, or shall be, here offered in support of this opinion, were among those which induced him to adopt it ; but owing to the comparatively backward state of this department of antiquarian science in his time, many others of a more forcible nature could not have occurred to him.

It will now be necessary to turn our attention to another essential portion of our subject, the history of the egyptian zodiac. We shall first have occasion to inquire generally into the real nature and origin of that institution, and its primitive connexion with the civil reckoning of time ; and afterwards endeavour to illustrate both conjointly, by pointing out the remarkable correspondence and analogy which exists between the signs of the astronomical, and the months and seasons of the civil calendar, on the basis of the positions already laid down, with reference to the traditional mythology, and ancient language and nomenclature of the country.

It is, I believe, universally admitted to be an erroneous opinion that the twelve positions of the celestial zone called the zodiack, were originally divided, or received their names, in consequence of certain groups of stars which it traverses, being supposed really to resemble in their form or disposition, the figures of human or brute creatures, monsters, or other objects. Such resemblances may have been imagined in later times, and adapted to the ancient names of the signs

by fanciful astrologers ; who, in the delineation of a sphere, naturally endeavoured, though unsuccessfully enough, to group the stars in the neighbourhood of the ecliptic, into constellations corresponding in their forms to the physical emblems, whose names were attached to certain portions of that circle. But those visionary images can, and ought to be, no guide to us in our researches into the real history of the signs or symbols which represented the twelve divisions of the sun's annual course in the heavens ; or into the origin of their various appellations.

The Egyptians or any other nation, who instituted, in the infancy of their civilization, an imperfect year of twelve months, supposing that the revolution of the seasons would be completed during their course, would naturally, as they advanced in science, divide the heavens also into the twelve portions, which the sun was supposed to occupy during each of those months respectively ; and both the names of their months, and of the corresponding divisions of the sphere would be connected with their mythology, and the titles or attributes of the various deities whose celestial emblems they may have discovered in particular points of the heaven, or seasons of the year, or to whom certain stars or seasons were especially dedicated. Such an institution seems to have been common, under certain varieties, to almost all the ancient nations, Chaldees,^f Egyptians, Chinese, or others, who made any progress in astrological science ; and might have suggested itself to each separately, without any immediate connexion with their neigh-

^f That this was the case with the Chaldees, Diodorus assures us : *Τῶν θεῶν δὲ κυρίους εἶναι Φασὶ δώδεκα τὸν ἀριθμὸν, ὧν ἐκάστη μῆνα καὶ τῶν δώδεκα λεγόμενων ζώδιων ἐν προσημύμοισι.* Lib. ii. § 30.

bours, from its obvious correspondence to the twelve months and three hundred and sixty days, into which the same tribes seem originally to have agreed in dividing their year. Yet the zodiac of the western nations,^g to which alone our present observations are confined, affords even in its present form the strongest internal evidence, that though corrupted or altered, as it is admitted to have been to a certain extent in passing through the hands of the Greeks, it is originally an egyptian invention; as well from the peculiar turn of that people, to represent by material emblems every thing capable of being so represented, as from the palpable connexion of some of these emblems with their figurative mythology. Each sign of the zodiac, therefore, appears to have been a mere hieroglyphic of the season of the year to which it corresponded, or of the deity to whom that season was specially sacred. This has been well pointed out by Warburton^h and others, and is indeed very generally admitted, though the efforts made since the days of Macrobiusⁱ up to the present century, to analyze more closely the origin of the institution itself, by a reference to the climate or mythology of the banks of the Nile, having been directed upon false principles, have not been successful.^k The hieroglyphical zodiac

^g See Appendix, No. IX.

^h Div. Leg. 4to, vol. ii. p. 471.

ⁱ Saturn. lib. i. c. 21.

^k Kirch. Œdip. Æg. tom. iii. p. 153, sqq. (whose interpretations appear to me to have come much nearer the truth, than those of others who have made it their business to vilify both his labours and himself.) Schmidt de zod. orig. ægypt. in opusc. Carolsr. 1765. Pluche Hist. du ciel, tom. i. lib. i. Court de Gebelin. Mond. prim. t. iv. p. 65. Dupuis, orig. de tout les cultes, tom. vi. pt. i. p. 390, sqq. M. Remi Raige in a memoir inserted in the Description de l'Égypte, (Antiquités. vol. of Mem. p. 169.) undertook, as I have done, to investigate the origin of the zodiac,

therefore, represented the seasons mythologically or figuratively, and had no connexion with imaginary forms or creatures in the heaven itself.¹ All this will be put in a more clear point of view, when we come to trace the correspondence between the signs and the names and characters of the twelve months, according to the position they occupied in the civil year at its first establishment. Thus Cancer or the Scarabee represented the solstitial month of summer, that is the sun when highest in the heaven, and his heat and influence most felt; Libra the month of the autumnal equinox, Aries that of the vernal equinox, and so of the rest; afterwards, when the signs were attached by the Greeks to particular groups of stars, embodied into fantastical forms, the ancient terms became unmeaning, and the origin and history of the whole system was confounded and obscured.

That the twelve divisions of the zodiac, among the ancient nations, (whether chaldæe or egyptian,) with

on the supposition of an ancient connexion between the forms and symbolic significations of the signs, and the sense of the names of the coptic or ancient egyptian months. Thus far our two systems agree; but they differ in this, that the memorialist adopted as the groundwork of his, first that the egyptian zodiac was constructed 15000 years ago, about 8000 before the creation, on a moderate computation; the sign Capricorn which is now January, then representing July, Cancer corresponding to Capricorn, and so of the rest; 2dly, That the etymology of the names of the months is to be sought in the arabic tongue, which he supposed the most ancient dialect of egyptian. The conclusiveness of the ingenious essayist's arguments, is in proportion to the reasonableness of the postulates on which they are based.

¹ It is no doubt possible, however, that the appearances in certain portions of the sphere, may have suggested modifications or alterations of the emblems; as in the case of the sign Gemini, which, as we shall hereafter have occasion to observe, seems to have been consecrated to two kindred or twin deities, *σύνναοι θεοί*, perhaps from the remarkable appearance of two brilliant stars close to each other, in an otherwise not very brilliant part of the heaven which it represented.

whom the institution originated, were, from the first, signs or *δωδεκατημόρια*, and not constellations—portions of the sun's course in the heavens, corresponding, more or less accurately, to the seasons, not imaginary forms in the celestial sphere—we have strong proof in the tradition preserved of the manner in which the astronomers of those nations subdivided the ecliptic. I shall not go into the minute details of their method, as described by Macrobius of the Egyptians, and by Sextus Empiricus of the Chaldees,^m and quoted and illustrated by various popular authors among the moderns.ⁿ It will be sufficient to observe, that, by a species of clepsydra, they first measured the diurnal revolution of the heavens, noting the departure and return of a particular star to and from the same point of the horizon, and then pointing off twelve equal portions of the circle of the equinoctial, commencing from this star; which portions, transferred to the ecliptic, constituted the zodiac, and were therefore quite different in their nature from the fanciful constellations of unequal size into which the Greeks afterwards distributed the same zone. The method here alluded to is so vague, as to have excited the ridicule of some,^o who nevertheless have not ventured to deny the validity of the substance of the tradition, however they may have been inclined to criticise its details. It would appear also, as well from this mode of division as from the correspondence of the signs to the twelve months of the year, that the cardinal points of the

^m Macrobi. Somn. Scip. lib. i. c. 21. Sext. Empir. adv. Mathemat. lib. v. c. 24, p. 342, Ed. Fabric. Lips. 1713, fol. conf. Theon. ad Ptolem. Magn. constr. lib. v. p. 261.

ⁿ Petav. Var. Diss. lib. ii. c. 1. Goguet, Orig. des Loix, Par. 1758, tom. ii. p. 503, sqq. Fergusson, Astron. Ed. Brewster, vol. i. p. 307.

^o Goguet, sup. cit. p. 507.

sun's course could hardly have been placed elsewhere than at the commencement of the signs. That such was the case, is still farther evident from the circumstance, that the zodiac, on its introduction into Europe, and first application by the Greeks to their calendar, was, in fact, so constituted. I know well how little this assertion is in unison with the favourite theories upon this subject; but those theories are altogether of modern invention, and grounded on what is, I am convinced, a fallacious view of the history of the institution, totally unknown to the ancient authors, from whom our first notions of it are, or ought to be, derived, and altogether repugnant to their testimony. This we shall have occasion to inquire into farther, when we come to treat of the use of the zodiac in Greece. In proof of the correctness of the opinion here advanced, I shall be contented, for the present, to quote Hipparchus, who is, beyond a doubt, the highest authority in these matters, and who, when criticising the works of certain of his own countrymen, who followed a different arrangement, positively asserts, that almost all the early astronomers fixed their cardinal points in the beginning of the signs: *καὶ ὑπὸ τῶν ἀρχαίων μαθηματικῶν τῶν πάντων σχεδὸν ἢ τῶν πλείστων, τοῦτον τὸν τρόπον ὁ ζωδιακὸς κύκλος διήρητο.*^p Now, as the coincidence of the first star of Aries with the equinoctial colure, which is usually supposed to have given rise to the present arrangement, did not take place until the days of Hipparchus himself,^q it is evident

^p Hipp. in Arat. Phenom. lib. ii. c. 3, in Petav. Uran. app. ad op. de doct. temp. vol. iii. p. 120, conf. p. 119.

^q Until after the days of Hipparchus, the greek astronomers reckoned their longitude on the equinoctial, and not on the ecliptic. It is essential that this should be borne in mind, in all references to the statements of Eudoxus, Meton, and other ancient observers, concerning the positions

that the ancient mathematicians to whom he alludes must either be the Egyptians or Chaldees themselves, or those among his own countrymen who first adopted the use of the zodiac from them, about the age of Thales probably. If, therefore, preceding astronomers, of different ages, were in the habit of placing the cardinal points at the commencement of the signs, it is evident that the use of the institution among them must have been precisely as above stated, namely, that a sign represented rather a season than a particular group of stars. Accordingly, we learn from Achilles Tatius, that Euctemon, one of the most ancient greek philosophers recorded to have used the zodiac, and who flourished three hundred years before Hipparchus, placed the autumnal equinox in the first of Libra, the winter solstice in the first of Capricorn. Calippus, about one hundred years after Euctemon, arranged his cardinal points in the same manner. Others there were, no doubt, who followed a different method; but almost all those concerning whose astronomical opinions we have any authentic tradition, agreed in making their divisions equal, that is, consisting of thirty degrees each. It is evident, therefore, on the authority of Hipparchus himself, supported by that of the other classical authors on this point of the history of science, that the distinction between signs and constellations, supposed to be an invention of that philosopher, is much more ancient, and, in fact, coeval with the origin and primitive use of the zodiac itself; and that the arrangement of the egyptian symbols into the irregular and fantastical constellations now visible on our globes, was

of the heavenly bodies for their respective ages. This matter has been fully explained by Petavius; Var. Dissert. lib. ii. cap. 1, sq.

probably an innovation of the Greeks, in the days, it would appear, of Cleostratus of Tenedos, not long after the introduction of the institution into Asia minor. But this arrangement, as shall be shown hereafter, seems to have been little attended to by the early practical astronomers of Greece.

As it can hardly be supposed that the complicated process, the details of which have been preserved by Macrobius and Sextus Empiricus, relates merely to one single and original distribution of the dodecatemoria, in the infancy of the civilization of each of the two nations to whom they ascribe it, it may be farther inferred, from the terms of their description, as well as from the real nature of the zodiac itself, as shewn above, that this division of its signs took place from time to time, in order that the symbols might continue to correspond to their respective seasons or portions of the sun's course, from whence they would otherwise have varied owing to the precession of equinoxes. This would necessarily imply an acquaintance on the part of the Egyptians with that phenomenon; which most of those who have treated of their astronomical science have been inclined to doubt or to deny. As I have, throughout these remarks, endeavoured to combat what appear to me the exaggerated opinions entertained by some, on the subject of the antiquities of Egypt, I trust I shall not be considered as falling into a similar error, when I state, that it seems almost inconceivable, that any nation among whom such an institution as the zodiac existed, and who were in the habit of observing the heavens by a reference to its divisions, during perhaps upwards of a thousand years, should have failed during so long a period to discover the variation of the tro-

pical and equinoctial points with respect to the fixed stars. Ptolemy appears to ascribe to Hipparchus the merit of having been the first who made this observation,^r and though his language is somewhat ambiguous, yet this opinion, as if upon his authority, has been very generally adopted by the moderns. Upon this point I shall be contented to appeal to Hipparchus himself, whose evidence must I conceive be superior to that of any other person; and whose words, in the following passage, not only furnish sufficient proof that the fact was known, or at least suspected, long before his time, but afford reasonable ground of belief, that the Egyptians themselves were not uninitiated into the mystery. The celebrated Eudoxus of Cnidos, generally considered by the Greeks as the greatest genius among their early astronomers, wrote two works; one called the *Enoptron* or *Mirror*, the other the *Phænomena*: from the first of these Hipparchus quotes in the following terms: “Eudoxus in his *Enoptron* observes, that ‘the tropical points of the sun’s course appear to be subject to variation, but so slight as to be scarcely perceptible.’”^s These words of Eudoxus, which seem to have been misunderstood by his less enlightened countrymen, as Attalus, and even Hipparchus, at the time when he wrote the work from whence the above is an extract, speak for themselves, and prove that the truth had in this instance not escaped him;^t and as the advances made by him in astronomical science, beyond his ignorant

^r Magn. constr. Ed. Basil. 1538, p. 59. L. iii. init.

^s Hipp. ad. Phaen. lib. i. p. 112. λέγει γὰρ ἔν ἐν τῷ ἐνόπτρῳ ἕτως· φαίνεται δὲ διαφορὰν τῶν κατὰ τροπᾶς τόπων καὶ ὁ ἥλιος πρὸ ἰέμενος, ἀδηλοτέρην δὲ πολλῶ καὶ παντε δῶς ὀλίγην.

^t See Appendix, No. X.

countrymen of the day, are invariably attributed to his having studied a considerable time in Egypt, it is not unreasonable to suppose, that whatever information he may have possessed on this point, was derived from the schools of Thebes or Heliopolis. As to what use the Egyptians may have made of this discovery, even supposing them to have made it, or how far they may have applied it to the regulation of the difference between the sidereal and the tropical year, that is another question, concerning which we have no data to justify any satisfactory conclusion.

This opinion concerning the real use of the zodiac among the Egyptians has, I find, been stated, and I conceive judiciously and correctly, by Kircher, after a learned Copt called Michael Schatta; and on the authority of the evidence of astronomical monuments, preserved among the ruins which cover the banks of the Nile, whether those recently brought to light by european travellers, or perhaps others still more important, now no longer in existence. "The images," says he, speaking of the egyptian sphere, "represented under hieroglyphical symbols, do not exactly correspond to their places in the heaven, but for the most part differ considerably; nor need we be surprised at this, since the object of the Egyptians in constructing these hemispheres was not so much to delineate asterisms, as the stations of their deities in the vast firmament. Nor did they, like the Greeks, suppose that the figures of their objects of worship were made out by certain groups of stars, but they denominated such or such a group the station of a certain divinity, who was supposed to preside over a certain portion of the heaven."^u The correctness of the first part of this

^u Œdip. ægypt. t. iii. p. 205. *Figuræ hieroglyphicis adumbratæ symbolis non exacte suis locis correspondent, sed ut plurimum differunt;*

remark, that the constellations figured on the hieroglyphical sphere do not always correspond to their true places in the heaven, has been, as relates to the planisphere of Dendera, admitted by all, and satisfactorily shewn by M. Biot,^v in his dissertation on this and the other greco-egyptian^w astronomical monuments. The second part coincides with the opinion above advanced respecting the true nature of the egyptian zodiac. It is clear also, upon this principle, that however consistent it may be with the phraseology of modern science, to speak of a certain cardinal point of the sun's course, having been at such or such an æra in the sign of the Ram, Bull, or so forth, it would be altogether incompatible with that of ancient hieroglyphical learning. The Ram being merely an emblem of the vernal equinox, that season was always in the Ram, the autumnal equinox always in Libra; so that, in fact, the zodiac among the Egyptians would be precisely what it now is among us, and has, in truth, with little variety, always been in civilized Europe, as has been stated above, and shall be pointed out still more distinctly hereafter, by reference to the most unimpeachable testimony of antiquity.

neque hoc cuiquam mirum videri debet, cum Ægyptii hisce hæmisphæriis, non tam stellas, quam stationes numinum in vasta illa firmamenti facie exprimere sint conati; neque enim uti Græci, figuras numinum stellarum coacervatione componi putabant, sed certam quandam stellarum congeriem talis et talis numinis stationem vocabant, quod tali aut tali loco cæli dominari credebant.

^v Rech. sur l'Astr. Egypt. sup. cit.

^w This term, for the sake of brevity, must be understood as referring to the monuments both of the greek and roman period. The science of the roman empire was in fact greek science; and the manners and language of this country, in as far as derived from Europe, continued to be greek. The hieroglyphical inscriptions of the roman emperors on these monuments are couched, partly at least, in greek; as is evident from the interpreted titles *Αὐτοκράτωρ, Σεβαστός, &c.*

On the present hypothesis, that the twelve egyptian months and the twelve signs of the zodiac formerly corresponded—the one as a vulgar or civil, the other as an astronomical or mythological calendar—to each other, and to a form of year commencing in autumn, the inquiry naturally suggests itself,—How and when this correspondence existed? whether was that form of year the ancient reckoning of three hundred and sixty days occasionally corrected, as I presume it must have been, by some rude method of intercalation? or, was it the reformed calendar of three hundred and sixty-five days, in which the five additional days, or epagomenæ, were annually and permanently supplied? This is a matter of great obscurity, connected intimately with the question at what period the reform of the calendar itself and the addition of the epagomenæ took place; the difficulty of which we have already had occasion to notice, as well as the variety of discordant opinions to which it has given rise among the most celebrated chronologers of modern times. I shall venture, in the sequel, to offer a few observations on this head, although all that can be said, from the great want of historical data, must necessarily resolve itself into conjecture. As, however, this inquiry does not essentially bear on the portion of our subject with which we are at present engaged, I shall delay entering farther upon it for the present, and proceed in my endeavour to amplify and corroborate the system, which I have here ventured to propose and develop, by some close critical and etymological illustrations of the names and characters of the individual months of the calendar, in connexion with the signs of the zodiac, derived from the mythology, language, and general antiquities of Egypt. In so doing, I shall

take pains to avoid all far-fetched analogies, and resist all temptation to strain, at the expense of quibble or subtlety, any connexion between the two systems, where not in itself reasonable or probable; but shall, in analyzing the seasons in their order, content myself with pointing out certain obvious and striking coincidences of a most unequivocal nature, comprehending more than one-half of the signs, and offering a few conjectures, to which I attach less weight, with respect to some others. That, with our still limited sources of knowledge, we should be enabled at once to clear up every portion of so enigmatical a system, hinging upon the nicest adaptation to each other, of various points of mysterious physical doctrine or local superstition, is hardly to be expected; but, considering how much new and unexpected light has been thrown on other portions of the symbolic mythology of Egypt by the discoveries of the last thirty years, it may be permitted to hope that something yet remains behind calculated still farther to elucidate our present subject. There are, too, various circumstances which render it improbable that more than a certain number of the emblems of the zodiac familiar to us should be of pure egyptian original, the Greeks having, it would appear, in adapting it to their own figurative astronomy, made some very important alterations in its primitive form, by substituting, for instance, the claws of the Scorpion for the egyptian sign of Libra, and the Crab for the Scarabee. As no complete specimens of egyptian zodiacs have yet been brought to light, but what are ascertained to have been executed under the Romans after their occupation of the country, we have but slender means of ascertaining what other changes of a similar nature may have taken

place. But, even such as they are, the monuments of the Thebais,^x apparently a mixture of egyptian and greek astrology, will be of great assistance in our researches into the original form and signification of the signs.

There exists, however, one very important monument among the ruins of Thebes, evidently of an astronomical nature, and which, as it belongs to one of the celebrated tombs of the theban kings, must, I presume, be referred to a period of antiquity far prior to the greek or even the persian conquest. This curious relic is published in the great french work on Egypt;^y and, as I shall have occasion frequently to refer to it, as confirming or illustrating my views, I have caused a sketch of the most essential portion of it to be engraved.^z It contains a number of symbolic figures; among others, a procession headed by a figure bearing an ear of corn, or some such object, followed at some little distance by the god Thot, with his ibis-head; a scarabee supporting the disc of the sun; another procession, headed by a somewhat similar figure, of whose hieroglyphic title the chief feature is a new-born infant; a lion couchant; a bull standing on another

^x See the zodiacs: of Esne, *Déscription de l'égypte. Antiquités*, vol. i. pl. lxxix. lxxxvi. lxxxvii. Of Dendera, vol. ii. pl. xx. xxi. Denon, *Voyage. Atlas*. pl. cxxx. sq., and Engl. trans. 1803, 8^o vol. ii. p. 316. vol. iii. p. 272. The circular planisphere in the plates to Biot, *Recherches sur l'astronom. égypt.* My illustrations have been drawn chiefly from the two monuments of Denderah, where the signs are complete, and arranged in their usual order. On those of Esne some signs are omitted, others repeated, and the whole appear under so many varieties of form and position, as to suggest rather the idea of astrological enigmas than zodiacs.

^y *Antiquités*, vol. ii. pl. lxxxii.

^z See PLATE II. I have here only given what appeared to bear immediate reference to the zodiac, occupying two opposite sides of the quadrangular tablet, which the reader, if necessary, may consult in full in the work whence I have copied.

emblem resembling the zodiacal sign *Libra* ; a non-descript animal, on whose back rides a crocodile ; a vase, a scorpion, &c. These figures, several of which are repeated on each side of the tablet or planisphere, are unquestionably, in great part at least, astronomical symbols, and most of them, it can hardly be doubted, signs of the zodiac, although the irregularity of their arrangement bears little or no reference to the corresponding seasons. This last circumstance leads to infer some mysterious signification ; any attempts, however, to throw light upon that, whatever it may be, have hitherto been, and will probably continue to be, vain and inconclusive ; from all such, therefore, I shall abstain. Other fragments there are, also connected with astrology, and probably of equal antiquity, engraved in the same splendid work, where similar figures occur singly or in lesser groups. There is another piece of egyptian art, of a mysterious and apparently astronomical nature, copies of which are not uncommon in collections ; it is a small stela, sculptured in relief, representing a naked male figure with a fantastical headdress, standing upon two crocodiles facing right and left ; in his left hand he holds two snakes, a scorpion, and a lion—in his right, two snakes, and a ram or goat. On the ground of the relief are other emblematic figures, much mutilated, in the only examples which I have seen. The back and sides are covered with hieroglyphics. One of these stelæ is given in the plates to Bruce's travels,^a the original of which, the enterprising author informs us, was found at Axum in Abyssinia ; and is probably

^a Pl. x. conf. vol. ii. p. 342, edit. 1805, 8°. Edin. It is now in the collection of my friend Mr. Charles Cumming Bruce of Kinnaird.

remnant of the expeditions of the Ptolemies into that country, or of the ancient communication civil or military, between the tribes of the upper and lower Nile.^b The traveller adds, that there are five or six precisely similar in the British Museum; and several are engraved by Kircher^c and Montfaucon.^d Other relics of egyptian or egyptio-greek astrology, to which we shall have occasion to appeal in the course of the ensuing inquiries, will be noticed in their proper places. A few illustrations of no unimportant nature, will be derived from a comparison of the modern arab or persian spheres, with those of Greece and Egypt. All being palpably derived from the same stock, it is not unreasonable to suppose, that traces of the primitive common original, which have been obliterated by the hand of time or of innovation in one, may have been preserved more entire in another.

As it may safely be assumed, that many of the favourite superstitions of the Egyptians are as ancient as the first formation of their calendar, it will appear evident, that if we would attempt to explain at all the mysterious import of those obscure and enigmatical ceremonies, which were attached to particular days of their months, on the supposition which will hardly be disputed, that they bore reference in their origin to particular seasons of the year, or phenomena of the heavenly bodies,—we can only hope for success, by going back to the original position of the months in the early ages of their civilization, when

^b See Append. No. XI.

^c Œdip. ægypt. tom. iii. p. 259.

^d Antiq. expliq. t. ii. pt. ii. pl. clxvii. and Suppl. t. i. p. 186. conf. Jollois et Devilliers, Descr. de l'Égypte. Antiq. Mém. pl. B.

those feasts were first established ; and I shall have occasion below to point out, on the basis of a year commencing in autumn, how closely some of the periodical solemnities, the particulars of which have been transmitted to us by the Greeks, correspond to their ancient places in the seasons. There can indeed be little doubt, but that the regular shifting of the feasts, which formed the essential peculiarity of the reformed calendar, gave rise to a portion at least of the mysterious significations ascribed by the egyptian priests to many of their religious rites, which to an ordinary observer appeared fanciful or unmeaning. Take for example the death of Osiris, which was celebrated towards the end of the month Athyr, and was accompanied by certain solemnities significant of the distance of the sun from the zenith, and the low state of the Nile ; this month we shall find, at its primeval institution, to have been that immediately preceding the winter solstice ; when such rites were peculiarly appropriate. But seven hundred years afterwards, the same ceremonies, though strictly adhered to, were apparently altogether unmeaning ; and therefore the knowledge of their true import became what is called a mystery ; namely a hidden or esoteric doctrine attached to the solemnity, and only familiar to the priests themselves, or those to whom they were pleased to communicate it under strict pledge of secrecy. But more of this in its proper place.

SECTION III.

CONTINUATION OF THE SAME SUBJECT.—INQUIRY INTO
THE PRISTINE FORM AND SIGNIFICATION OF THE
SIGNS.

THE names of the egyptian months, which we now proceed to analyze, have been preserved in the works of greek authors of various ages; as well as in the idioms of the native Copts, and Egyptio-arabs, among whom they continued to be used in modern times. That they are the primitive egyptian appellations is, I believe, not disputed; and indeed is placed beyond a doubt, as well by the internal evidence which they themselves afford of their connexion with the ancient language and religion of the country, as by the constancy and harmony of the tradition, by which they have been handed down through ages as such. I have given below, in the notes, references to the authors in whose works the most important varieties of these names have been preserved, as well in the greek as the coptic idiom.^a To the coptic orthography the

^a According to the greek orthography: see generally, Ptolem. de Apparent. ap. Petav. Uranol. in op. de doct. temp. vol. iii. p. 42. Antholog. græc. l. i. c. 91. Fabricii Menolog. p. 22. According to the coptic ortho-

greatest weight is in most instances to be attached, as representing the pronunciation of the old dialect of Egypt, for the most part it may reasonably be assumed, pure and unaltered. Occasional allusion has also been made to the analogy of the Copto-arabic.

These names, as the egyptian scholar will see at once, though of various characters, are for the most part derived from the mythological nomenclature; each month, as Herodotus^b has long since observed, being peculiarly sacred to a certain deity. They may be classed under three distinct heads. First, those which are called simply by the names or titles of deities; such are Thot, Athor, Epiphi, Messori. Secondly, those which are not directly synonymous with their patron divinities, but dedicated to them by the common possessive *pa*, or *pha*, prefixed to their names or titles; as Paophi, Phamenoth, Pharmouthi, Pachon, Paoni. Thirdly, those of obscure or doubtful import, perhaps of a miscellaneous, figurative nature; Choiak, Tobi, Mechir. With respect to these last, I repeat as before, that where nothing obvious occurs in the way of illustration, I shall refrain from entering at large into speculations, which might be liable to the reproach of being farfetched or visionary.

graphy; Kircher, *Ling. ægypt. restitut.* Scala magna, p. 63, et *Prodrom. Copt.* p. 140. Tuki, *Rudim. ling. copt.* p. 391. sqq. Croze, *Lexic. ægypt.* in vv. Jablonski, *Collectio vocum ægyptiarum*, in v. v. *Opusc.* vol. i. et ap. Steph. *Thes. ling. græc.* edit. Valpy, vol. i. initio. Young, *append. ad Tatham. Egypt. gramm.* p. 5. Croz. *Thesaurus epistolicus*, pt. iii. p. 133.

^b II. s. 82.

THOT,^c (*Libra*,)

According to the hieroglyphic emblem, the first month of vegetation, dating from about the autumnal equinox, when the Nile retired from the land. The name speaks for itself, being that of the deity represented with the head of an Ibis, whom the Greeks identified with their Hermes, and who, as the patron of art, science, and literature in the egyptian pantheon,^d naturally takes precedence in the civil calendar, which was fabled his own invention; his feast we also learn from Plutarch was celebrated during this month.^e

That *Libra*, of the egyptian zodiac, bore some reference to the equal balance of day and night at the equinox, there is no reason to doubt; but that besides this, there was also a mysterious connexion, between the emblem, and the god of the month to which it belonged, we have very curious proof.

Among the most remarkable symbols or attributes, by which this deity is usually attended in the figurative mythology, are the egyptian ape or cynocephalus, and the scales or balance. These attributes of Thot are chiefly observable in the funereal papyri.^f In the

^c Memphit. ΘΝΟΥΤ, theb. ΘΟΥΤ. Tuki, Rudim. ling. copt. p. 392. Kirch. Scal. mag. p. 50. These are unquestionably the ancient egyptian forms. *θεωθ.* Rosett. Inscr. line 50. ap. Kosegart. p. 64. and Inscript. ap. Letronne Recherches pour servir a l'hist. de l'Egypte, &c. Paris, 1823. p. 155: sq. Conf. Plato, edit. Serran. t. iii. p. 274. Euseb. Praep. ev. i. c. 9...ὃν Αἰγυπτῖοι μὲν ἐκάλεσαν Θεωθ, Ἀλεξανδρεῖς δὲ Θάθ. Conf. Clem. Alex. Strom. i. p. 303. c. The etymology and signification of this name has been inquired into in the Appendix No. VIII.

^d Plato, loc. sup. cit. Cic. de nat. Deor. iii. c. 22. Diod. i. §§ 15, 16, 43. Strab. p. 1156.

^e De Is. et Os. c. 68.

^f Description. de l'Ég. Antiq. vol. ii. pl. lx, lxii, lxiv, lxvii, lxxii. Denon,

principal scene of those extraordinary pictures, representing the last judgment, Thot in his capacity of secretary or chief minister, of Osiris in his character of Serapis or *judge*^g of the infernal regions, invariably appears attended by his subordinate divinities, presiding over the scales in which are weighed the souls of departed mortals, and presenting his report of their merits or demerits to his chief. On the centre of the beam sits a cynocephalus, and helps to adjust the balance; and in the upper compartment of the same figurative representation, the line of mythological emblems, which forms as it were a frieze or cornice of the porch of Amenthes where the judgment is held, is terminated at each end by a sitting figure of a cynocephalus holding a balance in his forepaws, in allusion to the awful ceremony below.^h

Horapollo, in the first and most valuable part of his work, which is now generally admitted to contain the best extant commentary on the hieroglyphic literature of Egypt, informs us,ⁱ not only that the cynocephalus, (as we learn also from other authors) was sacred to Thot, but that *a sitting cynocephalus* was the emblem of the equinox; as an attendant then on the patron deity of the ancient equinoctial month he is quite in his place. But besides, this animal, as sacred to Thot, was also a favourite personification of the deity

Atlas, pl. cxli. Hieroglyphics of Egypt. Society, pl. v. Mai, Catalogo dei papiri egiziani della Biblioteca Vaticana. Roma, 1825. Tav. i. The same in german, Ægyptischen Papyrus der Vatic. Bibl. übers. v. Ludw. Bachmann. Leipzig, 1827, to this last I here refer, not having been able to procure the italian; and from it PLATE III. No. i. (which see) is copied.

^g $\Sigma\text{EP}-\Sigma\text{AII}$. There can be little doubt but that this is the true etymology of the name Ser-ap-is, *mighty judge*; deducting the greek termination.

^h See PLATE III. No. 2.

ⁱ Hierogl. l. i c. 14. c. 16.

himself, who is frequently represented under the figure of a cynocephalus,^k as Ammon under that of a Ram, Horus of a Sparrowhawk, &c. So that here we have in fact Thot himself emblematic of the same season. The scales which he holds in his hand, and which are not only an attribute of Thot, but a symbol of the equinox to this day, require little farther comment.

We shall have occasion to observe in the sequel, how closely egyptian superstition connected the migration of souls, and the mythology of the world of spirits or Hades, with astrology, the sun's course in the heavens, and the vicissitudes of the seasons. Of the connexion between the infernal balance of Thot, and the Scales of the zodiac, we have farther incidental proof in the circumstance, that immediately in front of the deity in the papyri,¹ and beneath the tablet on which he is writing, is an infant or juvenile human figure mounted on a staff, evidently bearing some mysterious reference to the peculiar office of the god; and accordingly we find that the figure of the Balance on the zodiacs of Denderah, is invariably accompanied by a medallion containing such a juvenile form, crouching in a similar attitude between the scales. But besides the scene of the funereal papyri, to which, as most common and familiar, I have here referred more particularly, we find Thot appearing with the same attributes, on other occasions which bear a most unequivocal reference to

^k Vid. Num. Hermop. ap. Zoëg. Num. Mus. Borg. p. 124. No. 122. Champol. Panth. pl. 30 F. A very curious group, where Thot in this form is supplicated by a soul to be favorable in the ordeal of the Balance, conf. pl. 30. g.

¹ Pap. der Vat. Bibl. Tab. i.

the calendar. In plate xxxv. vol. ii. of the *Antiquities of the Description de l'Égypte*,^m he is represented standing as above before his divine master; behind him the scales surmounted by the cynocephalus, and served by the same two subordinate divinities as in the papyri. Here, however, another emblem, probably connected with the calendar, is substituted in the scale for that of the soul, and Thot holds in his hand, not, as before, the tablet and style, to cast up the account of human good and evil, and strike the balance of reward or punishment, but in his left hand he grasps a long rod or wand, gradually bending towards the upper extremity, with notches cut regularly on the exterior curve from top to bottom; of these notches, with an index which he holds in his hand, he points off a certain number. A precisely similar rod, when marked with only one notch, has been ascertained to be the symbol or hieroglyphic of *year*;ⁿ hence it is reasonable to suppose, that, when notched in its whole length, it denotes a number of years, and that the pointing off a certain number de-

^m See PLATE IV.

ⁿ Young, *Art. Egypt*, p. 70, pl. lxxvii. No. 180. *Champ. Précis*. p. 214, pl. xiii. No. 5. To this symbol I understand Horapollo to allude (*lib. i. c. 3*) where he tells us, that, to represent a year, they drew a *palm*, because that tree shot forth a branch every month. He probably means a *palm branch* or sapling, as the hieroglyphic rod is not unlike such an object, rudely or conventionally delineated; and, if so, the additional shoots must be understood as of years, not months. Dr. Young, (*loc. sup. cit.*), who first identified this symbol, observed that it resembled a plant, and the notch in its centre an annual shoot or bud. Horapollo also informs us, (*i. c. 4*), that, to denote a month, they drew a palm branch, or an inverted half-moon. This last is the sign of month in professor Kosegarten's calendar. Of the palm branch for the same sign I know of no example; which confirms me in the opinion, that Horapollo's description is, here as elsewhere, however valuable, not minutely correct, and that he has confounded the respective symbols of year and month.

notes a special number of years set apart for some peculiar purpose. This, it may be presumed, was the hieroglyphical use of the rod, the number of notches actually cut in it having no particular chronological meaning, but denoting years in general ; but the number pointed out or indicated by the bearer cannot but admit of some mysterious signification, connected with the adjustment of the calendar, civil or astronomical.

Various other monuments, where this same figurative rod occurs, with the ceremony of marking off or subdividing its notches, have been examined by M. Champollion,^o who supposes the ceremony to allude to the regulation of the national festivals or *πανηγύρεις* at stated intervals. This interpretation, there can be little doubt, is as accurate as it is ingenious, with regard to several, at least, of the monuments illustrated by that distinguished critic, which seem to belong chiefly to the greek or roman periods, and where the rods are held by various deities or other personages. But, in the one to which our observations have been directed, there is this distinctive peculiarity, that the rod is not only held by Thot, but the Cynocephalus and Scales form an important feature of the group, which is wanting on all others of a similar nature that I have had an opportunity of seeing. Whatever may be the precise signification of this mysterious ceremony, we have, at least, here Thot with his scales and cynocephalus, as the regulator of the calendar ; and the scales and cynocephalus being symbols of the equinox, and the hieroglyphic of the month of Thot being also a symbol of the autumnal season, we have confirmation strong of the opinion here advanced,

^o Précis du Syst. hiér. p. 215, sqq.

that the equinox of autumn was the place in the year originally occupied by that month, for all these coincidences could hardly be the result of chance.

In the painting of the theban tomb,^p as above observed, there is a procession, headed by a figure, bearing an ear of corn, or a sprig of some other vegetable production, in its hand, doubtless symbolic of the constellation Spica, or Virgo of our sphere. In front is the Lion. This figure is followed by three others, whose persons are marked by no distinctive attributes, probably subordinates or companions of the leader with the Spica; but immediately in their rear marches the god Thot, between the very same two lesser deities, who act as his ministers in the ceremony of adjusting the balance. May not we conjecture that we have here Leo, Virgo (Spica), Libra?

All this receives light from a passage of Julius Firmicus,^q an author who appears to have preserved many genuine remains of the old judicial astrology of the Egyptians, according to the celebrated chiefs of that school, Nechepsos and Petosiris, and who, in treating of the influences of the signs on human destiny or character, makes Libra produce: Sacerdotes, et quibus deorum secreta credantur, musicos, regumque scribas, vel quibus dictandi committant officium; medicos, geometras, mathematicos, negotiatores, templorum ministros, &c. &c.; every one of which qualities or occupations were under the special patronage of Thot.

It might, perhaps, be objected by some, that on the more ancient greek sphere there is no such sign as Libra, its place being occupied by the claws of the Scorpion, and, therefore, that the symbol itself was a

^p See PLATE II.

^q Astronomic. lib. viii. c. 25.

recent innovation on the original zodiac; and Pluche,^r probably after Hyginus,^s asserted that it was an invention of the Romans, about the age of Augustus. No great deference is, indeed, due to this authority, which I was surprised to find has also been adopted by the judicious Goguet,^t and other critics, who usually go deeper into their subject. It will, however, be worth while to point out shortly the error of this opinion, as, by so doing, we shall be enabled to advance still farther evidence, that Libra was the primitive sign of this season in the egyptian zodiac, and, by inference, that both that sign and the zodiac itself are of egyptian invention.

The oldest extant greek author, professedly treating of the signs of the zodiac, of whom we have more than an incidental fragment, is Aratus, who certainly never mentions Libra; with him this sign is always Chelæ, or the Claws. Hipparchus,^u however, who flourished upwards of a century and a half before the christian era, once calls it Libra; and with Geminus,^v who lived about eighty years afterwards, it is the familiar and ordinary term. Both these authors wrote before Augustus was born; the opinion, therefore, of Goguet falls to the ground at once. As the Romans were indebted for all their scientific institutions to their more highly civilized neighbours, whether greek

^r Hist. du Ciel, lib. i. § 3.

^s Poet. Astron. ii. 26.

^t Orig. des loix, t. iv. p. 779. Fontenelle, ap. Court de Gebelin Monde prim. t. iv. p. 598. The only additional foundation for this opinion is an obscure passage of Virgil, (georg. i. v. 32), which, however, his scholiasts have not so understood. The utmost that can be inferred from it is, that the Romans, having hitherto, like the more ancient Greeks, used the Claws, Augustus, in imitation of the alexandrian Greeks, first substituted the Balance.

^u Ad. Arat. Phænom. lib. iii. c. 2, in Petav. Uran. p. 134.

^v Elem. Astron. Uranol. sup. cit. p. 1, seqq.

or oriental, it is not very likely, in itself, that, in adopting their zodiac, in other respects entire, they should have been at pains to make an alteration in this particular point; still less is it to be conceived, that, in the days of the Ptolemies, when Alexandria was the central seat of learning and civilization, and Rome herself had hardly begun to turn her attention to the sciences, the greek mathematicians should have sought for new technical terms in the rude almanacks of Latium.

Libra occurs on all the extant egyptian zodiacs as the sign of the equinoctial month of autumn, as well as on those of the Arabs and other oriental nations, who, it may be conjectured, borrowed, either directly or indirectly, from Egypt. The present hieroglyphic of the sign, of which there is some trace in the picture of the theban tomb, is also apparently an abbreviated representation of a portion of a balance. But, what is still more decisive, Achilles Tatius,^w an author of considerable weight in matters of astronomical history, positively asserts Libra to be peculiarly and distinctively egyptian: "The sun," says he, "in his course through the zodiac, when he enters the Ram, or the Claws, which the Egyptians call the Balance, makes the days and nights equal." Tatius was himself a native of Egypt, and therefore must have had good opportunities of ascertaining the fact. The same is stated equally positively by Servius,^x in his commentary on a line of the first Georgic, where Virgil (as the latin poets seem to have done by preference) calls the sign by its greek name of Chelæ or Claws: "The Egyptians affirm that there are twelve

^w Fragmenta, apud Petav. Uran. p. 96.

^x Ad Virg. Georg. i. 32.

signs, but the Chaldees eleven, for they make Libra and Scorpio one, assigning to Libra the claws of the Scorpion." By Chaldee, be it observed, must here be understood, according to the ordinary phraseology of this and other contemporary authors, the professed astrologers of the day, who being chiefly Greeks, probably used the old greek form; for there is no reason to believe, that the pristine Chaldee zodiac bore any resemblance in this respect to that of Greece. There is indeed an astrological poem which passes under the name of Manetho,^y where it is asserted that the Egyptians also used the Claws in early times, which emblem the priests afterwards changed into the Scales. But to this work we can grant no claim to authority, being a wretched piece of trifling, full of all sorts of corruptions; and if really the production of the celebrated historian of the dynasties, can only show that less deference is due to his testimony in matters of science than of civil history.

The opinion here advanced respecting the superior antiquity of Libra, has, I find, also been preferred by the most distinguished historians of ancient astronomy.^z

From the details above given, it appears probable, that the Greeks, on first adopting the egyptian zodiac, corrupted this and the following sign, dividing Scorpio into two, and substituting its claws for the original Libra, for what reason it is not worth while

^y Manethonis Apotelesmatica, Gronov. Lugd. Bat. 1698, 4to. lib. ii. v. 136.

^z Bailly, Hist. de l'astron. anc. p. 487, sq. who, in conformity with his favourite systems however, would have it an invention of the Indians. Delambre, Hist. de l'astr. anc. t. i. p. 81. Addit. p. xi. Ideler, Unters. über die astr. Beob, &c. s. 272.

here to inquire.^a Afterwards, when Alexandria became the seat of learning, the ancient figure, being observed on the egyptian monuments by greek authors, who wrote under the auspices of the Ptolemies, was restored to its place in their sphere, which it afterwards enjoyed conjointly with their own Chelæ. The Romans preferred the pure egyptian emblem.

ΠΑΟΦΗ, (*Scorpio.*)

Written by the modern Copts ΠΑΩΠΗ, or ΠΑΟΠΗ;^b but to judge by the analogy of the greek, (*παωφί*), and of other similar compounds in the Coptic language, probably, according to the old etymology: ΠΑΞΟΥ, or ΠΑΟΥΦΗ, the month of the Agathodæmon, or sacred snake, so celebrated in the egyptian pantheon. The word ΩΦΗ or ΟΥΦΗ is apparently a variety of the egyptian ΞΟΥ, Snake, and occurs as an element of the appellations of both sovereigns and private individuals; according to the well known custom of conferring upon mortals the names or titles of deities, either simply, or combined as patronymic or

^a There is a dissertation on this point by the german hellenist Buttmann, inserted in the work of Professor Ideler, (sup. cit. s. 373.) The alteration is supposed by him to have originated in a confusion of the various primitive senses of the greek term *χηλή*, *χηλαί*, assumed in its origin from the analogy of *χέλυς* *χελώνη*, &c. to have anciently denoted not only Claws, but shell, or scale; german, Schale, Wagschale. The solution is ingenious, though resting too much upon mere conjecture to be quite admissible. See also Jollois et Devilliers. *Descript. de l'Égypte. Antiquités. Mémoires*, p. 456.

^b Tuki. Rudim. p. 391, conf. Croz. Thes. Epist. Pt. iii. p. 133.

^c Vid. Schow, Cart. Pap. Mus. Borg. Rom. 1788, p. 89, conf. Croze Lex. in v.

dedicatory compounds.^d Thus, in the fourth dynasty of Manetho, we find the second and third kings called Souphis, or son of Ouphi; as also the fifth king of the third dynasty. Plutarch^c mentions a priest of Heliopolis, in the days of Solon, called Psenophis, the sense of which is similar; and in a catalogue of egyptian proper names, in a papyrus of the Borgian museum, we have ΠΕΤΟΥΦΙ, ΠΑΟΥΦΙ;^f this last may be considered as precisely the same compound as the name of the month, and is by Champollion justly rendered ἀγαδοδαίμωνιος.^g

During this month, as we learn from Plutarch,^h was celebrated a feast called the Staff of the sun; the mysterious sense of which referred to his course midway between the equinox, and the most distant point of the lower hemisphere, at which period he was fabled to require support or assistance, to sustain him on his journey.

We can here trace no connexion between the name of the month, and the corresponding symbol of the zodiac, of so satisfactory a nature as in the case of Thot. There can however be no doubt, but that the scorpion, though little noticed in the vulgar mythology of the Egyptians, must have played a distinguished part in their scientific mysteries; as it constantly occurs on their astrological monuments, not only on those of greco-egyptian art, but in the pictures of the

^d For this custom, to which we have frequent occasion to allude, see Koseg. de prisc. Æg. lit. p. 28, sqq.

^e In Vit. Sol.

^f Schow. Cart. pap. sup. cit. pp. 6. 42. 89.

^g L'Égypte sous les Pharaons, vol. i. p. 109. This etymology, for the name of the month also, suggested itself to Count de Gebelin. Monde prim. vol. iv. p. 90.

^h De Is. et Os. c. 52.

royal tombs, though of small size and apparently in a subordinate capacity ;ⁱ on the stelæ of Bruce and Montfaucon ; as well as on various gems and scarabees.^k Before therefore any satisfactory illustration of this sign of the zodiac can be expected, we must acquire more distinct notions of the figurative attributes or properties, which the priests in their wisdom discovered in the natural history of this animal, with reference to their climate ; concerning which we have at present no historical data whatever. Several conjectures indeed offer themselves, respecting the probability that some mysterious combination of the Agathodæmon and Scorpion, may have been the primitive symbol of this month in the egyptian zodiac. To these however I am unwilling to attach much weight, not having yet been able to corroborate them by a reference to either authorities or monuments illustrative of the pure egyptian astrological fable.

It may yet be remarked, that a very important constellation of the greek sphere, called Ophiuchus, or the Serpent-bearer, occupies a portion of the division of the zodiac assigned to the Scorpion ; which reptile he was feigned by the greek astrologers to trample under foot :

"Οφίος . . . ὅς ῥά τε μέσσον
Δινεύει Ὀφιῶχον· ὁ δ' ἔμμενός ἐν ἑπαρηρώς,
Ποσσὶν ἐπιβλίβει μέγα θηρίον ἀμφοτέρωσι
Σκορπίον.^l

ⁱ See PLATE II.

^k Klaproth, Collection d'antiquités égypt. Par. fol. 1829, pl. xi. xxviii. &c.

^l Phænom. v. 83. Fest. Avien. v. 238. See the figure of the ancient zodiac engraved by Grotius in his edition of the Aratæa. ad German. Phænom. p. 8.

The Serpentarius, as the Latins call him, was by some commentators identified with Triptolemus,^m by others with Esculapius;ⁿ both which heroes, and their attendant snakes, are mere counterparts of the egyptian Agathodæmon, who is sometimes represented on the monuments as a serpent mounted on the lower parts of a man;^o which curious figure, I feel tempted to suspect, is the original of the Ophiuchus of the greek sphere, where so many images are evidently borrowed from Egypt. This might justify the suspicion at least, that both the reptiles above mentioned may have entered into the composition of this symbol among the Egyptians. It will appear beyond a doubt in the sequel, that the emblems, in the zodiac of that people, were not so strictly limited to one figure as in the corresponding signs of that of the Greeks. The example which we shall adduce of this below, in the case of the sign Leo, where we find the Lion trampling upon the evil genius of the season, might, by its analogy, lead to some inference respecting the probable form of the original sign Scorpio.^p

^m Hygin. Poet. Astron. ii. 14. Fest. Avienus, Phænom. v. 205.

ⁿ Eratosth. Catast. 6. Scholiast. ad Germanic. v. 72. Serv. ad Æn. X. v. 260. Ovid. Fast. vi. v. 735.

^o Champol. Panth. pl. 3. bis.

^p That the scorpion was figurative among the Egyptians of the typhonic influences, appears probable, as well from the very nature of the animal, as from the circumstance, that on the zodiac he is sometimes accompanied by an hippopotamus, which monster, as is well known, was the familiar emblem of Typhon, and is himself here represented with the tail of a scorpion. See the sign Scorpio of the quadrangular zodiac of Denderah, and conf. Horap. Hierogl. l. ii. c. 35. Ælian, (Hist. Anim. l. x. c. 23.) describes a ceremony practised at funerals by the people of Coptos, where it was customary for enthusiasts to *trample upon Scorpions*, as symbolic of the most noxious and dangerous of objects, without receiving any hurt. The Agathodæmon, as figurative of the sun, trampling upon a scorpion as Typhon, would be an apt enough

ATHOR,^q (*Sagittarius*,)

The sacred month of the goddess of the same name, written, by the Greeks, Athor, Athyr, and Athyri; by the Copts invariably Athor or Hathor;^r a deity whose influence and attributes were closely connected with the lower hemisphere, whether, in a mythological sense, as referred to Hades, or the shades of after life, that is, the lower portion of the celestial region, where the souls of departed mortals were supposed to dwell;^s or, in a merely astronomical or physical sense, as denoting the lowest position of the sun or planets in the zodiac. The Greeks, for reasons which it is unnecessary to explain at length, called her, in common with other analogous divinities of the neighbouring oriental nations, Aphrodite or Venus. It is well known that the Aphrodite of the greco-oriental mythology was both a celestial and infernal goddess, both Urania and Hecate; and such also (in as far as the peculiar character of the egyptian pantheon will permit the analogy) appears to have been Athor, and in this respect to have corresponded both to the Astarte of the Phenicians and the Alilat of the Arabs. Hence, among the Greeks themselves, we find an Ἀφροδίτη

type of the struggle between the powers of light and of darkness at this season, alluded to in the festival mentioned above as celebrated during this month.

^q Vid. Orion. ap. Etym. M. v. *Αθύγ*. Hesych. ead. v.

^r Memph. ΑΘΩΡ. Theb. ΖΑΘΩΡ. Tuki, Rudim. p. 391, sq.

^s In the egyptian mythology, it appears that the souls were not feigned to descend under ground into a Tartarus, as among the Greeks, but to dwell in the lower hemisphere of the celestial regions. Hence it is that Athyr, and other deities of the infernal world, even while invested with funereal attributes, are yet frequently, in inscriptions, styled celestial divinities.

μελαινίς^t ἐπιτυμβιδία^u among the Latins, Libitina,^v or Venus sepulchralis. There can, however, be no doubt but that Athor was, like other lesser goddesses, merely a personification of certain attributes of Isis, and may be considered as that essence of the female godhead in her capacity of Hecate or Proserpine.^w Plutarch assures us, that the name Athor or Athyri was, in fact, a title or epithet of Isis;^x and we shall find that the feast celebrated during this month in honour of Athor was also called the Isia or feast of Isis. Plutarch^y farther informs us, that Aphrodite was the same as Nephthe, and that Nephthe represented Τελευτήν, the *End*, or τὸ ὑπὸ γῆν καὶ ἀφανές, that is, the lower hemisphere, either physically or mythologically; and Diodorus^z also calls this Nephthe, Aphrodite, or Venus, which shows the correspondence of the three in person and attribute to each other, and to the character of Hecate; hence the egyptian Ἀφροδίτη is called σκοτία by Hesychius,^a the same, no doubt, as the Σκοτία Ἐκάτη of Diodorus,^b and the Νύξ γένεσις πάντων ἦν καὶ Κύπριον καλέσωμεν of the orphic cosmogony.^c Accordingly, Athor, with her hieroglyphic titles appended, appears chiefly on egyptian monuments connected with the mythology of the lower regions, Amenti, or Hades. In Belzoni's tomb,^d for example, the figure receiving the hero in the shades, represented with a

^t Pausan. Cor. c. 2, § 4. Arcad. c. 6, § 2. Bœot. c. 27, § 4. Att. c. 19, § 2. Athenæus, Deipn. Edit. Casaub. xiii. p. 588.

^u Plutarch. Quæst. rom. 23.

^v Plutarch. loc. cit. Dion. Halic. Ant. rom. l. iv. c. 15. Ed. Huds. p. 212. Horat. l. iii. od. 30, v. 6. Sueton. vit. Neron. c. 39.

^w Plut. de Is. et Os. c. 27.

^x Lib. cit. c. 56.

^y Lib. cit. cc. 12, 44.

^z Lib. i. § 13.

^a V. Σκοτία.

^b I. § 96.

^c Orpheus, Hymn. ii. See Append. No. XII.

^d Pl. xviii.

black head-dress, crowned with black horns, between which is the disc of the moon, is Athor.

It will appear, then, with what propriety this season, during which the sun descended to the greatest distance from the zenith, and dwelt the greater portion of the twenty-four hours beneath the horizon, would be dedicated to the deity whose name it bears. A striking illustration of this we have in the religious rites celebrated during this month. Athor, as we learn from the testimony of the ancients, confirmed by that of the monuments, was frequently represented under the form of a heifer;^e and we find accordingly, that, in the feast called by Plutarch^f the Death or Loss of Osiris, which commenced on the seventeenth of this month, a gilded heifer, (which may either denote a gilded image, or a living animal of a gold colour, or with golden ornaments,) covered with black cloth, was led in procession, figurative of the fall of the year, the descent of the sun in the zodiac, and the low ebb of the water of the Nile. Plutarch asserts that this heifer was the image of Isis;^g and we have observed already, and shall amply prove in the sequel, that Athor was here merely a personification of Isis.

^e Hesych. v. Ἀθύρ, conf. Strab. p. 1139. Ælian. de An. x. c. 27. Hence, probably, the reason why the bones of the sacred cattle were buried in Atarbechis, or the city of Athor. Herodot. ii. § 41, conf. Jablonsk. Panth. i. p. 4, 5, and Collect. voc. ægypt. in voce Ἀταρβόχης.

^f De Is. et Os. c. 39, conf. cc. 13, 42.

^g In the passage referred to, Wyttenbach and others, after trust-worthy MSS., instead of the vulgarly edited βούν γὰρ Ὀσίριδος εἰκόνα καὶ γῆν νομίζουσιν, have restored βούν γὰρ Ἴσιδος εἰκόνα, κ. τ. λ. which is unquestionably the true reading; for Osiris could not be led in search of himself, still less as chief mourner at his own funeral. That the βούς is here female, appears also evident from the passage of c. 52, where she is again introduced.

Messrs. Salt^h and Champollionⁱ have identified the hieroglyphic name attached to the figure of the heifer, which appears commonly at the end of the funereal papyri, and in *the more secret adyta of the tombs*,^k as that of Athor ; and we have before had occasion to point out, as indeed every egyptian antiquary is aware, how close a mysterious connexion there was between the lower regions, in a spiritual sense, as the abode of departed souls, and the lower portion of the sun's course in the heavens. Hence, in the papyri, the souls are made to travel to Amenti in the descending bark of the sun and moon,^l which intimates that their descent into the lower world took place under the guidance of those luminaries as they sunk beneath the horizon. Again, Eusebius informs us, that the Hippopotamus was one of the emblems of the south pole, or lower hemisphere, where the sun became invisible ; and, accordingly, we find, that a chief attribute of Osiris, as lord of Amenti or Hades, in the funereal rituals, is an hippopotamus, who sits in front of the deity, while Athor stands behind him.^m The abbreviated symbol of this goddess, according to Champollion,ⁿ was a woman's head with the ears of a cow. This also forms the capitals of the columns of her temple at Denderah, which contains the celebrated remains of egyptio-greek astrology. And, besides the

^h Essay on phonet. hierog. p. 42, pl. iii. F.

ⁱ Panth. pl. 17, conf. Précis du syst. hiér. tab. gen. No. 102.

^k This is the expression used by Salt, whose statement is corroborated by the circumstance, that, in the funereal rituals of the Vatican Papyri, described by Mai, after Champollion, we find that Athor, or the sacred heifer, is almost invariably the last of the deities of Hades to whom the soul is presented, or to whom it addresses its supplications.

^l Champol. in Papyr. der Vat. Bibl. s. 5.

^m See the funereal papyri, passim ; and conf. Belzoni, pl. xix.

ⁿ Panth. pl. 18 a. 17 a.

heifer, with the name Athor annexed, we find another^o of a bright yellow or gold colour, appearing with the title of *mother of the sun*, also in the sepulchral papyri, and in the same position as Athor herself, and which is, no doubt, merely another personification of the same deity, as she wears the symbol of Athor, above described, round her neck. The red or yellow disc is also among her principal ornaments, which she bears sometimes between her horns, sometimes it is deposited on the prow of the mysterious bark in which she travels. From the correspondence of the colour, it is probable that this is the very golden heifer described by Plutarch as led in procession in the mournful ceremonies of the feast of Athor.

Plutarch, like others of the later greek authors who treat of egyptian superstition, ignorantly or arbitrarily explains the mysterious rites of this festival, as of several others, by a confusion between ancient tradition, and the positions of the egyptian months in the seasons at the time he wrote; according to the double reckoning of the alexandrian or julian year recently introduced into Egypt, and the ancient moveable year, which continued for long after to be in use among the aboriginal inhabitants.^p In quoting, therefore,

^o Champol. Panth. pl. 23 d. 23 e. conf. Papyr. der Vat. Bib. in fine. Rahmen iii. A. 9.—viii. 6.—xv. B. 4.

^p After the final settlement of Egypt by Augustus as a province of the roman empire, the use of the julian form of computation was established in Alexandria, the first day of the new calendar being fixed to the 29th of August, the Thot of the year in which the innovation took place; from which period, six, instead of five, supplementary days were added at the end of every fourth year; so that the form of the alexandrian year was as follows:

Thot	29 August,
Paophi	28 September,
Athyr	28 October,
Choiak	27 November,

from him, as well as other authors of the same stamp, we must be cautious, while we extract from them valuable facts, not to allow ourselves to be misled by too great a deference to their fanciful commentaries. This leads us to some important observations on the history and mysterious signification of this festival of the death of Osiris, the result of which will, I trust, afford strong evidence that the month Athor, to which it was appointed, originally occupied the place we have assigned it at the establishment of the primitive egyptian calendar.

Achilles Tatius,^a in treating of the zodiac, observes, that “the Egyptians formerly, perceiving the descent of the sun from Cancer upon Capricorn, and the nights prolonged, were wont to mourn, as if fearing

Tybi	27 December,
Mechir	26 January,
Phamenoth	25 February,
Pharmouthi	27 March,
Pachon	26 April,
Paoni	26 May,
Epiphi	25 June,
Mesori	25 July,
Epagomenæ	24 August.

The ancient moveable year, however, maintained its ground among the aboriginal natives in vulgar use, and as the regulator of the returns of their religious solemnities, up to a very late period. (Dodw. App. ad diss. cyp. § iv. Theon. ap. eund. in fin.) So that we have thus two calendars of precisely similar form in use at the same time, in the same country, differing only in the circumstance, that the year of the one, by means of the quadrennial intercalation, was fixed, while that of the other retrograded a day in the seasons every four revolutions. About the second century after the christian era, the relative points of the two in the tropical year differed considerably, which has been the source of a considerable deal of error in the writings of Plutarch, and other authors of that period, who confound the dates of the two in treating of egyptian matters. (Conf. Scaliger, de Emend. temp. p. 222. Ideler Unters. üb. die astr. Beob. s. 127. Techn. Chronol. B^d i. s. 150.)

^a Isagog. c. 23, ap. Petav. Uran. p. 85.

lest he should leave them altogether, and this is the time of what they call the Isia ; again, when he began to reascend, they put on gay clothes, and decked themselves with garlands." That these Isia are precisely the same with the festival called by Plutarch the death of Osiris, which began on the seventeenth of Athor, is, I believe, admitted by both chronologers and mythologists, and is proved as well by the great similarity in the description of the two solemnities, as by other collateral evidence. For example ; Geminus,[†] in illustration of the peculiarities of the egyptian calendar, mentions, that it was a vulgar error among the Greeks to suppose that *the Isia fell on the winter solstice*, as fixed by Eudoxus ; " for, indeed, an hundred and twenty years ago," says he, " that was the case ; but as the egyptian feasts, in consequence of the deficiency of their calendar, go back a day in the seasons every four years, there has arisen in one hundred and twenty years a difference of a full month ; so that those who suppose them still to be celebrated at the winter solstice show very gross ignorance." Now we find by calculation, that, in the year 195 B. C., the seventeenth of Athor, the first day of the solemnity described by Plutarch, coincided with the twenty-sixth of December old style, which was also the winter solstice as fixed by Eudoxus ; deduct from these 120, and we have 75 B. C., which ought, upon our hypothesis that the two feasts are the same, to be the epoch about which Geminus wrote : accordingly we find that this is in fact the æra assigned him by the best chronologers, partly on the authority of the above coincidence, partly from its being amply justi-

[†] Elem. Astron. c. vi. ap. Petay. op. cit. p. 19.

fied by the internal evidence of his own writings.^s And here it will be remarked, that this same vulgar error of the Greeks, noticed by Geminus, leads to an inference of some importance to our subject; for as this feast, as both he and Eratosthenes^t rightly observe, wandered through the year, falling successively on spring, summer, autumn and winter, it is not likely that their countrymen of different ages should thus so curiously agree in connecting the mysterious signification of its rites with the sun's motion at the winter tropic, unless the period of its celebration, to which those rites bore reference, at its original institution, really had coincided with that season.

A comparison of the respective descriptions of Achilles Tattius and Plutarch, will tend still farther to prove the identity between the Isia and the Death or Loss of Osiris, as well as to throw light on the original signification of the feast. Tattius, as we have seen, divides it into two parts; the first was grief for the rapid decline of the luminary, some time before the solstice; the second, joy for his return, after he had well passed the tropic. Accordingly, from Plutarch^u we learn, that the first or mournful ceremony lasted four days, from the seventeenth to the twentieth inclusive, many days before the actual solstice, according to the ancient position of this month; the joyful ceremony was not for many days afterwards, probably well on in the next month;^v when, according to the same author, "going forth towards the sea, the priests and ministers brought out the sa-

^s Petav. de doct. temp. lib. ii. c. 7. vol. i. p. 53, sqq. conf. vol. iii. not. ad loc. Gemin. sup. cit. See Appendix, No. XIII.

^t Ap. Gemin. loc. sup. cit.

^u De Is. et Os. c. 39.

^v See Append. No. XIV.

cred chest, containing a golden casket, into which pouring fresh water, all present raised a cry that Osiris was found." This arrangement, it will be observed, is not without its meaning, but highly appropriate, and consistent with the vulgar opinion respecting the motion of the sun, which remains to all observation stationary, during many days before and after that of the actual tropic. In the time of Gemini,^w who is high authority in these matters, the popular notion of the day extended this period to about twenty days before, and as many after the solstice. Nor does the opinion, that the feasts of the ancients were distributed with reference to the seasons upon this principle, rest on mere conjecture; we have on this subject a curious passage of the emperor Julian,^x who, if any man, was well informed in the history and antiquities of pagan superstition, whether egyptian, greek, or roman. It is a description of certain festivals of the roman calendar, corresponding in a very striking manner to the egyptian Isia. "Immediately after the completion of the month of Saturn (December), we celebrate magnificent games to the sun, called the feast of the Invincible Sun, in which it is not permitted to introduce any of those unseemly though necessary rites, which belong to the previous month; but the Saturnalia being at an end, the feast of the Sun comes next in succession; nor was it the intention of the ancients, that this solemnity should be fixed to the very day on which the god passes the tropic, but to that on which his return from south to north first becomes perceptible to all; for they knew not yet the nice mode of observation,

^w Op. sup. cit. c. v. p. 14, 15.

^x Orat. iv. p. 156 Ed. Spannh.

afterwards discovered by the Chaldees and Egyptians, and perfected by Hipparchus and Ptolemy.^y

The account given by Apuleius^z of the Isia as celebrated at Corinth, still more distinctly shows their identity with the Feast of Athor; as he mentions the same two acts of the mythological drama, described by Plutarch as usual in that feast; first, the carrying in procession a heifer the image of the goddess; and secondly, the ceremony of going down to the sea with the sacred bark, followed by rejoicings.

Plutarch^a in another place states, that at the solstice itself they led the heifer seven times round the temple; which was called the Search of Osiris. It may be a question, whether this inaccurate author means to assert that this was a fixed feast; or whether, as is more probable, according to the vulgar error stigmatized by Geminus, he has confounded in this, as in other instances, the mysterious origin of the ceremony with the period of its actual celebration; but in either case, its connexion with the other rites of Athor is very obvious. It may have been originally a supplementary solemnity at the solstice itself, the search naturally intervening between the losing and finding of the god. The Arabs to this day call the seven days of the winter solstice Aiam Alagiuz, the days of the old woman, or the lame and impotent days;^b which

^y This description corresponds sufficiently with the positions of the festivals of the Saturnalia and of Phæbus, in the extant roman calendars; (Ap. Græv. Thes. Antiq. roman. tom. viii. init. Court de Gebel. Mond. Prim. tom. iv. p. 40.) the one being fixed some days before, the other as many after the solstice.

^z Metam. l. ix. edit. Paris, 12°. 1796, tom. iii. p. 160. 169.

^a De Is. et Os. c. 52.

^b Herbelot. Bibl. orient. v. Agiuz. conf. Golii Lexic. arab. vv. عجوز عجوز. Vid. Append. No. XV.

figurative expression is evidently derived from the old egyptian fable, that the Sun at this period of the year was feeble and impotent, and on his reapproach to the zenith was gradually renovated into childhood and youth.

There can be no doubt but that the commemoration of the birth or finding of Harpocrates at the winter solstice, so celebrated by latin authors, was merely another name under which the Isia were known among the Romans, when introduced into their familiar mythology; both festivals comprising the like alternate mournful and joyful ceremonies, typical of the declining, stationary, and ascending condition of the solar orb. This Harpocrates is described as a son of Isis, and amid the general confusion of persons which forms the distinctive peculiarity of the egyptian pantheon,^c seems, like Osiris and his own brother Horus, under some of their attributes, to have been merely a personification of the sun. The best method of illustrating this, will be to quote a few passages of those authors where his rites are described. "Isis," says Plutarch,^d "brought forth Harpocrates about the winter solstice, unformed and tender." Now Macrobius says, that the various positions of the sun were typified among the Egyptians, by the childhood, youth, manhood, and old age of the human body, and that at the winter solstice he was likened to an infant, "in which form he is brought by the priests out of the sanctuary on a certain day;" "Hæc ætatum diversitates ad solem referuntur, ut parvulus videatur hyemali solstitio, qualem Ægyptii

^c See Append. No. XVI.

^d De Is. et Os. c. 65.

proferunt ex adyto certo die, quod tunc brevissimo die veluti parvus et infans videatur.”^e Macrobius, be it remarked, does not say that this ceremony took place at the winter solstice, but that it bore a mysterious allusion to that season, being attached to a certain day, that is of the egyptian year, no doubt the very same on which the finding of Osiris took place; both being in fact the same solemnity. Accordingly, both seem to be ridiculed conjointly by Minutius Felix,^f in the following powerful language: “Isis perditum filium, cum Cynocephalo et calvis sacerdotibus, luget, plangit, inquit; mox, invento parvulo, gaudet Isis, exultant sacerdotes, nec desinunt omnibus annis, vel perdere quod inveniunt, vel invenire quod perdunt. Isis, with her Cynocephalus and bald priests, wailing and lamenting, seeks her lost son; presently the infant is found, Isis rejoices, the priests exult; nor do they fail every year either to lose what they find, or to find what they lose.” The same is stated with little variety by Lactantius:^g “The rites of the egyptian Isis consist in the losing and finding of her infant son; first the priests beat their breasts and lament, as she is feigned to have done when she lost him; then the child is brought forth, as if found, and their mourning is turned into joy; for they are always either finding or losing.”

The identity of this feast and of the rites of Athor appears to be farther confirmed by the evidence of a greco-egyptian tablet, published by Kircher^h and Montfaucon,ⁱ sculptured in relief on both sides, and repre-

^e Saturnal. i. c. 18.

^f In Octavio. Edit. Herald, 1613. p. 29.

^g Instit. l. i. c. 21.

^h Œdip. Æg. t. iv. p. 426.

ⁱ Antiq. expl. t. ii. pt. ii. pl. cxvi. p. 286. There is another group

senting two distinct acts of the mysteries of Isis. On one compartment we have a figure of a cow or heifer, borne in procession on a staff; on the other we have a similar procession, where, however, a new born infant is substituted for the heifer. This alludes, without doubt, to the substitution of the joyful for the mournful ceremonies, as in the foregoing descriptions; and throws light upon the mysterious title conferred on the heifer representing Athor, noticed in the first part of this article, namely *Mes Re*, Mother of the sun; as, in her present capacity, she was in fact Isis mother of Harpocrates, the symbol of the sun at this season, distinct, as shall be shown, from Isis mother of Horus.^k

I have formerly had occasion to observe generally, that it is probable some of the esoteric doctrines, which the old Egyptians affected to attach to these periodical solemnities, may have borne reference to their mystical import, as connected in their origin with certain seasons, which remark appears amply confirmed by the foregoing details respecting the *Isia*. On the decline of the national character and institutions, after the permanent subjection of the country to the Greeks and Romans, these mysterious significations, such as they were, gradually became trite and public, as is evident from all that has been

somewhat similar, ap. *Spon. Rei antiq. select. quæst. in Poleni Suppl. ad Græv. Thes. t. iv. p. 1260.* and *Mouff. sup. cit. pl. cxv.*

^k These solstitial solemnities seem to have been common, as might be expected from their very nature, to many nations. (*Vid. Court de Gebelin, Hist. du Calendr. Monde prim. t. iv. p. 285.*) Besides the Saturnalia of the Romans above noticed, Hyde describes a feast among the ancient Persians of a like nature; and to a similar association of ideas he, perhaps reasonably enough, would refer some of the old rites of Twelfth night in England. (*Relig. vet. Pers. 2d edit. p. 253, 256.*)

said above. But in the days of Herodotus¹ the case was different. That author describes this festival somewhat in the same terms as the others, but does not venture upon any explanation of its meaning; observing, that he was not at liberty to disclose the real motive of the lamentations, with which it was accompanied. Herodotus may have visited Egypt about 450 B. C., at which time the seventeenth of Athor fell on the twenty-seventh of February old style, when it is clear the mournful ceremonies of the Isia, could only have had a mysterious connexion with the circumstances of their institution.

The foregoing illustrations sufficiently confirm the remark already made, that Athor, like several other egyptian deities, was, in reality, merely one of the personifications of Isis, the essence of the female god-head, whom she represented in that capacity of infernal deity which entered into her attributes, as well as into those of her husband Osiris. Accordingly, Plutarch informs us^m that Isis was sometimes called Mout, sometimes Athyri. The first of these titles or epithets shall be examined in the sequel; as for Athyri, ("Αθυρι,) it is evidently one of the synonymes or varieties of Athor, and denoted, according to the same author, literally, *the mundane habitation of Horus.*"

¹ ii. 61.

^m De Is. et Os. c. 56.

ⁿ Οἶκον Ὠρου κόσμιον, rendered mundanam Hori domum by almost all the commentators, Croze, (Thes. Epist. pt. iii. p. 150) Jablonsky, (Panth. l. iii. c. 5, § 2, fin.) Squire, (in loc.) Wyttenbach, (in loc.) Champollion. (Panth. pl. 18, a.) This sense I have therefore been willing to adopt, as being certainly most in unison with the general tenor of the subject. Yet it must be admitted that the adjective κόσμιος hardly, if ever, so far as I know, occurs in any other classical greek author but as the derivative of κόσμος in its signification of ordo, ornatus; κοσμητικός being the adjective of κόσμος, mundus. Old Amyot gives, la belle maison de Horus. Squire endeavours to show that the name of Osiris would here be more appro-

That he was right in this interpretation, has been abundantly proved by recent discoveries, the figurative emblem of this goddess having been observed by Messrs. Champollion^o and Salt^p to be a square, the hieroglyphic of *House*, in which sits a sparrow-hawk, the common symbol of Horus. This curious emblem occurs, among other instances, in the plates of the tomb of the theban king, published by Belzoni;^q where the female figure who stands behind the throne of the egyptian Pluto is Athor, with her name and titles affixed. In Champollion's Pantheon^r we have a figure of the goddess wearing as a crown this hieroglyphical house, decked with a fringe of lotus flowers, the emblem of the *lower region*, of which I conceive Athor as *oĩzos* "Ωρον to be typical. The symbol suggests at once the etymology of the word, the principal elements of which are evidently the coptic HI or AI, House, and the name of the god its inhabitant.^s It

is more appropriate than that of Horus, and has even gone the length of substituting it in his english version. It would, however, require many more and stronger arguments than any adduced by him to justify so strange a liberty, even if the emendation were not nullified by the clear testimony of the hieroglyphic monuments.

^o Précis du syst. hiér. tab. gen. No. 101.

^p Essay on phonet. Hierog. p. 42, pl. iii. No. 47.

^q Plates xviii. xix.

^r Pl. 17, a.

^s That this was the true sense of the name, occurred to Lacroze (Thes. Epist. pt. iii. p. 159,) who supposes it to be compounded of HI, house, ΘO, the world, and the name of the god. This would give HI Θ' ΩP, which is not inadmissible, and would render very closely, and to the letter, the mysterious signification of the word, according to the interpretation of the passage of Plutarch adopted by that critic. I should, however, prefer a more simple form, HIΘ-ΩP, the House of Horus, the article being postfixed to the governing substantive. The word HI, I am aware, is masculine in modern coptic; but in the hieroglyphic texts it is usually accompanied by the feminine article, or, at least, by the semicircle denoting the feminine gender, (Champol. Précis. tab. gen. No. 278, 279, 280,) which justifies the conjecture, that, in the ancient sacerdotal dialect, the noun itself was feminine. Besides, it is evident, that, in the pre-

is not difficult to guess the allusion contained in this mysterious appellation ; for the Sun, who enters into the sacred character and attributes of several egyptian deities, and more especially of Horus, the sparrow-hawk god, by the united testimony of antiquity, descending, during this month, on that point of the zodiac where he appeared, when visible, lowest in the heaven, and remained the greater number of hours beneath the horizon, might well be said to take up his abode with that deity of the lower hemisphere or region (τὸ ὑπὸ γῆν καὶ ἀφανές) to whom the season was especially dedicated.

From all this it may be collected, that Isis, as mother of Harpocrates, and Athor, as the house of Horus, at this season, were merely symbolic representatives of the same deity, in an almost precisely similar capacity. The name Harpocrates means literally, *Horus lame in the foot*, allusive to the embarrassed motion of the sun at the solstice ; for these two juvenile deities, Horus and Harpocrates, were but two different personifications of the same emblematic original, the one born of Isis at the winter solstice, called Harpocrates, or Horus lame, the other produced at a

sent case, even a masculine noun, when adopted as the proper name of a female goddess, might become feminine in composition ; the *female House of Horus*.

This form of the genitive case in simple regimen, as in the idiom of the semitic languages, is very common, and, indeed, prevalent in old egyptian, as appears from the traditional remains of that tongue in its pure state transmitted by the Greeks, and the coptic proper names, ΣΙ-ΗΣΙ, ΧΕΜΝΟΥΤΕ, &c., as well as the interpreted hieroglyphic texts. In modern coptic, it is, I believe, rare or obsolete, the genitive case being formed by a servile prefix or preposition. The postfixing of the article, so common in the ancient, is also unknown or unusual in the modern dialect. (cf. Champ. Précis. p. 127.)

The etymology above proposed has, I find, occurred, in part at least, to Alberti. (Not. ad Hesych. v. Ἀέυε)

different season from the same female deity, called Horus simply, or Horus sound or perfect, as shall be shown in its proper place.

With respect to any connexion between this month and the sign Sagittarius;—the Greeks, there is no doubt, identified Horus with their Apollo, whose emblem is a bow and arrow; and we have authority to believe that such an attribute also belonged to the Egyptian deity, according to the primitive mythology. It may be observed, that the figure of the Sagittarius, on the circular planisphere of Denderah, has a janus or double-headed bust; one of the faces is that of a sparrow-hawk; the animal's body is that of the cow species, with cloven feet; the head-dress is that peculiar to Osiris in his character of Pluto; all which seems to hint at some connexion between the season and the deities into whose influences thereon we have just been inquiring. On the quadrangular zodiac, the emblems, though somewhat varied, are analogous. In the janus, the head of a lion is indeed substituted for that of the sparrow-hawk,^t but the bird itself is represented entire, sitting on the back of the cloven-footed animal. There is, however, another mysterious representation in the same compartment, which constitutes a principal portion of the emblem of the sign;^u a human figure with the head of a sparrow-hawk, evidently Horus, transfixes with a dart or arrow a hideous nondescript, probably one of the personifications of Typhon, or the evil genius, whose tail or train is

^t This substitution may receive light from a comparison of the sign Leo, as will be seen presently; the lion, or lion's head, being but another type of the sun combating the typhonic influences. He is also supported by the sparrow-hawk.

^u See PLATE III. No. 3.

held by another monster, usually supposed, and, I conceive, with justice, to be the hippopotamus, which, we learn from the ancients, was the ordinary emblem of Typhon or of the south pole. In the picture of the theban tomb^v the sign Sagittarius seems to be represented by the same symbolic adventure. The figure of Horus appears there also combating sometimes a crocodile, one of the common emblems of the lower hemisphere,^w sometimes a nondescript monster, not unlike that portrayed as engaged with the same deity in the zodiac of Denderah. The classical commentators of the zodiac inform us, that the real meaning of the symbol Sagittarius was doubtful; but, according to Eratosthenes^x and others, the arrows he bore were the same with which Apollo had destroyed the Cyclops, in revenge of the death of Esculapius. It is obvious how naturally the Greeks would connect or confound this fable, with the egyptian tradition of the war of Typhon against Osiris, and his defeat and death by the hand of Horus. And the analogy between this mysterious combat, and the struggle of the deities of light against the evil influences of the lower hemisphere in the tropic, during the month of Athor, is very palpable. All this may be elucidated by the following passage of Eusebius:^y—“The light of the moon is consecrated in the city of Apollinopolis. Its symbol is a man with the head of a sparrow-hawk, attacking with a dart^z Typhon, in the form of a hippopotamus.^a

^v See PLATE II.

^w Horapol. i. c. 69, 70.

^x Ap. Hygin. Poet. Astr. ii. 15, conf. Scholiast. ad Germanic. v. 305.

^y Præp. ev. p. 116. Ed. Par. 1628.

^z Σιέήνη, which denotes precisely the same sort of instrument as that with which the figure of the god combats on the zodiac, namely, a light feathered dart, or arrow used as a javelin. Vid. commentat. ad Hesych.

vv. Ζηέήνη, Ζιέύνη, Σιέύνη.

^a So also Damasc. apud Phot. cod. ccxlii. Ed. Schott. 1611, p. 1043.

The image is light in its colour, as denoting the borrowed light of the moon. The head of the sparrow-hawk shows that its light is derived from the sun, for the sparrow-hawk is sacred to the sun, as the symbol of light and spirit ; but the hippopotamus denotes the lower hemisphere. The god who is worshipped in this city is Horus." The moon combined with Horus, whilst he combats with an arrow the hippopotamus, or Typhon of the lower hemisphere, can denote nothing else but the united forces of the divinity of light, combating the typhonic influences which oppose his progress in the winter tropic, during the month of Athor, with whom he then takes up his habitation. This mystical junction of the two luminaries at this season, and in this position, in the physical mythology, may be connected with the figure already mentioned of the spiritual mythology, that the souls descended into Amenti in the bark of the Sun and Moon. We certainly have here a striking enough analogy between the symbols of the deities of this month, and those of the corresponding division of the zodiac.

CHOIAK, (*Capricornus*.)

The name of this month is very obscure. The only word in the egyptian mythological vocabulary to which it bears any resemblance, is the name of the god Sevek, or Souak, of which we may perhaps be permitted to conjecture Choiak to be a variety or corruption ; the guttural being substituted for the sibilant, as these two sounds are very commonly confounded in coptic : thus we find the month Pachon written also Pashon ; Mechir, Meshir ; besides many

other examples.^b This deity is personified under the form of a crocodile,^c the name of the animal being the same as that of the god, according to Strabo^d and Damascius.^e

We have already remarked, that among the zodiacal symbols of the royal tomb, is a crocodile riding on the back of another animal, apparently an hippopotamus, the hieroglyphic of the lower hemisphere. A similar group is not uncommon on scarabee gems; on several published in Count Pahlen's collection,^f the crocodile is represented mounting on a goat; which infers a mystical union between Mendes or Pan and Sewek. This might be merely a variety of the symbol of the tomb, and approaches as nearly as can well be imagined to Capricorn of the greek zodiac, a nondescript, half goat half fish. Horapollon^g mentions a crocodile, or the tail of a crocodile, which may be the hinder part of Capricorn in its combined state, among the emblems of the lower hemisphere or south pole. The position of this month in the seasons would render the figure equally appropriate as applied to it. These coincidences justify at least the conjecture, that the crocodile of the tomb may be the prototype of the greek Capricorn.^h

^b See Klaproth, Lettr. I. a M. de Giulianoff, p. 27.

⏏ A⏏ pour XA⏏; flamme.

⏏ OBT . . . XOBT; changer, &c. &c.

^c Champol. Panth. pl. 22.

^d P. 1150.

^e Ap. Phot. cod. ccxlii. p. 1043.

^f Klaproth, Coll. d'Antiq. égypt, pl. xxviii. No. 1521. 1524, conf. pl. xx. No. 1089. 1090, pl. xxvii. No. 1449.

^g Hierog. i. c. 69. 70.

^h The conjecture that this is the month of Sewek, or the crocodile god, may receive some corroboration from the circumstance, that the Latins identified that deity with their own Saturn; (vid. Champ. Panth. pl. 22.) for what possible reason (since he certainly was not the father of Am-

TOBI,ⁱ (*Aquarius*).

The first month of drought, or of harvest ; for that these significations, one or both, belong to the hieroglyphic of this, the Second season, there can be little doubt.

According to Plutarch,^k this was the month in which took place the *return of Isis* from Phenicia. Without paying too implicit a deference to his account of the journey and adventures of the goddess, which

mon or Jove in the egyptian Pantheon) it were difficult to understand, unless we derive it from the correspondence of the two in character and attribute, as referred to the physical mythology. Among the Latins, the solstitial season was dedicated to Saturn ; who, after his expulsion from Olympus, became one of the principal divinities of the lower regions :

"Ἴν' Ἰαπετός τε Κρόνος τε,
Ἥμεινοι οὐτ' αὐγῆς ὑπερίονος Ἡελίοιο
Τέροντ' οὐτ' ἀνέμοισι, βαθὺς δὲ τε Τάρταρος ἀμφίς. (Il. θ. 479.)

The tradition that Saturn fled from Greece to the west, or to Latium, as a hiding-place, whence Virgil : Latiumque vocari maluit ; his quoniam tutus latnisset in oris : (*Æn.* viii. v. 322.) and Ovid : Dicta fuit Latium terra latente Deo : (*Fast.* i. v. 238.) is but a variety of Homer's account of his being thrust into the Shades. The ideas of West, Sunset, *δύσις*, Darkness, and the lower regions in a spiritual sense, are inseparable in the primitive greek fable ; where, as in that of Egypt, the astronomical and funereal mythology, by an obvious and natural association of ideas, were closely connected ; as is clear from the whole *Νεκρομαντεία* of the *Odyssey*, and the phœnicogreek names "Ερεῖος, Erebus, from *ערב* Ereb, the West, Evening, or Dusk ; and *Ζόφος*, *Ζόφον* *ἠερόεντα*, from *zaphun*, the north, or "Hidden from" the sun. Vid. Buxt. *Lex. hebr.* v. *זפ*. In the egyptio-greek medals, the figure of Saturn appears in company with the sign Capricorn of the zodiac. Zoëg. *Num. Egypt. Mus. borg.* p. 183, No. 170.

ⁱ Memph. ΤΩΒΙ. Theb. ΤΩΒΕ. Tuki, Rud. p. 391, sq. Jablonsk. *Lex.* in v. With the Greeks usually Τυβί.

^k De Is. et Os. c. 50.

savours little of the pure egyptian mythology, we have at least enough to suggest the etymology of the name of the month, and possibly the sense in which it was applied. Tobi in coptic means to return, repay, or restore. This was the season in which it would seem that, according to the ordinary course of egyptian agriculture, as influenced by the peculiarities of the climate, the blade shot forth its full ear, and the early crops began to ripen for the harvest;¹ from which period the earth returned, in rapid succession, the various deposits committed to her breast by the husbandman, since the period of the first subsiding of the Nile; so that there could not be a more appropriate appellation of the season, than the return of Isis, the Demeter or Ceres of Egypt. The probability of this etymology has occurred to the learned Rossi,^m who has assigned it a place in his lexicon, though without entering into any analysis of the mysterious signification of the word. We have an opposite illustration of this in the chinese calendar,ⁿ where the first month after the winter solstice, for a different reason, though by a precisely similar analogy, is called Fou or Return; by which, says De Guignes, they denote the return of yang, that is, the principle of heat, which since mid-summer had constantly declined, but from the opposite tropic began gradually to resume its vigour.

Some authors would refer, and not without apparent reason, the sign Aquarius or the Water-carrier, to certain old customs connected with the state of

¹ Pococke, Travels, fol. 1745, vol. i. p. 204. Sonnini, Travels, Eng. trans. 4to. 1800, p. 393, sqq. conf. Zoëga, de Obelisc. p. 166, note.

^m Etymolog. ægypt. Rom. 4to. p. 277. sq.

ⁿ Deguignes, Mém. de l'Acad. des insc. t. xlvii. p. 384.

the river at this season, which are said still to maintain their ground among the natives of Egypt ; and we shall adduce some evidence from the remains of egyptian tradition, as well as from the natural history of the climate, in favour of the plausibility, at least, of the conjecture.

The inhabitants of the banks of the Nile were accustomed, as is well known, to depend almost solely on the river water for all purposes to which that fluid can be applied ; for besides their superstitious regard for the Nile itself, its stream was considered, when properly purified and preserved, not only the most wholesome, but the most invigorating of beverages.^o The Egyptians, says Aristides,^p are the only people who preserve water in jars, and calculate its age as other nations do that of wine. Deguignes asserts^q on the authority of Arab writers, that during the months of Tybi and Mechir of the Alexandrian calendar, a custom prevails in Egypt to this day, of preparing the vessels and cisterns, and laying in the supply of drinking water for the season ; the river having now reached its lowest, and to a certain degree stationary condition, and its stream being perfectly pure, and unadulterated by alluvio of any kind. The months Tybi and Mechir of the alexandrian year, correspond to Choiak and Tybi of the ancient calendar, which we are now endeavouring to elucidate. The chief of the emblems which we have conjectured to represent the month Choiak on the zodiac, the crocodile, is closely connected with the water of the Nile ; and the festivals mentioned by the ancients as

^o Plut. de Is. et Os. c. 5.

^p Orat. egypt. vol. ii. p. 363. ed. Oxon. 1730.

^q Lib. sup. cit. p. 387.

celebrated during this month Tybi, however obscure their precise meaning, all bear reference to something peculiar in the state of the river, and most probably to the lowness of its waters; and one of them alludes most unequivocally to the very custom mentioned by De Guignes. On the seventh day of the month Tybi, says Plutarch,^r they bake cakes with the figure of an *hippopotamus bound*, stamped on them; and in the city of Apollinopolis, the whole day was devoted to hunting the crocodile; when having destroyed as many as they were able, they feasted on them in great ceremony before the temple; it being incumbent on every person, on that day, to taste the flesh of this animal. The above ceremonies there is little reason to doubt were in honour of the river to which these animals were peculiar. On the *eleventh day* of Tybi, we learn from Epiphanius,^s it was customary for every Egyptian to draw a certain quantity of water from the Nile. This ceremony the worthy father supposes to contain some mysterious reference to our Saviour's miracle of converting water into wine, but it bears sufficient marks of pagan origin; and suggests at once the idea of Aquarius, the sign of the zodiac for the season. May not the fable, that during the reign of one of the early kings of Egypt, the Nile flowed *eleven days* with honey, figurative of the sweetness and excellence of its waters,^t be connected with the above number of the day of the month, to which this rite was attached. According to Mr. Salt,^u the emblem of the river itself, was a figure

^r De Is. et Os. c. 50.

^s Hæres. li. 30. ed. Petav. p. 451.

^t Manetho, Dynast. 2d. ap. Syncel. Chronogr. p. 54. et Euseb. in Thes. temp. Scalig. p. 14.

^u Essay on phon. hier. p. 48. pl. iii. q.

crowned with lotus, pouring water, precisely similar to the figure of Aquarius on the greco-egyptian zodiacs, which we may therefore presume to have been a personification of the Nile in its lowest state, when the value of its waters rendered them an especial object of superstitious veneration, though of a different nature from that attached to them during the inundation. Champollion has also given in his *Pantheon*^v a figure of Ammon in the character of Nilus, pouring water out of a vase. In the hieroglyphic inscriptions, we sometimes find three vases assigned the river god as an attribute, sometimes only one.^w The first number is an emblem of the inundation, as we learn from Horapollo;^x any thing thrice repeated denoting abundance or a great quantity of the object.^y The single vase probably refers to the lowest state of the river. It is well known that the vases for filtering or preserving the Nile water, called Canopi by the Greeks, played a distinguished part in the egyptian mythology.^z Immediately below the group of the

^v Pl. 3. ter.

^w Ibid. conf. *Précis du syst. hiér. tab. gen. no. 241, 242.*

^x Hierogl. lib. i. c. 21. Horapollo in the same passage observes, that the inundation of the river was called Noun. M. Champollion in the second edition of his *Précis* (loc. sup. cit.) has affixed to this group in his vocabulary, the word NOYB—either, I presume, as supposing that Horapollo's text is incorrect, or that the two words are synonymous. Be that as it may, NOYN certainly is a pure coptic word denoting a flood or mass of waters; and as such occurs frequently in the coptic version of scripture; as in Ps. xli. 7. ΦΝΟΥΝ ΑΨΜΟΥΤΙ ΟΥΒΕ ΦΝΟΥΝ—Deep calleth unto deep. Conf. Deut. viii. 7. Luc. viii. 31. It is clear that in the text of Horapollo, as has been frequently observed, we must read ἡν καλοῦσι, for ἃν καλοῦσι. (Vid. Jablonsk. Coll. voc. ægypt. in v.) The same number of signs of water is, as we have seen, the symbol of the season of the rise of the river, in the calendar.

^y Young, Art. Egypt. p. 70. No. 204. Champol. *Préc. tab. gen. No. 227.*

^z Plut. de Is. et Os. c. 36. Montf. Ant. expl. t. ii. pt. ii. p. 320. pl. cxxxii. sqq. Jablonsk. Panth. l. v. c. 4. § 5.

crocodile and hippopotamus in the theban tomb, is a vase, on which the monster rests^a one foot. This the french illustrators of that monument have, I conceive, justly conjectured to be the sign of Amphora or Aquarius.

MECHIR. (*Pisces.*)

Concerning this month or its name no observations of a satisfactory nature present themselves; in the coptic vocabulary it occurs written also Meshir, arabice *امشير* Amshir.^b Kircher^c asserts, but without giving his authority, that during this month, it was customary to fumigate and purify the temples and sanctuaries. If he be right, it might give the etymology of the name, as Amshir in Egyptian means a censer, or oblation of incense. Being, however, here destitute of any guide to our researches, we shall pass on to the next month, which will afford more pointed illustrations of our views.

PHAMENOTH. (*Aries.*)

The sense of this word is obvious; namely the month of Amon or Amen, the patron deity of Thebes, whose name evidently constitutes its principal element. It is nearly the same as the appellation of some of the most celebrated theban sovereigns, Amenoph,

^a Jomard, in Descr. de l'Eg. Antiq. Mém. p. 256.

^b Tuki; Kircher; locc. citt. ad p. 67. supr. ^c Œd. ægypt. t. iii. p. 262.

or with the prefix, Phamenoth,^d which means literally *dedicated or devoted to Amon*. It corresponds still more closely to the proper names of private individuals, Phamenoths, or Amenoths,^e common in papyri, and really synonymous with the other; the terminations *oth* or *oph*, being merely varieties of pronunciation of the coptic ΩΤΗ to devote or dedicate;^f so that there can be no question respecting its import; this being evidently the month of the chief of the theban pantheon, commonly called in inscriptions, Amon, *ruler or director of the gods*; identified by the Greeks with their Jupiter.

There seems among many nations, at whatever period of the seasons the civil commencement of their year may be fixed, to be a natural tendency to date its first month, in an astronomical sense, from the vernal equinox; as the epoch when the sun, having renewed his vigour, completely overcomes the ascendancy of the lower hemisphere, and advances rapidly towards the zenith. This may account for the Egyptians having dedicated this month by preference, to the prince of their pantheon, Amon Ra, himself an emblem of the luminary, and whose hieroglyphical symbol, it is scarcely necessary to observe, was a Ram,^g the sign of this division of the zodiac; thereby investing him with the supremacy of their astronomical calendar, while Thot presided over that in civil use. There can be little doubt, but that the practice of counting the signs from Aries was originally an egypt-

^d As in the celebrated greek inscription on the theban statue. Conf. Pausan. Att. c. 42. § 2.

^e Papyr. ap. Young, account of recent discov. p. 77, 78. sqq.

^f Champol. Précis p. 168. Koseg. de prisc. Ægypt. lit. p. 32.

^g See the splendid figure ap. Champol. Panth. pl. 2. bis, 2. quater.

tian custom, which only became general among the Europeans in later ages; for the more ancient Greeks, on their first adoption and use of the zodiac, seem to have adapted its signs to their civil calendar, reckoning from Cancer, as the commencement of their own olympian year.^h That the other was the peculiarly egyptian arrangement, we are led to conjecture from its own internal evidence; but besides this, Theon of Alexandria, an author sufficiently well versed in the mythological astronomy of Egypt, positively asserts it to have been so. In his commentary on a passage of Aratus, where that poet in enumerating the signs begins with Cancer, he observes:† “But why does he begin with Cancer, while the Egyptians always reckon from the sign of the Ram? because it is his usual practice to reckon from the north, and Cancer is the most northerly sign; but the Egyptians with equal reason commence from the Ram, arranging their emblems according to the analogy of their physical qualities. Hence, say they, the Ram is the chief, as being by nature princely and commanding, since the Ram is leader and guide of the flock; as also because in this sign the equinox takes place.”

Plutarch^k informs us, that on the first day of Phamenoth they celebrated the “entrance of Osiris into the moon,” as being, *ἔαρος ἀρχή*, “the *beginning of spring*,” (according to the sense of the expression as referred to the vulgar idiom.) The first part of this description is not very intelligible; there can however be little doubt, from the second, but that

^h Arat. Phænom. v. 545, sqq. Hipparch. ad Arat. lib. iii. ap. Petav. Uran. p. 136. sqq. Calend. Græc. ap. Gemin. Elem. c. xvi. conf. Petav. Uran. p. 142.

ⁱ Ad Arat. Phænom. v. 544.

^k De Is. et Os. c. 43.

the feast here alluded to was nothing more than an ancient solemnity first instituted in honour of the vernal equinox, or first day of Jupiter's month; which remaining, like other rites, attached to the month, and not to the sign, may have been confounded or misunderstood by Plutarch. This appears to be proved by the circumstance that the expression ἔαρος ἀρχή, here used by that author, commonly denotes with astronomers, not literally the commencement of the season called spring, but the vernal equinox itself, the chief point or acme of the season. So Theon:¹ Μαθὼν γὰρ ἐν Κριῶν εἶναι αὐτὸν, ἔαρος ἀρχὴν γνώσῃ, ὁμοίως καὶ ἐπὶ τῶν λοιπῶν. "for when you know that the sun is in the Ram, you will reckon that it is ἔαρος ἀρχή, the acme of spring, and the same holds good of the other cardinal points;" and accordingly in another place:^m ἀρχὴ χειμῶνος, ὅταν ἐν τῷ Αἰγικέρωτι γένηται ὁ ἥλιος, τότε γὰρ σφοδρὸς ἐστὶν ὁ χειμῶν. "The ἀρχὴ χειμῶνος, or acme of winter, is when the sun enters Capricorn; for then is the severity of winter."

PHARMOUTH, (*Taurus.*)

We may trace a connexion between this name and the egyptian pantheon, in the resemblance of its radical syllables to those of Hermouthis or Thermouthis, the title of a female personage of some celebrity among the ancient expounders of egyptian mythology.

That the month Pharmouthi took its name from this divinity, has occurred to Jablonski,ⁿ who has,

¹ Ad Arat. v. 599.

^m Ad v. 286.

ⁿ Panth. lib. i. c. v. § 10. conf. Schow, Cart. pap. pp. 46, 47. Jackson, Chron. Ant. vol. ii. p. 4.

however, assigned a character to herself; and an etymology to her name, neither of which appear very plausible, namely, EPMOYT, *causing death*, or with the article ΘEPMOYT, Thermouthis, *the causer or goddess of death*; identifying her with Hecate or Tithrambo, an evidence which ought, in reason, to lead to a conclusion the reverse of that which he has formed. Epiphanius, in treating of egyptian superstition, observes, that “some are initiated into the mysteries of Tithrambo, who is also called Hecate, others into those of Nephthys, others into those of Thermouthis;” whence the learned critic infers, that Tithrambo or Hecate, and Thermouthis, are the same, apparently because it suited his argument; but the sense of the passage leads to the more just inference, that they were different, as an express distinction is made between their rites.

In the existing remains of hieroglyphic antiquity, there occurs no distinct proper name of a divinity resembling Hermouthis or Thermouthis; but there is a familiar title so nearly corresponding to it, as to leave little doubt but that it is the same, considered by the Greeks as that of a separate goddess, namely, MOYT, mother; or commonly with the epithet ΧΕΡ mighty prefixed, ΧΕΡΜΟΥΤΙ, mighty or powerful mother.^o This, with the usual prefix Pha, might give us the name of the month; the first letter of the second or longer name, being a liquid or aspirate of uncertain sound in the egyptian language, may possibly have been suppressed or slurred over in composition, more especially by the Greeks anxious on all occasions to reduce the pronunciation of foreign tongues to their own

^o Champol. Précis. du syst. hiér. p. 122, sqq.

standard of euphony. Among coptic proper names we find Patermouthis;^p which, (as in the case of Paophi, Phamenoth, and other months,) seems to be merely the same dedicatory compound, applied according to familiar custom to private individuals; and where the pronunciation of the initial radical appears to have been preserved entire. Without insisting upon the rigid exactness of this etymology, we may be permitted to assume, that in whatever way the name is compounded, it contains the signification of sacred to Mouth, or Zermout; as Phamenoth contains that of sacred to Amon. We shall, in another place, adduce farther confirmation of this opinion, from the close connexion between this deity herself, and those who preside over the months, which precede and follow her own in the calendar.

We find this title of Mouth, Zermout, or Thermouthis, applied by the ancients, or appended in the hieroglyphic inscriptions, to various female personages of the pantheon, Isis, Neit, Buto; who thus become more especially invested with the attributes of maternity or female productiveness.^q The principal

^p Schow, *Cart. pap.* pp. 12. 24. 28.

^q We have seen (*supra*, p. 95.) that Plutarch mentions Mout, which word is rendered by himself mother, among the titles of Isis, that is, of the female essence of the egyptian divinity in general. This is confirmed by Ælian, (*Hist. Anim.* x. 22.), who also observes (x. 31.) that a particular species of snake, one of the sacred emblems of Isis, and her favourite head ornament, was called Thermouthis. Horapollo assigns the same character to Neit (Minerva), as he informs us that a vulture was the emblem of both that deity and of the idea mother. (*Hierogl.* i. c. 11, 12.) Eusebius (*Præp. Ev.* l. iii. c. 11.) states that Isis was also so represented. In M. Champollion's *Pantheon* the title Mout or Zermout (Thermouthis) is applied to various other female deities.

According to Josephus (*Ant. Jud.* II. ix. 5), the Pharaoh's daughter who saved Moses from the waters of the Nile, was called Thermouthis;

component part of the hieroglyphic name is a vulture, the sign of the idea *mother*.^r In fact, this mysterious idol appears to have been merely a symbol of the maternal essence or principle of the creation, the *mother* or *mighty mother* of the world. She was considered as the wife of Ammon, whom we find invested with the character of male generative principle, or Priapus.

Horapollon^s asserts that the Bull of the zodiac was consecrated to a female deity whom he calls the Moon; a description not incompatible with the varied properties of Mout. According to the unanimous testimony of antiquity, the moon was ἀρσενόθηλος in the egyptian cosmogony;^t that is, one of those physical objects of the creation which partook both of the male and female essence. Thermouthis also frequently appears with very unequivocal marks of the double sex.^u “The moon was considered female,” says Plutarch,^v “as impregnated through her junction with the sun, male as herself redistributing the same generative or creative principles throughout the

which may have been either a title of honour peculiar to herself, or assumed according to the prevailing fashion in honour of some favourite deity. Heliodorus, however, in his romance (*Æthiop.* l. i. p. 54, sqq.) gives the same name to a man, with whom, as a professed warrior or soldier of fortune, it may have borne reference to Neith as goddess of war, if indeed she can be so considered in the egyptian pantheon. This, however, might still farther corroborate what has been observed in the text concerning the sex of the divinity. One of the branches of the Nile, called Thermuthiac or Pharmuthiac by Ptolemy, (*Geogr.* IV. 5.) and Pharmuthis, a small town of the Delta, also, it may be presumed, derived their name from this deity.

^r Champol. Précis du syst. hiér. p. 122.

^s Hierog. lib. i. c. 10.

^t Plut. de Is. et Os. c. 43. Spartian. in vit. Carac. c. 7. conf. Orph. Hymn. 8. Macrob. Sat. iii. c. 8. Selden, De diis syr. Synt. ii. c. 2. See Appendix No. XVII.

^u See Champ. Panth. pl. 6. bis.

^v De Is. et Os. c. 43.

world." In the same passage he observes, that "this was the reason why the Egyptians called the moon *the mother of the world.*" διὸ καὶ μητέρα τὴν Σελήνην τοῦ κόσμου καλοῦσι. This corresponds with the description given of her by Horapollo.^w "This goddess produces and nourishes every thing useful in the universe;" τῆς θεοῦ αὐτῆς πάντα γεννώσης καὶ αὐξανούσης ὅσα κατὰ τὸν κόσμον ἐστὶ χρέσιμα. Cyril, confirmed by Plutarch, states that the issue of this mystical union between the two deities, was the bull Apis:^x the same no doubt alluded to by Horapollo above quoted, and which we learn from many testimonies^y was especially sacred to the moon. On the greco-egyptian zodiacs, and elsewhere,^z Taurus appears accordingly with the disk of the moon between his horns. Eusebius,^a it may be added, asserts that the moon in one of her female characters was personified by a goddess with the head of a vulture, which bird we have already seen was the symbol of Mout, or *Mother*. This mysterious union of the two luminaries, to whom these two contiguous months, Phamenoth, Pharmouthi, were respectively dedicated, namely, Ammon, the male principle of the sun, and Mout, the female essence of the moon, may possibly be hinted at in the obscure fable of the passage of Plutarch, quoted in the preceding article.

^w Hierog. I. c. 49.

^x Cyril. ad Hos. x. 3. p. 145. Σελήνης μὲν γὰρ τέκνον, ἔκγονον δὲ Ἡλίου, τὸν ἅπιν Αἰγύπτιαι μυθοπλαστοῦντες ἔλεγον. conf. Plut. Sympos. viii. qu. 1. De. Is. c. 43.

^y Ap. Jablonsk. Panth. l. iv. c. 1. § 3.

^z Passeri, Gemm. astrifer. vol. i. No. xxii. &c.

^a Præp. ev. l. iii. c. 12.

PACHON, (*Gemini.*)

This word, which among the Copts admits of considerable variety of orthography, Pachon, Pachons, Pashons;^b denotes literally the month of Chon, or Chons, the egyptian Hercules, whose name occurs in the ancient authors under corresponding varieties. From the *Etymologicum magnum*^c we have, “Chon; among the Egyptians Hercules;” and Champollion^d has identified the name Chons accompanying the figure of the god on the monuments. The same is common as an element of the appellations of individuals in the papyri, and other inscriptions; as Petechonsis, Psenchonsis, Devoted to Chons, Son of Chons, &c.^e In the list of theban kings given by Eratosthenes, the name of this deity occurs under the form of Som or Sem, as an element of that of king Semphoucrates, or *Hercules* Harpocrates, according to the greek translation appended to it; and in Manetho’s twenty-third dynasty, in a note attached to the name of king Psammus, it is said that he was called by the Egyptians Hercules. This, deducting the greek termination, is the same word with the article prefixed.^f Hence there can be no doubt, as has

^b Vid. auctores sup. cit. ad p. 67.

^c v. *Xōνες*.

^d Précis Tab. gen. No. 49. 193.

^e Papyr. ap. Young, account of discov. p. 70. 75, alib. conf. Append. to same work, No. I. Kosegart. de prisc. Æg. lit. p. 68.

^f Euseb. Chron. ap. Scal. Thes. temp. p. 16. conf. Champol. Préc. p. 252. M. Klaproth (*Collect. d’Ant. égypt.* p. 23.) has indeed denied the justness of this etymology, so ingeniously deduced by Mons. C., and asserted that the article was never prefixed to proper names in Egyptian. Here however, as in some other instances, this acute critic, in the ardour of his controversy, seems to have overshot his mark. Egyptian proper

been often observed by egyptian antiquaries,^g but that this name Chon or Chons, under its numerous varieties, is originally no other than the coptic radical χOM , or $\chi\Omega\text{N}\Sigma$,—strength or power;^h the sound of the first letter of the word being, as we have seen above, uncertain, or such as cannot be conveyed exactly in the idiom of any foreign language, but partaking it would appear of the varieties of guttural, aspirate, and sibilant.

The reasons which have induced me to assign this position in the year to Pachon, or the first water month according to the hieroglyphic, have been given above; and in still farther corroboration of them, it will be easy to show how closely its patron deity was connected with this season in the egyptian mythology.

If any attention be due, on the one hand, to the joint testimony of Eudoxus and Horapollo,ⁱ—on the other hand, to that of Solon and Plato,^k two among the sages of Greece who are supposed to have been most intimately acquainted with the doctrines of the theban priesthood, confirmed by Porphyry¹ and Ho-

names, especially when significant of some quality or attribute, do unquestionably occur very frequently with the article prefixed. For example, that of the god Sun, PH and ΦPH , on medals, gems, Abraxas, &c. $\text{AMEN}\Omega\Phi$, $\Phi\text{AMEN}\Omega\Phi$; *supr.* p. 108. $\Sigma\text{EN}\Omega\text{S}\Omega\text{P}$, $\Pi\Sigma\text{EN}\Omega\text{S}\Omega\text{P}$, Kosegart. pp. 29. 37. MAY , Mother; MAYT , or $\text{TMA}\Upsilon$, Plutarch; *vid. sup.* p. 111. *conf. Lex. Copt. in vv.* $\Pi\text{I}\Omega\text{P}$, Schow Cart. Papyr. Mus. Borg. p. 88. $\Pi\text{IAM}\Omega\Upsilon\text{N}$; *id. ibid.* Phthah, I hold to be $\Pi\text{TA}\Sigma$, (the) Establisher; as here $\Pi\chi\text{OM}$, (the) Strength or Might, &c. &c.

^g Jablonsk. Coll. voc. æg. v. $\text{X}\Omega\text{N}$. Te Water. *ad loc.* p. 200. *Id.* Jablonsk. Panth. lib. ii. c. 3. § 3. Young, Art. Eg. p. 45. No. 18. Champol. Précis, p. 249.

^h We find traces of the same primitive root in the hebrew כח , persian khan, german könig, (king), kühn, können, all referable to the same original source of human language.

ⁱ *Vid. auctores, cit. ad p. 47. supr. conf. Horap. i. c. 21.*

^k *Edit. Serran. t. iii. p. 22*

¹ *Ap. Procl. ad Tim. Plat. p. 37.*

rapollo ;^m—the most ancient recorded doctrine of that fraternity respecting the rise of the Nile was twofold ; the phenomenon being ascribed, partly to the rains of Æthiopia, partly to an ebullition or oozing of water from the lower parts of the earth, a peculiar blessing bestowed by the gods on their favourite land, for the purpose of fertilizing its soil, without exposing it to those natural convulsions, or other calamities, to which, according to the same priests, all countries were subject that were dependant on the water of their own atmosphere alone for the moistening or irrigation of their fields.

It will be seen, then, with what propriety the first, and as it were laborious, augmentation of the waters of the river, was dedicated to Hercules ; who was in the egyptian mysteries the active or physical power of the deity, or of nature ; *Virtus deorum*,ⁿ *Δυνάμις τῆς φύσεως*.^o We have traces of a title of this deity, precisely corresponding to the above epithets, in the name of the city of Sebennytus, called by the Copts *ΧΕΜΝΟΥΤΙ*, *Semnouti* ;^p which means literally Strength or Power of God ; and that it really was the sacred city of Hercules, may be inferred from the circumstance, that on the greek and roman coins of Sebennytus,^q the common device is a figure of Mars or of Hercules, (these two deities being one with the greek interpreters of egyptian theogony), namely, a

^m Hierogl. loc. sup. cit. conf. Aristid. orat. Ægypt. p. 363, sq. ed. Oxon. 1730.

ⁿ Macrob. Sat. i. c. 20.

^o Jamblich. vita Pythag. Ed. Kuster. c. xxviii. sect. 155, p. 131.

^p Kircher, Scala mag. p. 208. Croze. Lexic. in v. Jablonsk. Panth. l. ii. c. 3. § 4. Champol. L'Égypte sous les Phar. tom. ii. p. 192.

^q Zoëg. Num. ægypt. Mus. Borg. p. 117, No. 187. p. 187, No. 212.

man armed at all points. And we hear^r of a native author, *Apollonides, also called Horapius*, (probably the same as the celebrated Horapollo), who wrote a work under the same title of *Semnuthis*, in which he described the exploits of the gods against the giants. That the title of the work was the same as that of the god, appears from Macrobius in the passage already alluded to, where Hercules is described as the power of the gods (*virtus deorum*) by which they overcame the giants. *Ipsè creditur et gigantes interemisse, cum cælo propugnaret, quasi Virtus deorum.* The principle of drought, or unwholesome aridity, was a chief element of the Typhon of the physical world, of whose evil influences the giants were considered as personifications. To these the principle of moisture, figurative of the waters of the Nile, or the vapours arising from them, was in perpetual hostility. Diodorus expressly invests the egyptian Hercules with the power of controlling or influencing the inundation of the Nile;^s of this we have also traces in the fables, apparently of native origin, where that hero, when afflicted with thirst in crossing the deserts of Lybia, is relieved, by Minerva according to some, according to others by Jupiter in the form of a ram, that is Ammon;^t who suddenly caused tepid springs to issue from the bowels of the earth for his supply. A figure of Hercules striking the ground, from whence issues forth a stream of water, is common on egyptian medals.^u

^r Theophil. Antioch. ad Autolye. lib. ii. c. 6. ad calc. Justini Martyr. ed. Paris, 1742, p. 352.

^s Bibl. hist. i. c. 19.

^t Hesych. v. Ἡράκλεια λουτρά. Suid. v. Ἡράκλειος ψῶρα. Serv. in Virg. Æn. iv. 196.

^u Zoëg. Num. Mus. Borg. p. 117. No. 118; p. 191. No. 238; p. 192. No. 243; p. 211. No. 445.

The Twins, emblems of this season on the zodiac, have at first sight no apparent connexion with the mythology of Egypt; but most of my readers will probably be aware, that one of these twins, the Pollux of the Greeks, is called on the arab zodiac Hercules;^v and one of the two most brilliant stars of the constellation was also named Hercules by the Greeks;^w which star, as well as the twin to whom it belongs, is still called Hercules on our globes. There exists, moreover a fragment of an egyptio-greek zodiac, sculptured on marble, and which has been frequently engraved and illustrated,^x where the sign of Gemini is occupied by two figures, one of whom, the largest and most prominent, is the greek Hercules with his club; the person of the other lesser figure has no such distinctive marks, but appears to be a female. On the zodiac of Dendera, the constellation Gemini is also represented by two figures, the one male, and the other female.^y The latter has the head of a lion, which peculiarity, it is well known, belongs to an egyptian goddess, whose name M. Champollion^z has identified as Tafne. The same distinguished critic, in his first letter on the museum of Turin^a has observed, that this very lion-headed goddess, whom he considers as a personification of the attributes of Neit, in her character of *Minerva bellica*, the defensive deity of Egypt, “appears among the female divinities of second class,

^v Hyde, ad Ulugh Beigh. p. 33. Scalig. ad Manil. p. 480. ed. 1600. Kirch. Œd. Ægypt. tom. iii. p. 154.

^w Ptol. Tetrab. i. c. 8. Procl. Paraphr. in Ptolem. Tetr. p. 33. Elzev. 1635. Hygin. Poet. astron. ii. c. 22.

^x Bailly, Hist. de l'astr. anc. pl. iii. p. 504. Court de Gebelin, Monde prim. t. iv. pl. viii. Conf. Grot. imag. ad Germanic. Phæn. p. 18. in Arat. Phæn. edit. 1600, 4to.

^y See PLATE III. No. 4. ^z Précis du syst. hiér. tab. gen. No. 53, 72.

^a P. 44. Conf. Précis tab. gen. No. 53.

associated under the name of Tafne to the egyptian Hercules." This god therefore ought to be her companion in the sphere; and in fact on the quadrangular zodiac of Denderah, he appears in his place in the same attire as the figure of the god Chon given in the Pantheon of the french author.^b This fact concludes a chain of circumstantial evidence, which can leave no reasonable doubt, respecting the original connexion between the month Pachon and the zodiacal sign of the Twins; while it shows, that the constructors of the egyptio-greek astronomical monuments of later times, have, in some instances, adhered with much fidelity to the pristine mythology of the banks of the Nile; of this, equally striking examples will occur in the following months.

M. Champollion's opinion, that Tafne, as an attendant on Hercules, was a personification of Neith or Minerva, appears to be justified by the close connexion which we find between that goddess and her companion, in the vulgar mythology. Of this we have already given an example; another occurs in the orphic poems, which contain so many mysterious allusions to egyptian fable; where we are told that Hercules was conducted up to heaven by Pallas:

^b Pl. 25. See our PLATE III. No. 5, conf. No. 4, sup. cit. In Champollion's Pantheon the figure of the god is seated. I have therefore only copied the head, to show the identity with the zodiacal deity. This the feather that crowns his cap sufficiently establishes, being observable on the head of the same god, in the tableau général of the Précis du syst. hiér. of the french critic, (No. 71.) while Chons, or Hercules, is the only male deity, either in that collection, in the Pantheon of the same author, or on the zodiac, distinguished by this ornament.

Mons. C. has offered in his Précis the variety Sôou of the name of this god. I know not on what authority it rests; but if genuine, it might be connected with a corresponding variety in the name of the month, given by Tuki, ΠΑΥΩΕΥΣ, which the critics have usually considered as an error of impression for ΠΑΥΩΝΣ.

Ἴξεν ἄγων ἐς Ὀλυμπον ἀγάννιφον . . . σαόφρων
 Παλλὰς Ἀθηναίη λαοσσόον Ἡρακλῆα.^c

This harmonizes aptly enough with the position of the two figures on the zodiacs, where with joined hands they occupy their place in the midst of the celestial train.

The custom of associating deities in pairs, as to especial points of worship or of attribute, like the *σύνναοι θεοί* of the Greeks, is familiar in egyptian superstition. It is obvious, how naturally the Greeks, in transferring this figurative couple to their own pantheon, might metamorphose them into their own national twins, Castor and Pollux.

In mentioning above, the correspondence of the opinion of Zoëga respecting the ancient form of the egyptian year, with that which I have here ventured to offer, I observed, that I had been led to suspect, that among the reasons which had induced him to adopt it, were some not dissimilar to those here advanced. In confirmation of that remark, I shall quote the following passage from his work on the medals of the Borgian Museum. In a note to a coin of Sebenytus,^d where, as already stated, we have for device a figure of Hercules, or a man armed at all points, he observes: "The name of this city has been excellently interpreted by Jablonski, **ΧΕΜΝΟΥΤΙ**, Robur Dei, the power of the divinity. It would appear, that in the egyptian mythology there were two children of Jove, whether called Cabiri, Pataëci, Hercules, Martes, or Castores, matters not; for they all sprung originally from the same source. The essential point

^c Lithic. in Proæm. v. 9. sqq.

^d No. 99. p. 74. conf. Note to p. 176.

is, that by two vigorous youths, sometimes represented with joined hands side by side, at others posted by the throne of the deity, was figured the arm of the Almighty, the protecting and all-conquering power or virtue of the divinity. Hence, according to Hesychius,^e γιγνῶν, γιγῶν· Παταϊκὸς ἐπιτραπέζιος· Αἰγυπτίους Ἡρακλῆς· hence the Patæci and Cabiri of Herodotus, who, when he rejects the Dioscuri from the egyptian mythology, must be understood to refer to the lacedæmonian Castores, not the celestial Twins. For those deities who in the old egyptian cosmogony were called Cabiri^f or Nidsjom, (NIXOM) the same, in their heroic fable, were styled Horus and Harpocrates; the latter corresponds to the Hercules of the Greeks, the former to their Mars. But Horus being conjoined with Aroeris became their Apollo, wherefore, in the egyptio-greek zodiac we find Hercules and Apollo combined." These observations, inexact as some of them may be, are yet fraught with the genius of the profound and acute critic from whom they emanate. Zoëga being convinced, that XOM or Hercules was the representative of the twins of the zodiac, could not, had he treated of the calendar on the basis proposed by himself, of a year commencing in autumn, have failed to observe, how exactly Pa-chon, or the month of Hercules would be in its place. He had only to substitute the female Tafne with the lion's head, as the second of the mythological twins' protectors, and his

^e Voce. Γιγνῶν.

^f So Nigidius, the old roman commentator on the sphaera barbarica or egyptia, (apud Schol. German. v. 146.) calls the twins: Cabiros, deos Samothraces, quorum argumentum nefas est numerare. Conf. orphic hymn, xxxvii. v. 23.

theory would have been correct ; for in fact, as we have already seen, and shall still farther prove in the sequel, Chons and his companion of the lion's head were the true Cabiri, or essential personifications, male and female, of strength or power, in the egyptian pantheon. Nor, indeed, is it altogether improbable, that some other male deity of lesser rank, similar to the one whom he describes, may occasionally have occupied the place of Tafne by the side of Chons ; since, on the sphere of the Arabs,^g who in this instance have no doubt copied more or less accurately from the greco-egyptian astrology, the Twins are to this day Hercules and Apollo ; which variety has been adopted on our globes ; and appears on the ancient images of the zodiac illustrated by Grotius ; these names having been also preferred by several of the classical commentators.^h

PAONI,ⁱ (*Cancer.*)

The month of the Sun by pre-eminence, that is, of the greatest height and brilliancy of the luminary, corresponding to our July ; which season, the rapid approach of the Nile to its full tide, and the rise of the Dogstar, rendered the most important and joyous of the year ; hence its dedication by preference to the splendid orb itself, which influenced and reigned supreme over their calendar, as well as their mythology.

^gVid. auctores sup. cit. p. 119.

^hHygin. Poet. astr. ii. 22. Ptolem. Tetrab. i. 8. Servius in Æn. xi. v. 260.

ⁱMemph. ΠΑΩΝΙ. Thebaic. ΠΑΩΝΕ.

On, as we know from Scripture, was an ancient name of the godhead of the Sun.^k Hence Pharaoh's officer Petephre, or Potiphra, whose name means literally in the coptic language dedicated or devoted to the Sun,^l is called by Moses^m priest of On. Although in the existing remains of that tongue, there is little appearance of the name having been in familiar use, yet Cyrilⁿ knew it as an egyptian word; and there are plentiful traces of its application to the Sun in a religious or mysterious sense at least. The true appellation of the city of the Sun, called by the Greeks Heliopolis, was On, or the city of On; a name it has retained in the coptic language;^o whence it may be presumed, that, in the above mentioned passage of Genesis, the term applies as well to the place of the deity's worship as to himself; corresponding to the version of the Copts, where it is rendered ΩΝ-ΤΙΒΑΚΙ, and by the Septuagint 'Ηλιοῦπολις.^p The same city seems to have been styled by Ptolemy the metropolis of On;^q and the Arabs still call it Ain shemsh, or Ain of the sun;^r although the first part of this name, from its resemblance to another word in their own language denoting a fountain, they have referred to a spring among the ruins of the city. Plutarch^s informs us, that the priest of Heliopolis, under whom Pythagoras studied, was called Onou-

^k Bonjour, Mon. Copt. Mus. Vatic. p. 20. Jablonsk. Panth. lib. ii. c. i. § 8. Young, Encycl. brit. Supp. art. Egypt, p. 44.

^l Champol. Précis, p. 177.

^m Gen. xli. v. 45. xlvi. v. 20.

ⁿ Ad Hos. c. x. v. 3. p. 145. "Ὦν δὲ ἐστὶ κατ' αὐτοὺς ὁ Ἥλιος.

^o Champol. L'Égypte sous les Phar. tom. ii. p. 40.

^p Conf. Exod. i. 11.

^q D'Anville, Mém. sur l'Égypte, p. 113.

^r Michaelis, ad Abulfed. Descript. Ægypt. p. 125, sqq. Gott. 1776, 8^o.

^s De Is. et Os. c. 10.

phis; which is evidently ΩN-ΩTII, devoted or dedicated to On or the Sun; by the same analogy as Amenoph, sacred to Amon, and other similar titles; and is in fact nearly synonymous with Petephre, the name of the same minister in the days of Joseph. Onouphis was also a title of one of the sacred oxen of the Sun.^t The coptic for *light* is to this day OEIN or OYΩNI,^u which is doubtless merely the same word under slight varieties of orthography, the last of which corresponds, in respect to the euphonic paragoge of the last vowel, to that adopted in the name of the month. In the hebrew Aven, which Ezekiel^v uses for On, we have a similar variety of the pronunciation of the first syllable. The word Phe-on, the article being prefixed, occurs on the gems of the Basilidians, as an appellation of their Abraxas, or Sun-god, in common with Phre, Chnoubis, and others borrowed from the mythology of Egypt.^w The name Ouenephre, in Manetho's first dynasty, appears to contain both those of the deity combined; it might be rendered *Lux solis*.^x

The sign of this season on the greek zodiac is a crab; an unmeaning emblem as referred to egyptian mythology. But on the greater number of egyptio-greek astronomical monuments, we find a scarabee

^t Ælian. Hist. An. xii. 11.

^u Croze. Lexic. dialect. Sahid. in v. Jablonsk. Coll. voc. ægypt. v. ON.

^v C. xxx. v. 17.

^w Montf. Ant. exp. t. ii. pt. ii. pl. cxlvi. conf. Gorkæi. Dactylothec, pt. ii. No. 404.

^x Verosimile mihi fit, says Jablonski, memsem hunc sic dictum fuisse ab OYΩINI vel ΩINI, luce, quod in antiquissimo dialecto thebaico efferebatur OEIN; rationem autem denominationis hujus nondum perspexi. I have however no doubt but that the foregoing considerations would have satisfied the learned author of the correctness of his opinion. Coll. voc. ægypt. v. ΠΑΥΝΙ.

instead of a crab,^y as the emblem of the solstitial month; and it is hardly necessary to observe, that the scarabee is the symbol of the Sun, or On, in his noblest capacity, as Lord of the universe, first source and origin, and continual preserver of the created world. In this respect the scarabee was a representative, not only of the solar orb itself, but by analogy of certain deities of distinguished rank, whose loftier attributes comprehended those of the brilliant Lord of the physical world; as of Phtha,^z the Demiurgus or creative power, whom the Greeks identified with their Hephæstus or Vulcan, probably as combining with his other properties that of god of fire. In the ancient astronomical picture of the tomb of the kings, the scarabee, with the red disk of the sun in his claws, occupies a conspicuous place among the zodiacal emblems. The same insect also occurs in an astrological gem of Count Pahlen's collection,^a accompanying Libra and Scorpio; and we seem to have farther curious evidence, that it was the original symbol of this division of the ancient egyptian zodiac, in the circumstance, that the cypher of the same division, still in vulgar use, is apparently but an abbreviated form of the hieroglyphic "Scarabee;" the hieratic contraction of which contains precisely the same elements, under trifling varieties of arrangement, as the modern sign, namely, two curves or hooks placed transversely.^b

^y On the quadrangular zodiac of Denderah, and one of those of Esne, (Desc. de l'Eg. Antiq. v. i. pl. 87.) we have the Scarabee; on another of Esne, an animal of doubtful form (ibidem, pl. 79.); on the circular of Denderah, apparently a crab.

^z Champol. Panth. pl. 12, 13.

^a Klaproth, Coll. d'antiqu. pl. xi. No. 602.

^b See PLATE V. No. 5. These cyphers are copied from Champol. 2de Lett. sur le Mus. de Turin, pl. ix. and xiii.

The Greeks, in adopting the zodiac, may either have mistaken this insect for a crab, to which on some of the monuments it bears a close enough resemblance;^c and on the gems of the Abraxas the scarabee, crab, and other shell-fish, are frequently confounded;^d or possibly, as they did not attach the same veneration as the Egyptians to its symbolic character, they may have converted the reptile of the land into the reptile of the sea, as a figure more congenial to their ideas and taste as a maritime people; “A person ignorant of egyptian theology,” says Porphyry, “would feel nothing but disgust for the scarabee, but the Egyptians adore it as the living image of the Sun.”^e The opposite character of this nation, whose abomination of every thing connected with salt water is proverbial,^f were in itself sufficient proof, in the absence of all other, that this odious shell-fish could never have originally obtained so distinguished a place among the noblest of their figurative emblems.

There is however in one respect a remarkable enough analogy between the two symbols, which may tend still farther to shew, that the one is the egyptian original, the other the greek copy. Classical authors have asserted that the crab was chosen to represent the solstice, because of the correspondence of its proverbially retrograde motion to the sun’s course about the tropic;^g an interpretation which has been adopted

^c I have myself observed persons little familiar with egyptian monuments, on being shewn hieroglyphic drawings, mistake the scarabee for a crab.

^d Mont. Ant. expl. t. ii. pt. ii. p. 365, and plates *ibid*.

^e De Abst. iv. § 9. and ap. Euseb. prep. ev. p. 94, c.

^f Plut. de Is. et Os. cc. 7. 32. Id. Sympos, viii. qu. 8. Porphyr. de Abst. iv. § 8.

^g Macrob. Saturn. i. c. 21.

by the greater number of modern expositors, with what degree of justice I shall not presume positively to decide. This however, we find, is the very same reason given by the ancients, and among others by Clemens Alexandrinus^h in the famous passage on hieroglyphic symbols so often quoted, for the scarabee having been adopted by the egyptian mystics as a representative of the sun's motion. "The oblique course of the other heavenly bodies," says the learned father, "is represented by a snake, but that of the sun by a scarabee." Those who are familiar with the natural history of this singular animal, or who have ever observed its habits, will not be at a loss to divine the reason. Clemens himself assigns it: "because, shaping a piece of dung into a circular form, he rolls it backwards, his face being turned in a contrary direction to his course." And Plutarch:ⁱ "The scarabee depositing his seed in a piece of dung made into a circular form, rolls it backwards, as the sun appears to turn the heavens round in a contrary direction, himself being borne from west to east." Porphyry:^k "The scarabee making a piece of dung into a round ball, pushes it with his hind legs backwards, as the sun does the heaven." Here therefore we have the scarabee, with his globe, as an emblem of the retrograde motion of the sun; probably both as regards his supposed annual course from west to east, contrary to his diurnal motion from east to west; and his retrograde motion from the solstice. This beetle is a very singular insect, although its peculiarities, which are of a

^h Strom. iv. p. 556, B.

ⁱ De Is. et Os. c. 74.

^k De Abst. iv. § 9. et ap. Euseb. sup. cit. conf. Horap. i. c. 10. Plin. H. N. xxx. 11.

striking enough description, and a proper knowledge of which is of the highest importance to the study of egyptian antiquity, have been strangely overlooked by those who have devoted their attention to that study. The scarabee, in conformity to the above authorities, as an eye-witness can attest, shaping a piece, usually of horse, mule, or cow dung, into a perfectly circular form, turns himself on his fore claws, so as to stand as it were on his head, and with his hind claws raised against his ball, he thus pushes it before, or rather behind him, in the most indefatigable manner, until he reaches his destination. This is the chief, and indeed reasonable cause, why the egyptians attached so great a sanctity to the animal, as the symbol of the divinity or godhead of the sun, whose globe he is generally represented on the monuments holding in his claws. Another motive of a secondary nature may have been the circumstance, also alluded to by classical authors, and well known to naturalists, that the animal depositing its eggs in this ball, buries it several feet deep in the earth, where, as in a natural womb, the fœtus ripens for the birth. In this respect, his globe might also be symbolic of the all-generative powers of the luminary. As for the other traditions concerning it,¹ such as that the species was composed entirely of males, that they dwelt six months below, and six months above ground, they may be partly founded on fact, partly mere fictions of sophists, egyptian or greek.^m

¹ Plut. de Is. et Os. cc. 10. 74. Ælian. de An. x. 15. Horap. loc. sup. cit.

^m See Appendix, No. XVIII.

ΕΡÎPHI, (*Leo*),

Is written by the Copts Epep, ΕΠΗΠ;ⁿ a name which has also been identified by M. Champollion in phonetic hieroglyphics, attached to the figure of an egyptian divinity, called by him^o “ Apap—Apop—Apop, represented under the form of a gigantic snake, combatted and covered with wounds by various deities. This is the Apophis, or Apopis, the enemy of the sun, whom Plutarch mentions in his treatise on Isis and Osiris.” Plutarch^p farther observes, that Apopis was the brother of the sun, which may account, among other causes, for his proximity to him in the calendar. It may be observed, that of the hieroglyphic elements of this and other egyptian names, the consonants alone are of importance; the vowel which M. Champollion renders A denotes equally E,^q and consequently applies as well to the coptic orthography as to that of Plutarch.

Jablonski^r has rightly supposed this Apophis to be one of the personifications of Typhon, the evil genius; and that by his enmity to the Sun was figured the principle of vapour or darkness, which was fabled to oppose the god of light in his efforts to ascend, or maintain himself in the upper hemisphere. His po-

ⁿ Usually ΕΠΗΠ. Tuki, &c. ΕΠΗΠΠ, Wilk. Diss. de ling. copt. ad calc. Cumberland. Orat. Domin. p. 102. In Epigr. Antholog. ἐπιφι or ἐπιφί. conf. Salmas. ad Sol. p. 304. A.

^o Précis. du syst. hiér. tab. gen. No. 66, a.

^p De Is. et Os. c. 36.

^q Vid. Champol. Précis, pp. 111. 113. 114. conf. Tatham, Remarks on the alphabet. in Egypt. grammar. c. 2.

^r Panth. lib. v. c. ii. § 22.

sition in the seasons, according to the general tenor of the physical mythology of Egypt, is therefore highly appropriate ; as presiding over the month, in which the sun, after having reigned in all his glory about the tropic, descends visibly and rapidly in the ecliptic. The etymology, or rather original meaning of the name, suggested by the same Jablonski,^s to whose labours coptic literature and egyptian antiquity in general are so much indebted, appears unquestionable ; namely, ΑΦΩΦ or ΕΠΩΦ, a giant, in the scriptural sense of the term ; a violent and outrageous person. The same occurs under the variety of Aphobis, as the appellation of one of the Shepherd kings in Manetho's dynasty ;^t that the Egyptians were accustomed to confer titles of reproach or abhorrence on their tyrants, or foreign oppressors, is well known ; thus the ferocious Ochus was called by them the Sword ; and the same, or another equally brutal persian despot, the Ass.^u

That the Lion was the egyptian symbol of this season there can be no doubt, as it occurs on all the astronomical monuments, including that of the royal tomb. But that it was so, not alone, but combined with the emblem of the month or god Apophis or Epep, we have very convincing proof. M. Champollion,^v as already observed, has identified a large noxious serpent as the personification of this deity ; and on the greco-egyptian zodiacs the figure of the Lion is remarkable for the peculiarity, that it tramples upon

^s Loc. sup. cit. p. 100.

^t Joseph. contr. Ap. i. c. 14. conf. Euseb. in Scalig. Thes. temp. p. 16. Syncell. Chronogr. loc. parall.

^u Plut. de Is. et Os. cc. 11. 31.

^v Précis. tab. gen. No. 66.

a monstrous snake, which forms as it were the boat in which he is borne on his celestial voyage.^w Now the same distinguished antiquary has also discovered among the monuments, and caused to be engraved in his pantheon,^x a group consisting of a female deity with a lion's head crowned with the disk of the Sun, who combats and tramples upon this same serpent, standing over him in an attitude not dissimilar to that of the Lion on the zodiac; the head and tail of the reptile which she grasps, rising in front and rear. This deity M. Champollion calls Neith Castigatrice; the snake he has recognised as Apophis. His description of the ænigma, as illustrative of our subject, requires little comment. "Sa tête de lion est ornée du disque et de l'uræus; elle saisit de ses deux mains, et foule en même temps aux pieds, une énorme couleuvre, le grand serpent ennemi des dieux nommé Apop, ou Apoph, dans les textes hiéroglyphiques." In the hieroglyphic legend attached to the figure, the most remarkable emblems are the disk of the sun, an eye, and the forepart of a lion. According to M. Champollion's interpretation, she is there described as: *œil du soleil, souveraine de la force, châtiant les impurs.* It cannot be doubted, but that this group and Leo of the zodiac, are merely varieties of the same ænigma. In the zodiacal emblem, it may also be remarked, that the figure of the lion is supported, and as it were backed and encouraged, by a female deity; which is evidently but an-

^w See PLATE V. No. 1. copied from Biot's sphere of Denderah; on the quadrangular monument the emblem is apparently the same, though the hinder part of the group is damaged.

^x Pl. 6. septies. See our PLATE V. No. 2.

other type of the mystical combination of the two in the monument of Champollion.

This is a noble enough symbol of the combat between the powers of light, and the typhonic influences by which they were assailed at this season; and still farther illustrates the connexion already pointed out, between the lion-headed heroine, and Chons or Hercules. He was the especial representative of the strength or prowess of the gods, whereby they subdued the giants. The lion's head was the egyptian symbol of strength.^y The war therefore between his comrade, and the giant Apoph, is quite in character. The disk of the sun on her head denotes the strength of the Sun. Macrobius, in the following passage of his Saturnalia,^z while treating of the character of the Sun in the egyptian astrological fable, appears to describe this point of physical superstition to the letter. "Ipse creditur et *Gigantes* interemisse, cum cœlo propugnaret . . . horum pedes in *draconum* volumina desinebant, quod significat, nihil eos rectum nihil superum cogitasse; totius vitæ eorum gressu atque processu in inferna mergente. Ab hac gente, *Sol* pœnas debitas vi pestiferi caloris exegit." On one of the astrological medals of the egyptian Abraxas, published by Montfaucon, we have a deity with a lion's head, armed with sword and shield; on the reverse, Γιγαντορηκτα.^a

^y Horap. i. 18.

^z Lib. i. c. 20.

^a Ant. expl. t. ii. pt. ii. pl. cl. conf. Gorkæi Dactylotheç. pt. ii. No. 364.

MESORI, (*Virgo.*)

Written by the Greeks usually *μεσορί*, sometimes *μεσωρί*,^b but by the Copts ΜΕΣΩΡΙ or ΜΕΣΩΡΗ,^c with the accent and quantity on the second syllable, denotes the month of Isis, in her peculiar and distinctive character of mother of Horus; the name being compounded of ΜΕΣ, the prefix denoting generation or maternity, and ΩΡ, the name of the deity her son; as already pointed out by the learned Rossi.^d Of the extra vowel attached, for the sake of euphony, by the Egyptians to the end of the word, we have many apposite examples; as in the name Athyr, the latter part of which, being precisely the same element as that of Messori, is written with a similar variety, Athyri; also in the names of the foregoing months, Pharmouthi, Paoni, Epiphi; and of Osiris, sometimes written Osir, sometimes Osiri, &c.^e This inclination to soften the endings of their words by the addition of vowels, is in general very perceptible in the Egyptian idiom.^f How properly this title belonged to Isis, appears farther from the circumstances, that Si-esi, or son of Isis, is in like manner the common

^b Jablonsk. Collect. voc. æg. v. *Μεσορι*. Not. Te Water ad. loc. Fabric. Menol. p. 23.

^c Tuki, loc. sup. cit. Croze Lex. in v. et Thes. epistol. pt. iii. p. 133. also ΜΕΣΟΥΡΙ, Jabl. Tuk. locc. citt. Rossi, infr. cit.

^d Etym. Ægypt. v. ΜΕΣΟΥΡΗ. Concerning the syllable ΜΕΣ as a component part in divine titles, conf. Champol. Précis, p. 188, sqq. tab. gen. No. 346, sq. Possibly the title Methuer ascribed by Plutarch (De Is. et Os. c. 56.) to Isis, may be a variety of this same Mesor; the aspirate being substituted for the sibilant, by a common antithesis. Plutarch however gives it another sense.

^e Koseg. de prisc. æg. litt. p. 37.

^f Akerblad. Lettre sur l'Inscr. de Rosette, p. 9.

epithet of Horus. His name appears written hieroglyphically, Or-si-esi, on the margin of the circular Planisphere of Dendera, immediately below the image of the mother herself, whose position among the figurative characters of that monument shall be pointed out immediately. The same epithet indeed, with the addition occasionally of the father Osiris, is an almost invariable appendage of the name of Horus in hieroglyphic inscriptions; in that of Rosetta it is never omitted, and is also very familiar in both ancient and modern egyptian literature, as a human appellation, transferred like others from the god to the mortal.^g

The Isis of the egyptian pantheon represented, in her highest and noblest capacity, the essence of the female godhead; hence, according to the principles of that system, we find her name or familiar qualities frequently mixed up or confounded with those of other lesser goddesses, Buto, Bubastis, Neit, Athor, who were in fact little more than personifications of her varied attributes. But here she appears in that character which belonged exclusively to her original and distinct person, namely, as the mother of Horus or the good genius of the earth, perpetual enemy and victor of Typhon, and other noxious influences of the physical world. This was the season in which the inundation of the river became stationary, or even beginning to subside, deposited its fertilizing alluvion on the plain; hence the probable motive of dedicating it to the parent deity of the terrestrial riches and prosperity of the land of Egypt, allegorized in the person of her son Horus.

From the remnants of egyptian antiquity may be

^g Champol. Précis, p. 180. Koseg. op. cit. p. 41.

gathered various proofs of the correctness of the above etymology, as well as of the fact, that Isis was fabled to have produced Horus at this season, in the primitive tradition. This goddess, according to the unanimous testimony of the ancients, denoted physically the earth fertilized by the inundation of the Nile; Osiris her husband, the Nile, or the inundation itself. Thus Heliodorus:^h “ Isis is mystically the earth, Osiris the Nile;” and Plutarch:ⁱ “ The Nile is Osiris, who is united with Isis, that is, the earth;” for “ the body of Isis is not the whole earth, but that portion of it which is impregnated through its coition with the Nile. The issue of this union is Horus,” the emblem of the fertility and wealth of Egypt. Isis was the primeval matter, the slime or soil, which, according to Jamblichus,^k contained in itself the generative or nutritive faculty, that is, “ the capability of receiving or containing the *river of generation*.” This river was Osiris, the male principle, and emblem of the Nile. It is impossible to overlook the evident connexion which all this establishes between Horus, the offspring of Isis, and the fertility produced by the rich alluvial deposit of the river at this season.

Some, however, have held the infant Horus and Harpocrates to be the same; and as we have already shown the latter to have been produced about the winter solstice, that opinion, if admitted, would very much interfere with our present views. I shall not attempt to go into all the details, etymological or

^h Æthiop. IX. p. 424.

ⁱ De Is. et Os. c. 38. Conf. Euseb. Præp. eu. III. c. 11.

^k De myst. Egypt. Sect. VII. c. 2, p. 150. Ed. Gale. conf. Plut. de Is. et Os. c. 53.

mythological, which offer themselves respecting the names and properties of these two figurative beings ; but merely observe, that although they were very closely connected, and, in fact, little more than two varied personifications of the same deity, it is yet very certain that there is a marked difference in their attributes, however those attributes may have been blended or confounded by superficial authors. This difference has been well pointed out by Plutarch,¹ who has given us the history of these mythological persons, both parent and offspring, in great detail, and who makes Horus and Harpocrates brothers, both sons of Isis ; the one born during the life of Osiris, the other after his death ; which corresponds exactly to our account of the matter. Osiris, as the living husband of Isis, was the Nile in all its glory at the inundation, when Horus was born ; Osiris dead is, as we have seen, Osiris at the winter solstice, when the Nile was nearly at the lowest, and when, as we have shown in our account of that season, Harpocrates was born. The last is said by Plutarch^m to have been produced “ out of season, and mutilated in his lower members.”ⁿ The other is called by the same author “ Horus, symmetrical and perfect.”^o Here we find an equally positive and apt allusion to their two characters, according to the two seasons. The emblem of the deity at the winter solstice was represented mutilated, because of the defective state of the river, besides the figurative lameness or em-

¹ De Is. et Os. c. 19. Conf. Young, Art. Egypt. p. 46.

^m De Is. et Os. cc. 19. 54. 65.

ⁿ Hence the admitted etymology of his name, Har-poch-rat, Horus lame in the foot. Jablonski, Pânth. T. I. p. 246, sq.

^o Op. cit. c. 55.

barrassment of the course of the sun at that season. The perfect season, represented by a perfect emblem, was the full inundation of the Nile.

Plutarch, having informed us that Horus was the issue of the connexion between Osiris and Isis at the inundation, continues : “ But this Horus is the preserving and nourishing property of the atmosphere, fostered in the marshes about the city of Buto, because the land, flooded and irrigated, chiefly emits those vapours which are opposed to the influences of drought and aridity.”^p These last were the Typhon, against whom Horus waged war. “ By Typhon,” says the same author,^q “ they signify every thing dry or fiery that promotes aridity, or is opposed to moisture ;” and accordingly in another place,^r he states, that “ Isis nourished Horus with exhalations and vapours, whereby gaining strength, he was enabled to obtain the mastery of Typhon.” Here then we have Horus, born when the inundation was at its height, nursed and fostered among the vapours which rose from the water, gradually subsiding and retiring from the land. Hence it is that the infant deity is so often represented sitting on a lotus flower, the hieroglyphical emblem of the season of his childhood ; and possibly the juvenile figure, which, as we have above noted, is an attendant of Libra or Thot on both funereal and astronomical monuments, may contain an allusion to the childhood or fostering of Horus during the month of Thot, the season of opening vegetation.^s

^p C. 38.

^q C. 33. Conf. 39.

^r C. 40.

^s In the Egyptian hieroglyphic vocabulary, the idea *child* is represented by a small crouching human figure, with its hand raised to its mouth. The propriety of this symbol will be evident to those who have been

Nigidius, an old roman commentator of the egyptian sphere, gives us to understand, as quoted by Servius,^t that Horus was born or nursed under the sign Virgo, which corresponds to this month in our calendar. The symbol so called by the Greeks, there can be no doubt, as observed by Eratosthenes and others,^u originally represented Isis, Ceres, or Demeter, being a female figure holding ears of corn in her hand, which can apply to no other personage of the greek pantheon; whence the name of the most celebrated star of this constellation, Spica virginis. The constellation Virgo of the greek sphere is of considerable extent, and may, in fact, be divided into two, Virgo and Spica virginis; as the Arabs call the whole indiscriminately by both names. But on the greco-egyptian sphere of Denderah, the usual zodiacal sign of Virgo, namely, a female figure bearing an ear of corn, is somewhat confined; immediately below it, however, is another large female figure, sitting on a throne, holding a new born infant on her lap; the whole precisely similar to the group of Isis in her character of mother of Horus, so common on medals, gems, and other monuments.^v This group is evi-

in the habit of observing new born infants, with whom this is a common and favourite attitude. The infants Horus and Harpocrates were accordingly both so depicted; and this seems to be the whole claim of the latter to the mystical character of god of silence, with which the later greek and roman mythologists have invested him, and which has become with modern illustrators of egyptian fable, his chief title to celebrity.

^t Ad. Virgil. Georg. I. 19.

^u Eratosth. Catast. IX. Sphær. Empedoc. v. 10. apud Fabr. Bib. gr. L. II. c. 12. Fest. Avien. Phænom. v. 282.

^v Montf. Ant. expl. T. I. Pt. II. Pl. xxxviii. lib. vi. c. 4. Descript. de l'Égypte. Antiq. vol. I. Pl. xxii. xcv. xcvi. and *passim*. Zoëg. Num. æg. Mus. B. No. 96. p. 108 note, p. 134. Conf. Rasch. Lexic. rei num. Tom. IV. p. 976, v. Isis.

dently connected with the circle of the zodiac itself, on the boundaries of which it encroaches, close to the figure holding the ear of corn.^w The whole, therefore, may be considered as emblematic of the complete constellation, Virgo and Spica virginis of our globes. The mother with the new born child is Messori. This was also the view taken of the meaning of this group by Mess. Jollois and Devilliers, in their excellent and comprehensive memoir on the greco-egyptian zodiacs, inserted in the collection of the Description de l'Égypte.^x The same sitting figure with the infant, they observe, was, though nearly effaced, distinguishable on the greater zodiac of the portico of the same ruins. On the persian sphere, as given by Scaliger,^y we find in this sign “a beautiful young woman, with long hair, bearing two ears of corn in her hand, sitting on a throne, and tenderly fostering an infant.” And the same was gathered by Selden^z and Kircher^a from Arabic or rabbinical authorities, who, after old egyptian astrologers, describe the sign in precisely similar terms. Among the relics of egyptio-gnostic supersti-

^w See PLATE V. No. 3. These figures are copied from the sphere as engraved under the auspices of M. Biot, Recherches, &c. Pl. dern. The dotted segments of circles represent the two tropics and the equator, the oblique line the ecliptic, upon his projection. The most easterly portion of Leo's snake appears above the head of the mother and child.

^x Antiq. Mém. T. I. p. 492.

^y Comm. in Manil. Astron. p. 377.

^z De Dis. Syr. Synt. I. c. 2. p. 30. Ed. 1681: who has preserved some curious notices of this symbol, tending to show how familiar it was in the lower and middle ages, having been identified at a very early period with the group of the Virgin and child, the favourite object of roman catholic adoration; a notion adopted among others by Roger Bacon, in his letter to Clement IV.

^a Œdip. Ægypt. vol. III. p. 203. Conf. Jollois et Devill. Mém. sup. cit. p. 448 sqq. Pl. A.

tion given by Montfaucon,^b we find a gem containing a female figure sitting on a cloud nursing an infant, and holding ears of corn in one hand ; on her forehead a star ; the whole no doubt emblematic of this season, or Messori.

The ingenious french memorialists above noticed were led by their analysis of the monuments which form the subject of their dissertation^c to conclude, that Virgo of the egyptian sphere originally consisted of two different constellations ; the one represented by the goddess of harvest or productiveness,^d the other by Isis nursing Horus ; which two asterisms were confounded into one in the sphere of the Greeks. These judicious remarks, which I quote in corroboration of my own opinion with the greater satisfaction, that having been made without reference to any system, they are beyond the suspicion of partiality, appear to be confirmed, not only by the evidence of the greco-egyptian monuments, but by that of the astronomical picture of the theban tomb. In it, as we have formerly remarked, are two processions ; the one, whose leader bears an ear of corn or something similar, we have above conjectured to be indicative of the position of Spica, between Leo, and Libra or Thot. The other procession occupies an exactly parallel position on the opposite side of the picture, and is apparently a mere duplicate of the first, with this exception, however, that while its leader wants the distinctive mark of the ear or branch, the principal feature of the hieroglyphic inscription appended, and substituted, as it were, for the Spica, is a new-

^b Ant. expl. T. II. Pt. II. Pl. civiii. See our PLATE V. No. 4.

^c Jell. et Devill. Mém. sup. cit. p. 452. ^d See Appendix, No. XIX.

born infant. It has already been remarked, that in this monument the signs are not arranged in their usual order, being apparently discomposed and varied for some mysterious purpose. Yet it were reasonable to conclude, that these two figures are symbolic of the sign of this season in a twofold capacity, as at Denderah, and according to the form which the french essayists have assigned it on the pristine egyptian sphere.

SECTION IV.

CONCLUSION OF THE SAME SUBJECT.

THE foregoing analysis of the names and characters of the individual months has, I trust, been sufficient to justify the reasonableness of our primary hypothesis, grounded on the internal evidence of their hieroglyphic symbols, that the year to which they were originally adapted commenced in autumn, and that this pristine arrangement of the civil calendar coincided with that of the signs of the zodiac, or corresponding divisions of the astronomical calendar. I shall now add a few remarks on these months in general, more especially on those whose positions stand in immediate relation to the cardinal points of the tropical year, in order still farther to show the appropriate nature of their astronomical emblems, as well as of the proper feasts assigned to each with respect to their positions.

Thus we find that the first month, or Thot, being fixed to the season of the year when night obtained the ascendancy of day, the symbols of its patron deity chosen to represent it were not the most com-

mon or familiar, but such as appeared to belong to him more especially in his character of minister of Osiris, and superintendent of the transmission of souls from the upper to the lower regions, in conformity with the admitted principle of a connexion or analogy between the egyptian fable relative to the celestial spheres and that concerning the regions of departed spirits. Another obvious motive for adopting by preference the scales as the symbol of the month of Thot, would be the very palpable allusion it contains to the balance of day and night at the equinox. The position and rites of the month Athyr, as regards the deity to whom it was dedicated, and the emblems by which it was represented, have been amply illustrated above. The equinoctial month Phamenoth was dedicated to Ammon, or Amon-ra, whom egyptian mythologists agree^a in supposing to have been a personification of the Sun, more peculiarly at the vernal equinox, in the character where he finally triumphs over night, and reassumes his ascendancy in the hemisphere. Again, the month succeeding the solstice we find devoted to the Sun himself simply, for reasons already assigned. And here it will be remarked how appropriately the season chosen for the mournful rites of their astrological mythology was that which *preceded* the winter solstice, because those lamentations, as we have seen, were only in character during the visible decline of the solar orb; after he became stationary, or began to reascend, all cause of grief or fear was at an end. But the proper month of the Sun was that which *succeeded* the summer solstice, because, as it is well known, the god previous to that period does not attain his

^a Jablonsk. Panth. lib. ii. c. 2, § 5, part 1, p. 166, sq. Champol. Panth. pl. 2.

greatest power, nor the inundation, supposed to depend on his influence, any considerable height.

All this will be found in close harmony with the assertion of Porphyry, Proclus, and others,^b that the more important signs of the egyptian zodiac were nothing more than figures of the influence of the sun in various parts of his orbit. The substance of their statements is condensed into two verses of an epigram, which, though attributed by Macrobius^d to the oracle of Apollo Clarius, is evidently a fragment of the gnostic or basilidian school of mystics, usually called christian heretics, but who may more properly be considered a pagan sect, their doctrines being a fanciful combination of those of the various religions in vogue under the roman empire, among which were, as might be expected, many borrowed, or rather corrupted, from both judaism and christianity. But the sect originated in Egypt, and the basis of its mysteries was the ancient paganism of that country, as is clearly evinced by the character of the devices which occur on the gems and other extant relics of their superstition.^e Their principal deity was the Sun, typified by various monstrous symbols, partly derived from the egyptian pantheon, partly the pure fruit of gnostic imaginations. These are usually accompanied on the monuments by greek or coptic inscriptions, containing

^b Porph. in epist. Jambl. myst. præfix. et ap. Euseb. Prep. ev. p. 198, C. Ed. Par. 1628. Proclus, in Tim. Plat. p. 33, Ed. Bas. 1534, conf. Jablonsk. Panth. lib. ii. c. 2, p. 157, sqq.

^c This receives light from the etymology of the egyptian word Rompe, Year; ΡΩ'Μ'ΠΕ, *Face of the heaven*; which shows the intimate connexion between the ideas *year* and *zodiac*, and consequently *month* and *sign* in the infancy of these institutions.

^d Sat. lib. i. c. 18.

^e Vid. Montfaucon. L'antiq. expliq. tom. ii. pt. 2, p. 353, sqq.

the names^f Phre, Chnoubis, Thoout, but most frequently Abraxas,^g or Jao, which last is the mysterious subject of the following ode :

Φράζω τὸν πάντων ὑπατον θεὸν ἔμμεν' Ἰάω,
 Χείματι μὲν τ' Ἀΐδην, Δία δ' εἵαρος ἀεχρομένοιο,
 Ἡέλιον δὲ θερέυς, μετοπάρου δ' ἀξρον' Ἰάω.

“ Know that Jao is the supreme god, in winter Hades or Pluto, in the opening spring Jove, the Sun in summer, in autumn the tender Jao.” Here we have the deity of the seasons, in winter in a character corresponding to that of Horus in the month Athyr his subterranean dwelling place, or of Osiris when lost at the solstice. In spring he is Jove or Ammon, the Ram-god of the month Phamenoth, or the vernal equinox. In summer the sun himself, or the Scarabee

^f Montfauc. lib. cit. pl. cxlix.

^g This word Abraxas, or Abrasax, may be considered as the principal and ordinary proper name of the basilidian Sun-god, to which the others were frequently added as titles or epithets; and its sense (in addition to the evidence derived from the astrological character of all the monuments of the sect) shows that their whole superstition was founded upon the mysteries of the egyptian calendar, Abrasax being composed of the six letters which represent the number of days in the egyptian year :

A	1
B	2
P	100
A	1
Σ	200
A	1
Ξ	60

365

Vid. auct. ap. Montf. op. cit. p. 355, sq. Jablonsk. Diss. de nom. Abraxas, §§ 9, 12. Opusc. t. iv. p. 96, sqq. Michaelis supposes this name to be older than the days of the Basilidians, and of pure greco-egyptian, pagan origin. (Apud Te Water, not. ad Jablonsk. lib. cit. p. 80.) Jao is the sacred hebrew tetragrammaton, adopted among other titles of the deity by these mystics.

of Paoni the month of the sun. Why Autumn should be attributed to *Jao properly so called*, is not so clear; but the epithet ἀξέρος, apparently allusive to the luxuriant bursting vegetation of the season, seems to indicate that the whole figure refers to the climate of Egypt, where alone such a description of autumn would be in character; and probably to the birth and infancy of Horus in the months of Messori and Thot.

In an equally appropriate manner we find that Thot, as the patron or author of all literary or scientific discoveries or institutions, is placed at the head of the civil calendar, fabled his own peculiar invention; while Ammon, the greatest and most glorious of the popular divinities, takes precedence in the mythological calendar; where he also appears attended by his chief favourites or companions in the pantheon; for M. Champollion,^h it seems, has identified among the monuments of Thebes three principal divinities, almost invariably connected in office or in attribute, whom he therefore calls the theban triad or trinity, Ammon, Mouth, and Chons; now in our calendar we have found these very three divinities following each other in regular succession, in the months and signs of the zodiac; Phamenoth, Pharmouthi, Pachons.

All these coincidences form a mass of circumstantial evidence in favour of the system here proposed, which may be the result of chance; but if so, it must be admitted to be a chance of a very extraordinary and unaccountable nature.

We shall now devote some little attention to a

^h See Letters from Egypt, No. 7, in Lit. Gaz. Feb. 28, 1829, p. 146. No. 14, in Lit. Gaz. Nov. 14, 1829, p. 745; Nov. 21, p. 672.

question already noticed in a former page, as being to a certain degree connected with our present subject, namely: whether the form of calendar, and the combination of symbols, which we have just been examining, were originally adapted to the ancient year of three hundred and sixty days, or to the reformed year of three hundred and sixty-five. Upon this point I shall not presume to express a decided opinion, but content myself with offering such observations as occur with respect to either view of the subject, in the shape of conjecture merely; for to such all our endeavours to throw light on so very obscure and doubtful a matter, concerning which we have no satisfactory historical data, must ultimately be reduced.

I. We have already remarked,ⁱ that a considerable degree of plausibility attends the opinion originally advanced by De la Nauze, and adopted by many other chronologers, that the reform of the calendar coincided with the commencement of a Sothiac cycle, and as they have supposed, of that of 1322 B. C. Admitting its correctness; since the Thot, or first day of the Egyptian year of three hundred and sixty-five days, would, upon their hypothesis, have originally been appointed to the twentieth of July, in order to find a year whose Thot was fixed to the autumnal season, we should be obliged to go back to the more ancient mode of reckoning. Some authors, indeed, have been of opinion, that the zodiac must necessarily at its original

ⁱ Supra p. 15. Those who are inclined to assign a more extensive antiquity to the chronological science of the Egyptians, will observe, that these remarks apply, for the most part, equally well to any other previous cycle; although, for the sake of arrangement, and consistently with my own view of Egyptian history, I have adopted as their basis the cycle of 1322.

institution, have been adapted to the year of 360 days, from the correspondence of the number of these days with that of the degrees of the ecliptic ; but if so, we can hardly doubt but that the Egyptians, if they used this form of year in conjunction with their zodiac, during any considerable time, were careful to keep its commencement more or less accurately to the seasons, by some rude method of intercalation, perhaps by the addition of a supplementary month from time to time ; as a substitute for which mode the five epagomenæ were afterwards permanently added ; otherwise the rapid fluctuation of the seasons would scarcely have admitted of the twelve months bearing even a remote correspondence to the twelve signs, beyond the period of a single year. That such was really the case seems to be implied in the tradition,^k that the ancient egyptian sovereigns, after the final establishment of the calendar, were obliged to swear at their consecration, that they would neither intercalate *month, nor day* beyond the five appointed by law. What degree of authenticity this tradition may possess, I shall not venture to decide ; but it certainly derives an air of probability, from the congeniality of such a practice with the habits of a bigoted and superstitious people, strongly attached to existing customs, and who, having already submitted to one important alteration in their method of computing time, were averse to any more such innovations. Admitting its validity, as the greater number of chronologers have done ;^l it must be obvious, that

^k Ap. Scholiast. in Germanic. v. 284.

^l Among others, Fréret, Déf. de la Chr. p. 395 ; who however, to serve some particular system, supposes that the sovereigns subjected to this ordinance, were not those of the old dynasties, but the native princes,

the expression month or day could have little meaning, unless we suppose, that the Egyptians in remote ages really had been in the practice of intercalating months, as well as days; had such a practice been totally unknown, it is not likely that it would have been thus specifically guarded against; and if it be admitted to have existed, it can be referred to no other than the year of three hundred and sixty days.

II. On the other hand, we might suppose with Jackson,^m that the Thot of the reformed calendar was originally fixed at the autumnal equinox; from whence gradually retrograding, it coincided with the heliacal rising of Sirius on the twentieth of July of the year 1322;ⁿ which coincidence being observed and recorded as a remarkable epoch, became the standard for regulating the proportion between the length of the civil and tropical year, and consequently the calculation of the cycle of 1460 years. There is unquestionably a considerable deal of speciousness attached to this view of the matter; for the date of egyptian history, to which it would refer both the institution of the new form of year, and probably the final arrangement of the corresponding points of the zodiac, namely, the early part of the eighteenth dynasty, is not only a brilliant and flourishing period of the mo-

who reigned during the short intervals of freedom which occurred after the first subjection to the Persians; the priests being afraid, that the intercalation of months in use among their oriental oppressors, might be forced upon themselves. This hypothesis however rests on no authority, and is in itself extremely improbable; as there is no ground of belief that any attempts were made, either by the persian or native princes in later times, to innovate on this department of the national institutions. Such partial interpretations, of allusions made by authors generally to the customs of the ancient Egyptians, cannot be admitted unless upon very strong evidence.

^m Chron. Ant. vol. ii. p. 7. conf. supr. p. 16.

ⁿ See Append. No. XX.

narchy, but precisely that when the nation, not long after the expulsion of the Shepherds, being restored to its independence, may be supposed to have reorganized and consolidated all its civil institutions, and from whence it appears to have made new and rapid strides in all the arts and sciences; a vast proportion of the splendid works of architecture, sculpture, and painting, the remains of which still adorn the banks of the Nile, being monuments of the magnificence of the distinguished family of princes, who then sat on the throne of the Pharaohs. Upon this principle, it were not difficult to ascertain the date of the original coincidence of the month Thot with the sign of Libra. For the first day of the calendar of 365 days, if fixed to the autumnal equinox, would have retrograded between the year in which it was so fixed and the 1322 B. C., as many days as intervene between that on which the equinox fell on the former year, and the 20th of July of the latter year. These days multiplied by four, would therefore give us, on the principle of calculation formerly noticed, the number of years of interval between the two dates.^o The autumnal equinox in the seventeenth century B. C. fell on the 8th of October; between which day and the twentieth of July are 80 days, which, multiplied by four, produce 320; and these, added to 1322, would give 1642 B. C. as the epoch of the establishment of the year of 365 days. We have seen already, that the accession of the eighteenth dynasty fluctuates in the chronology between 1668 and 1748 :^p suppos-

^o Supr. p. 30. conf. Append. No.

^p Supra, p. 3, sq. Professor Heeren (*Ideen über den Handel, &c. der alten Welt*, ii. Th. ii. Abth. s. 310) has also been led to place the probable date of that event between 1600 and 1700 B. C., by a collation

ing it to have taken place in round numbers about the 1700, we should have the final arrangement of the calendar not many years afterwards; an hypothesis which, as already observed, is sufficiently plausible, and consistent with the general tenor of the history of egyptian civilization.

III. This inquiry necessarily involves to a certain extent a much agitated chronological question, namely, the period of the jewish Exodus. To enter at length upon that point, would lead into a maze of controversy which I am here anxious to avoid. We shall therefore be contented to bestow upon it one or two brief observations. Josephus informs us that the hebrew year, previous to the departure from Egypt, commenced in autumn; and his evidence is fully corroborated by the testimony of scripture. The words of Josephus are as follows, in speaking of the flood: "This calamity," says he, "happened in the second month, which is called by the Macedonians *Dius*" (November),¹ "but by the Hebrews *Marsewan*; for so they reckoned their months in Egypt. But Moses ordained that *Nisan*, which is *Xanthicus*" (April), "should be the first month in respect to religious rites, as in it he brought the Hebrews out of Egypt. But although this was looked upon as the first of the year in every thing relating to divine matters, yet with respect to buying, selling, and all civil transac-

of the general details of egyptian history, though upon principles different from those here laid down. Jackson (*Chron. Ant.* p. 193) places it in 1722. Hales (*Anal. of Chron.* vol. iv. p. 418) in 1648. My reasons for rejecting the system of M. Champollion Figeac, which carries the eighteenth dynasty much farther back, have been given, in part at least, in my *Brief Remarks on the chronology of the egyptian dynasties*.

¹ *Usser. de Maced. ann. sol. c. iv.* Ideler, *Untersuch. über die astr. Beob. &c.* s. 246.

tions, the ancient mode of reckoning was retained." Of the correctness of this statement of Josephus, it is not necessary to say much, as it has been generally admitted by both chronologers and theologians;^r being confirmed by the testimony of Moses himself in various passages of his works. Now, consistently with what appears to me the most correct view of the connexion of sacred and profane chronology for this period, (an opinion not hastily adopted, but resting on solid reasons derived from the comparative history of the two nations, which this is not the place to develop), the Exodus ought not to be dated much earlier than about the commencement of the sixteenth century before our æra. If therefore the Jews then used a year commencing in autumn, in conformity with the practice of the country, it must have been the ancient form of year of 360 days; as the Thot of the year of 365 days, supposing it to have been already in use, would then have fallen considerably above a month prior to that season. Some chronologers however, who place the Exodus much earlier, have been of opinion, that the new-year's day of the Jews fell on the autumnal equinox, merely in consequence of the Thot of the egyptian year, which they had hitherto used, happening to coincide

^r M. Ideler (*Techn. Chron. Bd. i. s. 493*) indeed appears to doubt this, and, in as far as I know, is the first chronologer who has ventured to do so; but I have not been able to discover the slightest reasonable ground for his scepticism. Matters of this kind are seldom capable of mathematical proof; but if the united testimony of trust-worthy authors and reasonable tradition justify the admission of a fact, there can be no solid reason for impugning the correctness of the statement of Josephus. See, among others who have examined this point, Scalig. *Can. Isag. p. 284.* Meyer *de temp. sacr. part. i. c. i. ap. Ugolini. Thes. ant. sacr. tom. i.* Fréret, *Déf. de la chron. p. 402, sqq.* Jackson, *Chron. Ant. vol. ii. p. 16.*

with the same season at the period of their departure from Egypt, and on this basis have attempted to calculate the date of that event. Neither the words of Josephus, however, nor the general tenor of biblical tradition, seem to be in favour of such an hypothesis ; nor, if we admit their authority in this matter at all, ought we reasonably to limit their evidence with respect to the ancient patriarchal new-year's day to the mere observation of a temporary and accidental coincidence. The more ancient tradition of the Jews, indeed, referred the origin of this primitive calendar to the creation itself,^s which they supposed to have taken place in autumn ; and that the pristine egyptian mythology corresponded here also to a certain extent, I see little reason to doubt, as it is an admitted fact, that the egyptian cosmogonists followed the mosaic principle of creation, namely, that of a chaos or flood of waters, which gradually subsiding, caused the dry land to appear. It is also certain that they connected this tradition, and very naturally, with the subsiding of the flood of their own river, which both displayed to view, and renovated with fresh vegetative power, the land of Egypt. There are, it is true, various passages of popular authors, as of Porphyry, Macrobius, Julius Firmicus, and others, which refer the creation of the world, according to the Egyptians, to about midsummer. But there is reason to believe that these statements are merely grounded on the knowledge that the revolution or ἀποκατάστασις of the sothiac cycle, (and with it the proper commencement of the egyptian year in its more recent form,) was connected with that season. Of this the very vagueness

^s Vid. Scalig. de Emend. temp. p. 345, sq. Can. Isag. p. 284, conf. Calmet, Dict. de la Bib. vv. Année, Monde.

and discrepancy of the statements themselves afford strong proof. With Porphyry, both the creation and the commencement of the egyptian year took place in Cancer, *because the Dog-star was situated in or near that constellation* ;^t which expression can only be understood as alluding to the circumstance, that this star, during the whole period of its connexion with the egyptian year, rose heliacally in the latitude of Egypt, when the sun was in the sign Cancer. Of the value of the testimony of Porphyry in this instance, we may judge by his assertion, contained in the same passage, that the roman year dated from the sign Aquarius, whereas it commenced nearly with Capricorn. Macrobius^u places the creation, according to the Egyptians, in the sign Leo, apparently on a precisely similar principle, because the reappearance of Sothis in his age and climate coincided nearly with the entrance of the sun into the Lion. As for Julius Firmicus,^v whose works appear to contain considerable traces of the pure egyptian astrology, in one place he seems to agree with Macrobius, where he states, that the *world* was created in the forty-fifth day after the solstice, that is, in the middle of the sign Leo ; but in another place^w he informs us, that the *earth* was finally arranged and ordered in the latter part of the sign Libra, which is more favourable to our hypothesis. The apparent contradiction between the two passages may be reconciled, either upon the principle that the egyptian mythologists made a distinction between the creation

^t De Antr. Nymph. p. 265. Ed. Cantab. 1655.

^u Somn. Scip. i. c. 21.

^v Astronom. lib. iii. c. 1.

^w Lib. viii. c. 3, conf. Scalig. ad Manil. p. 32. De Emend. Temp. p. 346.

of the world or universe, and the formation of our habitable terrestrial globe; or by supposing, what is perhaps more probable, that the one tradition refers to the more recent, the other to the ancient calendar.*

Although the old jewish cosmogonists placed the creation of the world in autumn, yet there were not wanting some among the rabbis^y who assigned it to spring. And it is curious enough, that the argument advanced by the authors of the new system tends to prove, that the other opinion was connected with egyptian tradition; because, say the new school, and plausibly enough, it is not probable that the creation should coincide with the decline or fall of the year, but rather with the opening season.^z Now, this very motive would lead the egyptians to place both the creation and their new-year's day at the autumnal equinox, which was in their climate the opening season or natural spring, as March and April were in Palestine.

IV. The evidence of the monuments, which are, no doubt, the most valuable guides in egyptian research, might perhaps assist our inquiries into the period of the first establishment of the year of three hundred and sixty-five days. We have seen above, that, in the very ancient papyri, whence M. Champollion has derived his hieroglyphic calendar, the sign of *month* is merely an inverted half-moon, as described by Horapollo. But in the Rosetta inscription, and

* M. Champollion asserts, (Panth. pl. 2,) that, according to the egyptian cosmogony, the world was created by Ammon at the vernal equinox. He has not, however, produced any authority for that statement, nor am I aware that any exists.

^y Vid. Scalig. de Emend. temp. p. 345, sq.

^z Scalig. loc. sup. cit. Philo Jud. de Septen. et fest. p. 1190.

other monuments,^a which have served as authorities for the calendar of the Cairo collection, we find a star, in addition to the original symbol, forming portion of the group. Whether this peculiarity be confined to inscriptions of a later date than 1322, or to those of any particular period whatever, we have no means of judging; but the additional mark itself can hardly refer to any thing else but the connexion of the calendar with some star, and that star cannot well be any other than Sirius. This emblem may have been attached to the seasons at the reform of the calendar, to denote that the length of the year was in future to be regulated by the supposed motions of the stars, more especially of Sirius; not of the moon, as in former times. Might not this be alluded to by an obscure remark of Horapollo,^b contained in a passage, part of which has already been quoted, where that author appears to state, that the Egyptians denoted a year, among other symbols, by the *star Isis*, or *Sothis*: Ἐνιαυτὸν δὲ βουλόμενοι δηλῶσαι, Ἴσιν, τοῦτ' ἔστι γυναῖκα ζωγραφοῦσιν τῷ δὲ αὐτῷ καὶ τὴν θεὸν σημαίνουσιν. Ἴσις δὲ παρ' αὐτοῖς ἔστιν ἀστὴρ, αἰγυπτιστὶ καλούμενος Σῶθις, ἑλληνιστὶ δὲ ἀστρὸκύων, ὃς καὶ δοκεῖ βασιλεύειν τῶν λοιπῶν ἀστέρων . . . ἔτι δὲ καὶ διότι κατὰ τὴν τούτου τοῦ ἀστρου ἀνατολὴν σημειούμεθα περὶ πάντων τῶν ἐν τῷ ἐνιαυτῷ μελλόντων τελεῖσθαι· διόπερ οὐκ ἀλόγως τὸν ἐνιαυτὸν Ἴσιν λέγουσιν. “ When they would denote a year, they draw Isis, that is, a woman, as they also represent the goddess; but Isis is a star, called in egyptian Sothis, in greek Dog-star, which appears to reign over the other stars . . . also because, by observation of this star, we prognosticate

^a Young, Suppl. to Encyc. Brit. art. Egypt, plate 77, No. 179. *Materia hierogl. Cairo.* pl. 6.

^b Hierogl. l. i. c. 3.

all that is to take place during the year. Hence it is not without reason that the year is called Isis."

But at whatever period, or under whatever circumstances, this primeval coincidence of the egyptian new year's day with the sign Libra may have taken place, the question may perhaps occur, how came the zodiacal signs which were originally attached to the twelve months to remain fixed, when the positions of the months with respect to the seasons underwent an alteration? and why, if it was originally meant that a connexion should subsist between the civil and the astrological calendar, was that intention so completely lost sight of? These and other questions of a similar nature, our imperfect acquaintance with the early history of egyptian science puts it out of our power to answer; it is sufficient to be able to judge, on plausible grounds, that such was the case. The twelve months even with the epagomenæ were soon found to be imperfect, but the division of the heavens into twelve portions of thirty degrees each, was found to be very perfect, and highly conducive to the facility of computing time, and of observing the heavenly bodies. The imperfection of the one system was no reason for abandoning the other; on the contrary, the effects produced by the separation of the two on the national superstition were in close harmony, as we have shown above, with the proverbial taste of the egyptian priesthood for mystery and enigma. If we admit the opinion of De la Nauze respecting the first establishment of the year of 365 days, we should be equally at a loss to know the precise motive which induced them to date its commencement, not as before from the equinox, but from the rising of the dog-star; or why,

in fixing the Thot to the period of the rapid rise of the Nile, they should have retained, as its hieroglyphic, a symbol denoting the subsiding of the waters, which necessarily produced a corresponding irregularity throughout the remainder of the calendar ; but that it must have been so is obvious. The best method of throwing light on any obscure matter of this kind is by analogy ; and we should have one of a very curious nature in the history of the roman year, the first day of which was fixed, in early times, on or about the vernal equinox, March being the first month, and February the last ; whence the seventh, eighth, ninth, and tenth, were called September, October, November, December ; their names in the latin tongue literally denoting their places. Subsequent alterations, the details of which are almost as doubtful as of those which took place in the egyptian calendar, caused these months to become the ninth, tenth, eleventh, and twelfth ; yet they still retained their former names, which does not seem to have shocked the delicate ear of the latin grammarian, though quite as great a paradox, in point of idiom, as would have been the retaining the hieroglyphic of vegetation for the month Thot, after it was become the season of the full flood of Nile. The incongruity between the emblems of the months and their new positions in the egyptian year was, it may be farther observed, by no means so striking in the eyes of the vulgar, as that between the names of the roman months and their new position in the roman calendar ; for the pure hieroglyphic, which alone preserved the original type or symbol, was appropriated to the sacred records and the use of the priests ; and the existence of this very anomaly, com-

bined with the knowledge of its real cause, would add to their stock of mysteries. On the other hand, in the enchorial character, which was alone in popular use, the original form had totally disappeared, or degenerated into a mere sign,^c denoting with the vulgar nothing more than the simple names, Thot, Paophi, &c. The new calendar being too, after all, defective, and the months in a short time discovered to be still unsettled, the impropriety of the emblems, according to the new positions, would soon have become of little importance. When we find such strange anomalies, during the most civilized period of the egyptian empire, sanctioned both by custom and law, we can feel the less surprised at any others of a similar nature which may present themselves, in the course of our investigations into the chronology of its remote and obscure ages.

We shall now willingly take leave of these dark and intricate matters, all attempts to elucidate which can only end in conjecture of a sufficiently vague and unsatisfactory nature, and extend our observations to the history of the first introduction and use of the zodiac among the Greeks.

^c Vid. Kosegart. de prisc. Ægypt. lit. p. 50, tab. E. F.

SECTION V.

REMARKS ON THE FIRST INTRODUCTION AND USE OF
THE ZODIAC AMONG THE GREEKS.

THE inquiry to which the present section is devoted, though belonging to a department of critical research, of a somewhat different nature from that in which we have hitherto been engaged, is yet closely connected with our previous subject in more ways than one. First, from the interest we may naturally take, in following up our endeavours to investigate the remote origin of this celebrated institution, by tracing its progress across the mediterranean, and adoption by the most anciently civilized people of the western world; from whom its use has been propagated among almost all the nations of modern times, who have paid any attention to astronomical science. Secondly, because several authors of eminence having been of opinion, that the zodiac is of hellenic rather than egyptian origin; others, that its constellations in their present form, as delineated on our globes, were familiar at least to the remotest ages of fabulous greek antiquity; and having made these opinions, respectively, the basis of their endeavours to illustrate

its history, and of conclusions widely discrepant from those to which we have been led by the foregoing researches,—it becomes of importance to investigate, on this head, as much of the truth as the nature of existing testimonies will permit.

A careful examination of the comparative history and antiquities of the two countries, has led me to the conviction, that the accounts of the direct importation of egyptian science into Greece during its heroic ages, by colonies transplanted from the banks of the Nile to the coasts of the Ægean, are destitute of any reasonable probability. Still less credible are the legends of the voyages up the Nile, undertaken by the early sages of barbarous Hellas, the purely mythical Orpheus, Musæus, Triptolemus, or the semi-historical Homer,^a Hesiod, Lycurgus, and their initiation into the mysteries of the priests of Heliopolis or of Thebes. The first real connexion between the two countries ought to be dated from the reign of Psammetichus, who overcame or violated the ancient prejudices of his subjects, and admitted the Greeks freely to the interior of the country, as visitors, as settlers, or as mercenaries. From this period we can first trace historically the direct and positive influence of the manners and mythology of Egypt, on those of their european neighbours. The force of early association will perhaps raise up difficulties against the admission of this as a general rule, nor is this the place to support it by any lengthened argument; but in as far as our present question is immediately concerned, it will be found I trust nearly capable of demonstration.

Although the early poets of Greece, during many

^a See Appendix, No. XXI.

ages the only authors she possessed, make frequent allusion to the heavenly bodies and their motions, both as connected with their mythology, and as serving as guides to the rustic in his labours, or beacons to the navigator in his course; and though they seem to have been in the habit, like all other barbarous nations, of combining certain remarkable stars into constellations, with names significant of their forms, positions, or supposed influences; it will be remarked, that among these names, those of the signs of the zodiac never occur. Yet it were natural to infer, had they been known, as has been so often gratuitously supposed, long before the trojan war, that they might have been considered by Homer, Hesiod, and other old poets, (as they ever have been since they became familiar,) among the most important, and most worthy of notice, whether in an astronomical or poetical point of view. Homer says that Vulcan, among other decorations of the shield of Achilles, distributed around its circumference all the images which adorn the heaven:

Ἐν μὲν γαῖαν ἔτευξ', ἐν δ' οὐρανὸν ἐν δὲ θάλασσαν,
 Ἡελίον τ' ἀκάμαντα, σελήνην τε πλήθουσαν,
 Ἐν δὲ τὰ τεύχεα πάντα τά τ' οὐρανὸς ἐστεφάνωται.^b

After this, although we could hardly expect him to give us a literal catalogue of all the constellations, yet one might reasonably suppose that in mentioning the most remarkable, he would not overlook the twelve celebrated emblems of the zodiac, or at least the noblest and most poetical among their number, had he known them; but he continues:

^b Il. σ. v. 483. sqq.

Πληιάδας δ' Ὑάδας τε, τό τε σθένος Ὠρίωνος,
 Ἄρκτον δ', ἣν καὶ Ἀμαξίαν ἐπίκλησιν καλέουσιν,
 Ἡτ' αὐτοῦ στρέφεται καὶ τ' Ὠρίωνα δοκεύει.^c

and elsewhere he mentions ὄψε δύνοντα Βοώτην,^d and the dog-star,

Ὅν τε κύν' Ὠρίωνος ἐπίκλησιν καλέουσιν.^e

and the planet Venus, sometimes as the morning-star,

Ἐωσφόρος εἴσι φάως ἑρέων ἐπὶ γαῖαν.^f

sometimes as the evening star :

Ἐσπερος ὃς κάλλιστος ἐν οὐρανῷ ἴσταται ἀστήρ.^g

Here indeed we have the Pleiads, and Hyads, portions of the Bull's head and neck, but no allusion to the λασιάυχονα ταύρον himself; no παρθένον αἰδοίην, no αἰθωνα λέοντα, no

Κάστορά δ' ἱππόδαμον καὶ πύξ ἀγαθὸν Πολυδεύκεια,

although each of these heroes or animals furnishes material, upon other occasions, for the most beautiful imagery of his poem, or the most elegant periods of his measure. He enters in the course of his fable into considerable details concerning the apotheosis of the Tyndaridæ; had he known them as promoted to heaven under the celestial emblem of the twins, he could hardly have failed to allude to it.^h The well

^c Lib. cit. v. 486.

^d Odyss. ε. v. 272.

^e Il. χ. v. 29.

^f Il. ψ. 226. conf. Od. γ. v. 93.

^g Il. χ. 318.

^h It appears indeed very doubtful whether Castor and Pollux ever had in the greek astrological mythology, any peculiar claims on the constellation of the Twins; since, as already noticed, some held these to be Hercules and Apollo, others Amphion and Zethus; others Cabiri, or Samothracian deities of unknown or mysterious character. Vid. auctor.

known peculiarities attending the grant of divine honours to the lacedæmonian brothers at their death, are in themselves strong proof that in its origin the tradition had no connexion with astrology, or the constellation over which they were afterwards fabled to preside; for they are said to enjoy life on alternate days, the one being visible in the upper regions of light, while the other was confined to the shades below :

Ἄλλοτε μὲν ζώουσ' ἑτερέημεροι, ἄλλοτε δ' αὖτε
 Τεθναῖσιν, τιμὴν δὲ λελόγγασ' ἴσα θεοῖσιν.ⁱ

but the two brilliant stars called Castor and Pollux, being close to each other in the heavens, the one cannot well be visible without the other.^k Hesiod^l adds to the catalogue of his predecessor the names of Sirius and Arcturus, the first another title of the Dog-star, the second of Bootes; and frequently enters into minute definitions of the proper divisions of the seasons, according to the rustic calendar, with reference to the rising, setting, and culminating of certain favourite stars; but without betraying the slightest knowledge of such a thing as a zodiac or its signs;^m and the same may be said of the early writers of Greece, almost without exception; up even to the very period when we find the institution in familiar use, among the practical astronomers who flourished towards the commencement of the peloponnesian war.

The above then are the only constellations mentioned in the heroic greek mythology; and of these

sup. cit. ad p. 122, sq.^l Scholiast. ad German. v. 146. and Nigid. de Sphaer. ap. eund. Orph. Hymn. xxxvii. v. 23.

ⁱ Odys. λ. 299, sq.

^k See Appendix, No. XXII.

^l Egey. 566, 610. 572, 619, &c.

^m See Appendix, No. XXIII.

there is hardly a single one of which the name is not either according to a palpably hellenic etymology, significant of its form or supposed influences, or directly referable to pure greek or grecophenician fable. Thus, where Homer calls the bear, "Ἄρξτον, ἦν καὶ Ἀμαξάν . . . the name ἀμαξία, or wain, which is common to many ancient nations, is suggested at once by the form of the asterism ;" for it is evident, as Hipparchus^o also assures us, that the old rustic astrologers comprehended, in this constellation, not the whole space occupied by the monstrous figure to which the same name is now applied, according to the more recent division of the sphere, but the seven bright stars alone which compose its rump or tail. The appellation of *bear*, however, can hardly be derived from any thing in the arrangement of the stars themselves, but seems to imply some allusion to

ⁿ Διὰ τὸ ἔχειν σχῆμα ἀμαξίας. (Schol. ad. Arat. Phæn. v. 27.) In the East, Agala, ܐܓܠܐ, the chariot; (Hyde ad Ulugh Beigh. p. 9. 11. Buxt. Lex. Chald. in v.) corrupted apparently ap. Hesych. into Ἀγαλα, though some suppose this to be a primitive greek appellation also bearing the sense of chariot, (Ideler. Unters. über den Urspr. &c. der Sternn. s. 7.); as from the root ἄγω, (whence also ἀμαξία, ἀπὸ τοῦ ἄμα ἄγειν, according to some), and connected with the teutonic wagen, waggon, wain. The word ܐܓܠܐ, like the greek ἐλίκη applied to the same constellation, denotes also any thing revolved or rolled, allusive to its whirling motion round the pole. The Arabs also call the lesser Bear, Arracuba ܐܪܪܥܘܒܐ, which, from the analogy of the chaldee or hebrew, may denote either a chariot, or the upper millstone, as the primitive root ܐܪܪܐ admits both significations. The last mentioned figure (the force of which will be apparent to those who are acquainted with the structure of the old oriental or classical mill) seems to have been familiar to the Arabs. Vid. Cazwini ap. Idel. op. cit. p. 375; whose editor, however, seems to have misunderstood the sense of the passage.

The latin appellations, Plaustrum, Septemtrio (the team of oxen), correspond to the greek ἀμαξία. The Arabs also call both constellations, by a similar analogy as referred to their motions or appearance, the Bier or Litter. Golius, ad Alfergan, p. 64. Lex. Arab. p. 2405. Cazwini, c. 1, 2.

^o Ad. Arat. L. I. c. 10. Petav. Uran. p. 104.

their northerly position, and the connexion of the animal with the extreme cold towards the pole,^p which the Greeks, or the phenician navigators, from whom they borrowed their notions of geography, may have had occasion to observe during their voyages. This asterism, we are positively assured by the ancients, whose testimony is confirmed by that of the monuments, bore a totally different appellation among the Egyptians, being dedicated to their Typhon,^q who accordingly appears in his place under the form of an hippopotamus, in the greco-egyptian planispheres,^r where no figure resembling a bear is visible. The Pleiads took their name either from their number,^{rr} or, as some suppose, from their being likened to a flight of pigeons.^s The oriental astronomers, by a similar analogy, call them the hen and chickens, and terms of like import are applied to them in the vulgar idiom of various nations.^t The Hyads were named, most probably, from their supposed influence on the seasons, as promoters of rain.^u The same are called by the Latins, apparently by a mistranslation of the greek term, *Suculæ*, or the litter of

^p The same name has been observed by travellers to be common to the savages of North America from a somewhat similar association of ideas. Goguet. *Orig. des Loix*, vol. IV. p. 741, 757.

^q Achill. *Tat. Isag.* in fine. Uranol. p. 94. Plut. *de Is. et Os.* c. 21.

^r Biot. *op. cit.* p. 87. sqq.

^{rr} *Etym. M.* Πλειάς, ὡς ἐκ πλειόνων ἀστέρων οὔσα. Ion. et poet. Πληιάδες.^s According to the form Πελειάδες, which does not occur in Homer or Hesiod, but is preferred by later poets—as Pindar, ὄρειᾶν γε Πελειάδων. (*Nem. II.* 17.) And Æschylus, (*apud Athen.* p. 491. A.) ἄπτεροι Πελειάδες. The derivation ἀπὸ τοῦ πλεῖν, because at the season of their rising it was usual to undertake voyages, seems worthy of no attention.

^t Hyde *ad. Ulugh Beigh.* p. 42. Ideler. *Unters. über den Urspr. &c. der Sternn.* p. 148.

^u A pluendo; ὕειν enim est pluere. Cicer. *de Nat. Deor.* lib. II. c. 43. Conf. *Not. Davis.* ad loc.

pigs ; although this name is not in itself inconsistent with the character of the rustic mythology of Italy,^v nor is it ill adapted to the appearance of the constellation. Bootes with Homer is the waggoner or driver of the oxen of the Amaxa. With Hesiod his title of Arcturus corresponds to the variety of his office, as keeper or guardian of the bear. Orion is a well known hero of greek fable, famous for his beauty and his skill in the chase. The brightest star in the heaven, which rises immediately behind him, is his dog.^w The name Sirius for the dog-star, in use, as we have seen, as early as the days of Hesiod, is apparently of boeoto-phenician origin,^x and an ancient epithet for any very brilliant or sparkling heavenly body, as Eratosthenes^y assures us ; and Hesiod^z also

^v This same most unpoetical group acts a distinguished part in the most popular latin fable, as narrated in the noblest of latin poems, (Virg. *Æn.* III. v. 389, sqq. ; VIII. v. 42, 81, sqq.) It happens, too, curiously enough with reference to the legend of Virgil, that the roman tradition also connected the phases of the constellation with the foundation of the city. (Plin. L. XVIII. c. 26.)

^w A most natural figure, also familiar to the Arabs. Abderrahman Suphi (ap. Hyde ad. Ulugh. Beigh. p. 51) says, that *Canis major* is called *Kelb-algebbar*, or the *dog of the giant*, because it continually follows Orion, which constellation was named the giant among them. And Cazwini, (Ideler. über d. Urspr. d. Sternn. s. 400, 237), “ This star follows the constellation of Orion, hence called the Dog.”

^x Possibly from $\Gamma\Psi$, principatum gerere ; the probability of which etymology receives incidental force from passages of various authors, tending to show how naturally this idea presented itself to the pagan astrologers. Thus Horapollo, among the reasons for this star being consecrated to Isis, remarks, “ that it appears to *reign over all the other stars*,” ὅς καὶ δοκεῖ τῶν λοιπῶν ἀστέρων βασιλεύειν. (Hierog. L. I. c. 3.) And Cazwini : “ This star was worshipped in the days of heathenism, because its path through the heaven is more illustrious than that of the other stars.” (Ap. Ideler. über d. Urspr. d. Sternn. &c. s. 400, 237.) Add Homer, (Il. χ . v. 27, 30.

Λαμπρότατος μὲν ὄγ' ἐστίν, ἀρίζηλοι δὲ οἱ αὐγαὶ
Φαίνονται πολλοῖσι μετ' ἀστράσι νυκτὸς ἀμολγῶ.

applies the term, Σείριος ἄστῆς, to the sun himself. This star was called by the Egyptians Isis, or the star of Isis. Hence the name Sothis in the feminine gender, while those of the dog star, κύων, ἄστροκύων, Σείριος, are masculine. In the egyptian mythology, Sothis was adored as the most beneficent of the heavenly bodies, while with the greek poets its influences are proverbially blasting and noxious.

Now in all these remnants of the primitive hellenic astrology, we cannot discover the least trace of egyptian fable, or egyptian figurative imagery, which in the zodiac and its signs it is equally impossible to overlook; and this, besides the silence of antiquity, is sufficient proof that the knowledge of these last was comparatively recent in Greece.

The only account of the precise period of the first use of the zodiac in that country, which seems worthy of any attention, is preserved by Pliny,^a who assigns the division of its constellations to Cleostratus of Tenedos, about 536 B. C.;^b this may, I presume, be understood of his having first distributed the stars in the neighbourhood of the ecliptic, among the twelve imaginary creatures whose names were contained in the original symbols, when first imported from Egypt. The first attempt at a more accurate observation of the sun's course, after the method of the

Suidas has the variety Σείρ. The Arabs, besides the appellation Dog, have another, pronounced Shira; probably corrupted from the Σείριος of the Greeks; though some, on the other hand, would have this to be the primitive oriental name, whence the Greeks have borrowed theirs; and to signify hairy or bristly (شمري), which is not unreasonable, as the remarkable sparkling or twinkling of Sirius really gives it such an appearance. (Ideler. op. cit. p. 240.)

^y Catast. 33.

^z ^y *Egy.* v. 415. conf. Archiloch. ap. Hesych, v. Σείριος.

^a Hist. Nat. II. c. 8.

^b See Appendix, No. XXIV.

egyptian zodiac, may perhaps be hinted at in the tradition, that Pythagoras^c according to some, Anaximander according to others,^d first observed the obliquity of the ecliptic; which cannot allude to any thing else but a more accurate measurement of that circle, and of the distance of the tropic from the equator; for the mere variation of the sun's course from the equinoctial must have been self-evident even to the simplest contemplator. This observation was, according to Pliny, what suggested to Cleostratus the construction of his zodiac, *rerum fores aperuit*.^e All these efforts towards the advancement of science were made not long after Thales, and other enterprising sages, had brought the knowledge of several scientific institutions of the Egyptians, and other ancient and highly civilized nations, into Asia minor. The use of the new method of regulating the calendar seems, however, not to have been for a considerable time afterwards either popular or familiar, but to have been confined almost entirely to astronomers and mathematicians; for not one of the extant classical authors, who are ascertained to have flourished previous to the days of Meton, makes the slightest allusion to the zodiac or its signs. Herodotus especially, if we may judge from his silence, appears to have been ignorant of them. The same may be said of the writings of Plato, and the older attic poets. The first extant work, if we admit its title to be authentic, where we find any distinct account of the signs of the zodiac, is the sphere attributed to Empedocles, published by Fabricius in his

^c Plut. de Plac. Phil. II. c. 14; IV. c. 12.

^d Plin. H. N. II. c. 8. *Obliquitatem ejus intellexisse.*

^e Loc. cit.

Bibliotheca græca.^f Whether it really be the production of that celebrated philosopher is more than doubtful ; but from its style and language, there can be no objection to assigning its author nearly an equal antiquity with Aratus, who wrote his poem called the Phænomena about the year 270 B. C., the earliest positively authenticated work of a popular nature where the zodiac is mentioned. That its use, however, was familiar to practical astronomers long before this period is evident from the fragments of Eudoxus, and the testimony of later mathematicians, who quote his authority, and that of other philosophers of a still older date.

The earliest mathematicians on record, who fixed the cardinal points of the sun's course, from observation, in degrees of the ecliptic, according to the twelve signs or constellations, are Euctemon and Meton. Euctemon^g placed the winter solstice and the autumnal equinox in the first degrees of Capricorn and Libra. Meton,^h however, about the same time, is said to have fixed the same points in the eighth degrees. Eudoxus,ⁱ who flourished not long after, and was reckoned a better astronomer than either, placed his cardinal points in the sixteenth degrees of Aries, Cancer, Libra, and Capricorn. Calippus, and after him Ara-

^f Lib. II. c. 12.

^g Gemin. Element. Astron. c. 16. Uran. p. 36, sqq.

^h Colum. De re rust. lib. ix. c. 14. conf. Achil. Tat. Isag. c. 23. Uran. p. 85.

ⁱ Hipparch. ad Arat. lib. i. cc. 27. 29. Uran. p. 116, sq. conf. lib. ii. c. 3. p. 119. Hipparchus says the *middle of the signs*. This has been usually interpreted the fifteenth degrees ; which is erroneous. The central point, fifteen degrees or half a sign to the eastward of the first, must be considered as the sixteenth ; as will be clear from the text of Hipparchus, below.

tus and Hipparchus, re-established them in the first,^k where they have with little exception ever since remained; and from thence is supposed to date the more accurate distinction between signs and constellations; the first thirty degrees of longitude, counted on the ecliptic from the vernal equinox for the time being, having been ever since considered as Aries, and so of the other cardinal points; although the precession of equinoxes has carried them far from their original positions, with respect to the constellations whose names they bear. By constellation I would be understood to mean the well known groups of stars, comprehended within the outline of certain imaginary forms of living or inanimate objects, as still delineated on our globes; by signs, the dodecatemoria, or equal portions of thirty degrees of the ecliptic, as subdivided for the purpose of astronomical calculation. Where it is doubtful which of these methods was followed by different astronomers in recording their observations, I have used both designations.

To whom we may be originally indebted for the precise outline of the imaginary figures of the constellations of the greek zodiac, according to the arrangement which has been generally adopted in both ancient and modern times, whether to Cleostratus himself, or to succeeding astrologers, is unknown. But the above mentioned strange variety in the definitions of the three first mathematicians, who are recorded to have noted their observations according to the twelve divisions of that circle, can only be reasonably accounted for, by supposing that they distributed those divisions, whether as constellations or signs,

^k Gemin. Elem. c. 16.

differently ; or, in other words, that the constellation or sign of the Ram with Eudoxus, comprehended a different portion of the heaven about the ecliptic, from that assigned it by Euctemon and those who followed his method. And that such was really the case we are assured by Hipparchus, who, in his treatise on the Phænomena, gives convincing examples of the existence and effect of this variety, and of the confusion which it produced, in all attempts to reconcile the observations of different greek astronomers, as compared with each other. Some of these examples we shall have occasion to adduce in a subsequent page. This singular vagueness and incongruity, however, of the methods of distributing the signs or constellations, followed by the earliest greek sages who are reported to have used the zodiac, affords another strong proof in addition to those already advanced, how very recent and imperfect the knowledge of the institution really was in Greece in their days ; and shews at the same time, that with the greater number of the early astronomers of that country, the divisions of the ecliptic, as already remarked, must be considered as *signs* rather than as *constellations* ; each having adopted that mode of arrangement which best suited his system, or appeared to him, with reference to the remainder of the sphere, to afford the greatest facilities of celestial observation.

Some authors have however attempted to account for these varieties in a different manner. Setting out with the presupposition, that the constellations of the zodiac, as delineated in the greek sphere, were really of hellenic invention, or at least had been familiar to the Greeks from time immemorial, they have assumed, that those among the above mentioned astronomers,

who placed their equinoctial or solstitial points to the eastward of the first degrees of the constellations Aries, Libra, Cancer, Capricorn, followed certain ancient calendars, still in use among the rustics of Greece, formed at a period when the colures really did occupy the eighth or fifteenth degrees of the constellations in their present form, from which, owing to the precession of equinoxes, they had gradually receded. Thus no less a man than the great Sir I. Newton,¹ having assumed that the zodiac was invented by the fabulous centaur Chiron for the use of the Argonauts, and that the supposed old calendar, followed by Eudoxus, which placed the Colures in the middle of the constellations, was the same originally constructed by that allegorical personage, and finding that Meton fixed the same colures in the eighth degrees; he inferred, that they had receded seven degrees in the intermediate period; whence, by calculating the precession of equinoxes at a degree in seventy-two years, and adopting such an arrangement of other principal constellations of the sphere, as was most favourable to his own views, he concluded that Chiron must have flourished 504 years before Meton, or 935 B. C.; at which epoch therefore he places the expedition of the Argonauts,^m and on this basis erects his system of chronology.

How fallacious such a method must be, is evident from the circumstance already mentioned, that Euctemon, who observed at the same time as Meton, and Calippus, who flourished not long after, placed their cardinal points in the first, and not in the eighth degrees; so that a chronologer, who found it suited his

¹ Chronol. p. 25. 82. sqq.

^m Chronol. p. 93.

system, might equally, upon this principle, assume, that, in the days of Euctemon, the colures had receded fifteen degrees since the time of Chiron, and assign, accordingly, the argonautic expedition to a much more remote period of antiquity.

Such, in fact, has been the method of Fréret,ⁿ who, in combating with considerable success the antiquarian mistakes of our great countryman, has himself fallen into others of a similar but still more flagrant nature. Assuming, like Sir Isaac, that the zodiacal constellations had been in use in Greece time out of mind, he has adopted the very hypothesis above alluded to, viz. that, in the days of Euctemon, the cardinal points, which had been originally fixed at a much more advanced point of the constellations, had retrograded to their commencement; that Meton, in placing them in the eighth degrees, followed an old rustic calendar, constructed in the tenth century B. C.; that Eudoxus, in like manner, in fixing them at the sixteenth,^o conformed to a still more ancient calendar, constructed in the fifteenth century B. C.;^p that is to say, that Meton and Eudoxus, though perfectly aware that the cardinal points really were nearly in the first degrees of their respective constellations, out of deference to the rustics of Cnidos or of Attica, among whom these calendars were still in use, placed them, in their respective works, the one about eight, the other fifteen degrees out of their true positions. Of this theory, which its author has developed at great detail, in his celebrated controversial work, entitled,

ⁿ Défense de la Chronol. p. 6, sqq., 417, sqq.

^o With Fréret, the fifteenth. See Note to p. 171, supra.

^p At p. 14, he makes the date 1468 B. C.; at p. 439, after Whiston, 1353.

Défense de la Chronologie, and which has been very generally adopted by succeeding writers on these subjects, I shall endeavour shortly to point out the fallacy.

In the first place, it must be observed, that the whole of the above system, plausible as it has appeared to many, is contrary to the express testimony of the ancients, more especially of Hipparchus and Calumella, to whose works the learned academician and his followers have principally appealed in support of their hypothesis, but who, instead of justifying, confute it, as shall be shown, in the most positive terms. But, besides this, it were in itself most extraordinary, and indeed almost incredible, that Meton and Eudoxus, who pretended to be correct practical astronomers, after the fashion of the time, and who have always been considered, if not as the fathers of the science, at least as its first great reformers and improvers among the Greeks, should intentionally have composed complete theories of the heavens upon the basis of a wilful error of not less than fifteen degrees of longitude in the position of the cardinal points of the sun's course, and that merely to gratify the rustic prejudices of the time. "On ne s'embarrassait pas beaucoup," says Fréret,^a "de placer les points cardinaux hors de leur véritable lieu ; on songeait seulement à se faire entendre des gens de la campagne, pour lesquels on écrivait, et dont il fallait respecter les préjugés." That the first philosophers of Greece wrote merely for the peasantry, whose prejudices it was necessary to respect, is surely a most unwarrantable supposition. If men of science were to conform

^a Op. cit. p. 10.

thus servilely to all the vulgar errors of the day, their labours would comparatively be of little value. Their object ought to be, and we may be sure that of Meton and Eudoxus was, by their discoveries to correct and root out, not to confirm, the ignorance and bigotry of the lower orders of their countrymen. We shall first turn our attention to the method of Eudoxus, which, as described by Hipparchus, has formed the principal groundwork of the speculations of Fréret, and those who have adopted his views; and in the course of our inquiries into it, we shall be led to a few observations upon that of Meton.

Hipparchus, in his commentary on the Phænomena of Aratus,^r sets out by observing, that the poet, in his description of the heavenly bodies, had for the most part imitated, or even closely copied, the sphere of Eudoxus, frequently doing little more than transcribe his words in verse. When, however, he comes to institute a close comparison between the two authors, he thus expresses himself:^s “First of all, it must be considered, that Aratus so divided his zodiac, that the tropical and equinoctial points should form the commencement of the signs; but Eudoxus so, that the same points should be the middle of Cancer, Capricorn, Aries, and Libra.” Having then quoted certain statements of Aratus in proof of his first assertion, he adds, “*and in this way almost all the old astronomers divided their zodiac;*” which passage, as we have before had occasion to remark, is of great importance, as showing the superior antiquity of this method, originally borrowed, it may be presumed, from the Egyptians or Chaldees; and that the prac-

^r Lib. i. c. 2, p. 98.

^s Lib. ii. c. 3, p. 119.

tice of assigning the cardinal points to various other parts of the signs or constellations, is comparatively a recent innovation. Hipparchus then proceeds to prove the truth of the second part of his statement, in the words of Eudoxus himself. "He himself," says he,^t "bears witness, that he placed the solstitial points in the middle of the signs, in the following words: 'The second circle is that in which the summer conversions are effected; in it is the middle of Cancer. The third circle is that in which the equinoxes are effected; it passes through the centre of Aries and of Libra. The fourth, in which is the winter tropic, is in the middle of Capricorn.'" Had Eudoxus meant to say that all this took place in Chiron's time, or about 900 years before his own; or, that these were not the true cardinal points, but merely what the rustics of Cnidos considered as such, it were surprising that he should have expressed himself in such a manner; but still more so, that neither Hipparchus, one of the acutest critics that ever existed, nor any succeeding commentator, should have had a suspicion of his true meaning. But, in truth, according to the actual arrangement of the zodiacal constellations, as supposed to have existed in the days of Chiron, (namely, that still followed on our globes,) it is impossible that the colures could have fallen in the middle of the four constellations, Aries, Libra, Cancer, and Capricorn, since these occupy unequal and very irregular portions of the ecliptic; so that such a correspondence never could have existed."^u This were in itself sufficient proof that Eudoxus dis-

^t Lib. ii. c. 3, p. 120.

^u Vid. Delambre, *Hist. de l'astron. anc.* tom. i. p. xli.

tributed his zodiac, and placed his cardinal points, after a method of his own, without reference to the sphere of Chiron or any other such visionary system.

But, besides all this, Hipparchus has, fortunately, in numerous illustrations of the positions of the heavenly bodies, as referred to their longitude, according to the above various methods of dividing the zodiac, left us convincing and unequivocal proof, that although Eudoxus placed the same cardinal points in the middle of the signs which Aratus and he himself fixed at their commencement, yet both, making allowances for trifling errors or discrepancies consequent on their imperfect mode of observation, assigned, or meant to assign them precisely the same position in the ecliptic. I shall quote nearly his own words, confining myself to examples drawn from great and important constellations, concerning whose real form and position there can be no difference of opinion; for as to many of the other more obscure or less well-defined asterisms, there can be little doubt but that in the sphere of Eudoxus they differed as much in their precise extent and figure from those which Hipparchus designated by the same names, as did the signs of the zodiac themselves. I have also selected such examples as are least chargeable with that confusion and inconsistency from which many portions of the work of Hipparchus, in its present state, great as is its general merit, are not exempt.

“ The last and most easterly star in the tail of the great Bear, on a circle parallel to the equator, would be situated in the fourth degree of Libra, the solstitial and equinoctial points being fixed at the commencement of the signs; but if, with Eudoxus, we place those points in the middle of the signs, the same

star will be situated in the nineteenth of Libra.”^v If the fourth degree of the Libra of Aratus or Hipparchus corresponds with the nineteenth degree of the Libra of Eudoxus, it follows, that the first degree of the same sign with Hipparchus must correspond with the sixteenth according to Eudoxus; consequently their equinoctial colures were in the same point of the ecliptic.

Again, according to the method of Aratus,^w “the most southerly of the four stars which form the quadrangle of the great Bear, occupied about the twenty-fifth degree of Leo;” but, according to the other system, “the same star coincided with the tenth of Virgo.” The result answers precisely to that obtained from the foregoing example. The first degree of the Virgo of Aratus would be equivalent to the sixteenth with Eudoxus; the first of Leo to its sixteenth; and the commencement of each sign to the centre of the same, according to the arrangement of each respectively.

Again:^x “the last and brightest star of the lesser Bear is situated in the eighteenth degree of Pisces, but as Eudoxus divides his zodiac in the third of Aries.” Consequently the sixteenth of Pisces with Aratus corresponded to the first of Aries with Eudoxus; the first of Aries with Aratus to the sixteenth with Eudoxus; so that, as in the previous instances, their cardinal points, though nominally different, occupied the same position in the true ecliptic.^y

This is farther illustrated by the discrepancy between their *συναπολαί*, and *συγκαταδόσεις*, or the description of the stars or constellations, which rose or

^v Hipparch. in Phæn. Arati. lib. i. c. 10, p. 104, sq.

^w Loc. cit.

^x Lib. i. c. 12. in fine, p. 106.

^y Conf. Petav. Var. diss. ad Uran. lib. ii. c. 5.

set together with particular portions of the zodiac, according to the two systems; which also shews, not less pointedly, that the corresponding signs were fixed by Eudoxus, many degrees of longitude west of those of Aratus.

“Aratus,” says his commentator,^z “having supposed the commencement of Cancer to be on the eastern horizon, observes, that the (lower^a) half of the Crown had set; the southern Fish as far as the back fin; Ingeniculus up to the belly; Ophiuchus as far as the shoulders, &c. But Eudoxus asserts, that the whole of Ingeniculus is still visible when Cancer begins to rise; the (lower) half of the Crown; the heads of Arctophylax and Ophiuchus, &c.” It would appear, by a reference to our globes, that several of the constellations mentioned in this passage were differently arranged in the sphere of Eudoxus from what they are now; but it is equally clear, as well from the description of those which correspond, as from the remarks of Hipparchus, that as they were visible to a much greater extent above the western horizon on the rising of Cancer, according to Eudoxus, than according to Aratus, the Cancer of the one must have commenced much farther west in the ecliptic than that of the other. And accordingly Hipparchus continues:^b “Concerning the Crown Aratus is right, as in the latitude of Greece it begins to set when the twenty-third degree of Gemini rises, and goes down altogether when the fourth of Cancer rises. *But the method of Eudoxus is palpably different, since the beginning of Cancer is placed by him in the middle*

^z L. ii. c. 5. p. 120.

^a So it must be rendered, consistently with the general sense of the passage.

^b P. 121.

of Gemini ; so that let it be observed once for all, that as they portioned their signs differently, it is impossible that the relative phenomena can correspond in the descriptions of each." This is sufficiently explicit. If therefore Eudoxus placed the commencement of his Cancer in the middle of the Gemini of Aratus, the sixteenth of Cancer with the one, would correspond to the first of Cancer with the other, their solstitial points being as before precisely the same in the true ecliptic.

I have dwelt on these convincing examples at the greater length, because Fréret himself^c has noticed several of them, admitting that their evidence is conclusive. But by some most unaccountable confusion of ideas, he has advanced them as proof of the correctness of his own theory ; whereas it must be clear to every person who comprehends them, and could scarcely have escaped his own acute judgment, had it not been blinded by system, that their direct tendency is on the contrary to subvert and destroy it altogether. It is no less surprising that he should, throughout his argument, have formally referred the reader to Petavius, for farther proof and illustration of his views ;^d calling him justly a great man, and appearing to pay the greatest deference to his opinion. If, however, the authority of Petavius were to be final, the question would indeed be decided, but in a very different manner from what he supposed ; for on referring to the works of that profound calculator, I find that he not only held precisely the same opinion as that here supported, but has devoted several chapters to the careful examination and confutation of the

^c Déf. de la Chron. p. 449.

^d Op. cit. pp. 7. 450.

very system of which the french academician professed himself an advocate. To him, therefore, I shall in my turn refer the reader.^e

I am well aware that this theory, propounded I believe first by Scaliger, justified to a certain extent by Sir I. Newton, and more fully developed by Fréret, has obtained great popularity among modern critics, and been adopted by many distinguished authors besides those above mentioned.^f But authorities cannot prevail against facts; and those which have been here brought forward are too unequivocal to be misunderstood. Whiston, who like Fréret combated the system of Sir I. Newton, admitting, with that great man, that Chiron was the inventor of the zodiac, but differing from him merely with respect to the period of invention, composed a dissertation, inserted by Fréret in his work,^g to prove that the cardinal points, as constituted by Eudoxus, relate to nearly the same remote period of antiquity assumed by the french antiquary. I shall not attempt to follow him through his argument, which both in as far as regards his attempt to confute Newton, as his endeavour to establish his own position, appears fallacious and inconclusive. I shall merely mention the principal drift of it. He, like Sir Isaac, lays down as a basis, the description given by Eudoxus, as quoted by Hipparchus, of the line of constellations through which

^e Var. Diss. ii. c. 5. p. 44. Hæc non obscure testantur, æquinocia et solstitia nunquam alibi ab antiquioribus astronomis, quam in mutuis circulorum sectionibus et tactionibus collocata fuisse; quas octavæ vel decimæquintæ signorum parti vel aliis imputabant; nec octavas illas cæterasve partes ab æquinoczialibus aut solstitialibus punctis esse numeratas.

^f Playfair, Chronol. p. 37. Lalande, &c. ap. eund. Ideler, Unters. über die astr. Beob. der Alt. s. 336.

^g Defense de la Chron. p. 420.

the colures passed from north to south ; and then endeavours to show, that, consistently with a certain arrangement of these constellations, partly with reference to their form as now delineated on our globes, partly to that in which he supposes they may have appeared on those of the aboriginal Greeks, the same colures would have passed toward fifteen degrees to the eastward of their true positions for the days of Eudoxus himself. Whatever plausibility his argument may possess, seems to be derived chiefly from the discrepancy in the accounts given of the constellations by the various authors who have transmitted any details concerning their ancient form, upon which varieties he naturally enough puts a private interpretation most favourable to his own views ; the changes which he has found it necessary to make in several of them, in order to accommodate them to his own system, being quite as inadmissible as those with which he reproaches Sir Isaac. The description given by Eudoxus of the constellations through which the colures passed, is indeed, as must be evident to any one who impartially examines it, totally irreconcilable upon any system, or by a reference to any age of the world, with their actual arrangement on the tables of Bayer, or upon our globes.

Fréret^h has also with a similar view, instituted a comparison between the line of Colures according to their description by Eudoxus, and their true position in the days of that philosopher ; more especially with reference to the strictures of Hipparchus on the errors that description contains. The result, however, he himself, as well from the difficulty of ascertaining

^h Op. sup. cit. p. 451, sqq.

the precise form of the ancient asterisms, as from other causes, appears to have found so little satisfactory, that he admits the principal weight ought to belong to the striking illustrations above adduced, from the comparative positions of those heavenly bodies, concerning the form of which there can be no dispute; and in so doing, he has, as already observed, unintentionally brought forward the most conclusive arguments against his own system. He has, farther, collated the respective delineations of the tropical and equinoctial circles, by Eudoxus, Aratus,ⁱ and Manetho, in order to show, that they bore reference to the positions for the same remote period, but here, as before, in spite of a very arbitrary mode of deduction, the just inference appears to be far from favourable to his own views.

There can be no stronger proof of the little reliance to be placed on any evidence, derived from partial illustration of the supposed form and positions of fanciful groups of stars, concerning which, as defined in the spheres of the more ancient astronomers, we have so few precise data, than the circumstance, that such men as Petavius, Newton supported by Halley,^k and Whiston, have each arrived by that method at

ⁱ That any appeal should here be made to Aratus is the more surprising, since Hipparchus (L. ii. c. 3. p. 119.) expressly states that although that poet agreed with Eudoxus in his real positions, yet he placed his cardinal points in the commencement of the signs; and this he also proves very clearly by the following passage of the *Phænomena*, descriptive of the arc of the horizon within which the zodiac rises and sets. (v. 537, sqq.)

Αὐτὰρ ὄγ' Ὀκειανοῖο τόσον παραμείβεται ὕδαρ,
 Ὅσσον ἀπ' Αἰγοκερῆος ἀνερχομένοιο μάλιστα,
 Καρκίνον εἰς ἀνιόντα κυλινδεται.

^k Phil. trans. vo. xxxiv. p. 205. vol. xxxv. p. 296.

conclusions favourable to their own views, though totally irreconcilable with each other. There is however this difference in the value to be attached to the speculations of these great calculators, that while the inquiries of english astronomers were confined to one point, and that for the purpose of establishing particular systems, the learned jesuit extended his views over the whole circuit of the astronomical chronology of the ancients ; and without any favourite theory to support, has elucidated these obscure matters, with such a vast deal of profound learning and solid argument, as must carry conviction to every unprejudiced mind.

With regard to the strictures of Hipparchus himself on the position of Eudoxus, on which Fréret lays considerable stress, as confirming his views, it may be remarked, that although the distinguished commentator of Aratus criticises and condemns with much bitterness, and frequently with undue severity, the views of his predecessor, yet he never betrays the slightest suspicion, that Eudoxus had either wilfully or unintentionally misplaced his real cardinal points to any considerable extent ; but finds fault, partly with actual errors in his positions, chiefly, however, with what he considers a confused or unusual arrangement of certain constellations. To this his principal censures are directed ; and it were inconceivable, had the whole theory of Eudoxus been grounded on a wilful error of fifteen degrees in the positions of the Colures, that so acute a genius as Hipparchus, when carefully reading and commenting his work, should never have had a surmise of his real intention ; but should merely have supposed, that in the division of

the ecliptic, he had made the commencement of his signs anticipate the usual position by fifteen degrees.

To examine all these matters minutely would not only exceed our present limits, but require a knowledge of practical astronomy to which the author of this essay has no pretensions. We shall therefore be contented to rest our argument on the testimony of Hipparchus himself, who had read and criticised the works of Eudoxus, which we only know from second hand, and by imperfect quotations; on that of Petauius, who has edited, carefully studied, and profoundly commented the text of Hipparchus; on the important examples above cited, the evidence of which the chief supporter of the opposite system has admitted to be decisive; but, above all, on the extreme improbability, that the most distinguished astronomer of his day should have been guilty of such a puerile deference to the prejudice and bigotry of a small body of greek rustics, as to have intentionally constructed a whole theory of the heavens on so absurd a basis. How is so strange an admission to be reconciled with the reputation which Eudoxus obtained as an improver of science throughout the civilized world? Are we to suppose that the celebrated *Octoeteris* which he composed for the use of Greece was founded on a fixing of the solstice fifteen days after that on which it really fell? Fréret supposes that the barbarians of *Hellas*, in the fourteenth or fifteenth centuries before our era, had a well-regulated zodiac and calendar; that, in the little less rude age of Hesiod, this supposed sphere of Chiron received a correction proportioned to the alteration which had taken place in the positions, the cardinal points being transferred from the sixteenth to the eighth degrees; that, in the days

of Euctemon, it received a still farther correction, the same points being transferred to the commencement of the constellations; and yet we are to believe that Eudoxus (as well as Meton) obtained a fame far surpassing that of all preceding astronomers, merely by going back to the old system of his barbarous forefathers, the fallacy of which his countrymen had been, during ages, endeavouring to show. Was this the fruit of his long study in Egypt, that, on his return to Greece, he should be more willing to confirm his fellow-countrymen in error and bigotry, than impart to them the benefit of his lessons among the theban priesthood? The highest praise which poetical hyperbole could devise for the author of the julian calendar was, that his merit equalled that of Eudoxus:¹ and did such glory belong to the mere reproduction of a method which had been corrected or exploded as erroneous during ten centuries? Geminus, who lived about three hundred years after Eudoxus, speaks^m of the solstice, as regulated by his observations, assisted by those of the Egyptians, as having been a standard of correctness with his countrymen for long afterwards. This solstice, Petavius,ⁿ for sound reasons, has fixed, not far from the true time, towards the end of December; but, upon the other system, we must transfer it to the second week in January,—a computation which never could have been a subject of any thing but ridicule to Geminus. This author, however, furnishes us with farther evidence that Eudoxus

¹ Lucan. Pharsal. x. v. 187.

Nec meus Eudoxi vincetur fastibus annus.

^m Elem. c. 6, p. 19.

ⁿ De doct. temp. l. ii. c. 7, vol. i. p. 53, conf. not. ad loc. Gemin. sup. cit.

was guilty of no such absurdity, who, according to him,^o placed the spring equinox in the sixth of Aries, the winter solstice in the fourth of Capricorn. How is this to be reconciled with the above designation of the sixteenth degrees? Fréret would suppose another rustic calendar, of which he has a supply ready to help him out of all difficulties. As there is, however, not the least evidence that Eudoxus ever constructed but one sphere or calendar, or ever assigned but one real position to the cardinal points, this very circumstance shows that the variety of his zodiac consisted but in terms. Had Eudoxus, in one of his works, fixed his colures in the sixth, in another in the sixteenth, of Aries, it is not to be believed that Hipparchus, in his commentary on them, should have omitted to mention so important a circumstance. The statement of Geminus, therefore, rightly interpreted, might clear up the difficulty. He, no doubt, means here to assign what he considered the true position of the colures of Eudoxus, according to the received division of the constellations, which that astronomer had recomposed as signs after a form of his own. Accordingly, Petavius^p has observed, that, consistently with the method of the ancients, who counted their degrees of longitude on the equator, and not on the ecliptic, the sixth of Aries and the fourth of Capricorn (as constellations) would be as near an approximation to the true positions, for the time of Eudoxus, as could well be expected from the rude methods of observation in those days.

It was not until after the foregoing observations were nearly prepared for publication in their present

^o Elem. c. 16.

^p Var. diss. l. ii. c. 4.

form, that I discovered that the celebrated M. Delambre had devoted a long article of his History of ancient astronomy to this very point, where, by a far more scientific, but not more impartial, analysis of the same authorities here appealed to, he has been led to a precisely similar conclusion. I shall quote at some length the passage containing the summary of his remarks; for, having naturally felt some diffidence in venturing to oppose my opinion to that of distinguished astronomers in a matter any way connected with their own science, it is gratifying to be able to adduce in its support testimony of at least equal weight, as far as the present question is concerned. M. Delambre attributes more, perhaps, than I have done to the extreme rudeness of the methods of observation in the days of Eudoxus, and less to the discrepancies in the arrangement of the constellations; but the result is the same. After examining very minutely the descriptions of Hipparchus,⁹ which form the basis of the

⁹ Histoire de l'astron. ancienne, tom. i. p. 122, sq. Dans toutes ces remarques sur le tropique d'Eudoxe on ne trouve pas une seule position un peu précise. Sa sphère devait donc avoir été faite à vue et sans aucun instrument....Mais les données d'Eudoxe ne s'accordent pas entre elles; c'est qu'il n'a point regardé le ciel, qu'il a recueilli les observations grossières faites à vue, peut-être en différens tems et en différens pays. Il n'est pas étonnant qu'avec des élémens aussi imparfaits, il ait donné des discordances énormes; ce qui étonne davantage, c'est la peine inutile que se sont donnée quelques modernes, pour expliquer tout cela, en supposant des observations faites à des époques éloignées les unes des autres. Il faudrait autant d'époques différentes qu'Eudoxe a nommé d'étoiles. On s'est accordé à prendre pour idée fondamentale que les observations étaient bonnes. Il était bien plus naturel de les supposer mauvaises; mais alors on n'aurait pu bâtir aucun système.

Enfin on ne verra qu'une manière différente de compter les signes et les degrés entre Hipparque et Eudoxe; le premier mettait les points équinoxiaux et solsticiaux dans le milieu des signes. Il étend le signe d'été, celui des plus longs jours, *ἡρεΐτατον* comme dit Aratus, à 15° de part et d'autre du point solsticial....Hipparque, au contraire, qui avait

theories of Newton, Whiston, and Fréret, he observes : “ In all these remarks on the sphere of Eudoxus, we do not find a single position tolerably correct. His sphere, therefore, must have been constructed by the naked eye, without any instrument.But his statements do not even agree with each other, which arises from his not having studied the heavens, but merely put together rude observations, made at sight, perhaps at different times, and in different countries. It is not surprising that with such imperfect elements the whole should be so discordant ; but what is really surprising, is the useless trouble which the moderns have taken to explain all this, by supposing observations made at different epochs, and in countries far distant from each other. We should require as many different epochs as Eudoxus has mentioned stars. These authors have set out with the fundamental idea that the observations were correct ; it had been more reasonable to have supposed them erroneous. But then there would have been no room for the construction of a system.....It will be seen, that Eudoxus and Hipparchus differed but in their method of reckoning the degrees and signs. The former placed the equinoctial and solstitial points in the middle ^{of} the signs ; extending the sign of summer, or of the longest days, *Δεξείτατον* as Aratus calls it, to fifteen degrees on each side of the solstitial point.Hipparchus, on the other hand, saw the propriety

imaginé ou perfectionné la trigonométrie, avait senti le besoin de placer le point 0 du zodiaque et de l'équateur, à l'intersection de ces deux cordes....ainsi les 15 degrés d'Eudoxe ne signifient pas qu' Hipparque et lui eussent placé le solstice en des points réellement différens. Le point était le même, le chiffre seul était changé. Voilà ce que n'ont pas vu les chronologistes, qui avaient à peine quelques notions d'astronomie, et ce que n'ont pas voulu voir les astronomes à système.

of placing the point zero of the zodiac, and of the equator, at the intersection of these two circles..... so that the fifteen degrees of Eudoxus, do not denote that Hipparchus, and he himself, really assigned to the solstice essentially different positions. The position was the same, in the cypher alone lay the difference. This is what chronologers, who had scarcely a notion of astronomy, have not been able, and astronomers, under the influence of system, have not been willing, to see." Thus far Delambre; and whoever takes the trouble to compare his illustrations with those of Whiston and Fréret, and with the text of the original authors, which forms the groundwork of the whole, will no doubt arrive at the same conclusion.

It remains now to offer a few observations on a passage of Columella, which Fréret,^r and those who adopt his views, are accustomed to quote confidently in favour of their argument, that the ancients were careless of nicety in the calculation of the seasons, and more willing to humour than to correct the prejudices of the vulgar; but which, I shall endeavour to shew, they have either never read at all in the original work of Columella, or have altogether misconceived its import; as it not only, when rightly understood, bears a totally different sense from what they have assigned it, but, like the parallel texts of Hipparchus, is altogether at variance with their theory. The passage, or rather the portion of it usually adduced, is as follows:^s *Nec me fallit Hipparchi ratio, quæ docet, solstitia et æquinoctia non octavis, sed primis partibus signorum confici. Verum*

^r Déf. de la chron. pp. 10, 472, sqq.

^s Colum. de Re rust. ix. c. 14.

in hac ruris disciplina, sequor nunc Eudoxi et Metonis, antiquorumque fastos astrologorum, qui sunt aptati publicis sacrificiis, quia et notior est ista vetus agricolis concepta opinio ; nec tamen Hipparchi subtilitas pinguioribus, ut aiunt, rusticorum literis necessaria est.” That is, as these critics have understood him : “that instead of following the correct calendars of his own time, regulated upon the principles of Hipparchus, according to whom the cardinal points were fixed at the first degrees of the signs ; he preferred adhering to the old vulgar or rustic calendar, regulated according to observations of ancient greek astronomers, where the equinoxes and solstices were placed seven degrees beyond their proper places for the time at which he wrote.”^t This observation, if the above were the real import of his words, (which we shall hereafter see it was not,) would, in as far as regards Meton, be tolerably correct ; for as that philosopher lived towards five hundred years before Columella, the precession of equinoxes amounted between the age of the two, very nearly to seven degrees. As for the coupling the name of Eudoxus with that

^t Fréret, p. 469, sqq.—This is in fact the interpretation given, not only by Fréret generally throughout his observations, but more especially by Professor Ideler, (*Untersuch. über die astr. Beob. &c.* s. 335, ff.) who adopts his views, and makes Columella say : that “the colures of the old calendars of Meton and Eudoxus, differed eight (seven) degrees of longitude from the correct reckoning of his own time ;” beziehen sich auf eine Lage der æquinoctial und solstitial punkte, welche um acht grad östlich von der jetzigen abweicht. But in the very next page it is stated, that Meton must have followed a calendar constructed for the tenth century B. C., wherein the cardinal points were placed in the eighth degrees of the constellations according to their actual arrangement. Now that would make a difference, as observed in our text, of fourteen, and not seven degrees, between the calendar of Meton and the true positions in the days of Columella. How the learned professor reconciles these two statements I am at a loss to understand.

of Meton, it can here be nothing but a confusion of ideas on the part of Columella, for the best authorities do not, as we have already seen, admit of the belief that he ever followed such an arrangement. But, in the case of Meton; would not this very statement, even as here interpreted, afford sufficient proof of the correctness of the opinion above advanced, respecting his method of dividing the zodiac? namely, that he made the commencement of the signs anticipate the colures by seven degrees. For if he had placed his colures, as Fréret supposed, seven degrees out of their proper place in the heavens for his own age, and Columella in his rustic calendar placed them where Meton did, then Columella would have differed fourteen, and not seven degrees only, from the correct calendar of his own time. If, therefore, in conformity with the sense of the passage adopted by these critics, the difference between the calendar of Meton and the correct reckoning for the days of Columella, amounted to only seven degrees, nearly what it ought to have done according to the laws of precession, it were clear that Meton must have fixed his cardinal points, as nearly as his means of observation permitted, to their proper positions in the sphere.

But the fact is, that this very rustic reckoning of Columella himself, as opposed to the improved method of Hipparchus, relates, like the corresponding varieties of Meton and Eudoxus, not to a wilfully erroneous calculation of the cardinal points of the year, but merely to the preference of an old-fashioned arrangement of the signs themselves; according to which those points were fixed at the eighth; instead of the first degrees. This is evident from the remainder of the text of Columella, which has been generally only

quoted by halves ; and where he mentions not only the degrees of the zodiac, but the days of the months, to which the equinoxes and solstices were fixed. Speaking of the management of bees with respect to the various seasons of the year, he observes ;^u that the vernal equinox takes place in the month of March, VIII Calend. April., in the eighth degree of Aries ; Mense Martico circa VIII Cal. Apr., in octava parte Arietis conficitur. A little lower down he fixes the autumnal equinox in the VIII Cal. Oct. The winter solstice in the VIII Cal. Jan., about the eighth degree of Capricorn ; brumam quæ fere conficitur circa VIII Cal. Jan. in octava parte Capricorni. After which he adds as above : nec me fallit Hipparchi ratio, &c. The eighth Calends of April was the twenty-fifth of March, to which day the equinox was fixed in the julian calendar. The true equinox, according to the correct computation of modern astronomers, fell somewhat earlier, but the constructor of the julian calendar supposed his reckoning to be right,^v and so did Columella ; there is no wilful error on either side. Columella therefore, instead of differing seven degrees from the accurate standard of the day, coincided with it exactly. He differed only from Hipparchus, in following an old and vulgar arrangement of the signs, instead of the improved system recommended by that astronomer. His countrymen of the same period did precisely the same, as is clear from a multitude of passages of Ovid, Pliny, and others,^w

^u Cap. sup. cit.

^v Petav. de doct. temp. l. iv. c. 27. Ideler, op. cit. p. 368.

^w Plin. H. N. xviii. c. 25. conf. ii. c. 19. Ovid. Fast. l. iii. v. 877. vi. v. 725, sq. 790. Martian. Capella, de nupt. Philol. l. viii. Conf. Petav. de doct. temp. iv. c. 27. Var. diss. iii. c. 2. et Calend. Rom. ap. eund. Uran. p. 60. See also fragments of roman calendars, ap. Græv. Thes. antiq. rom. tom. viii. init.

which assign the equinoxes and solstices to their proper days according to the julian reckoning, but to the eighth degrees of the signs. Indeed there is no reason to doubt, but that Sosigenes constructed the new roman or julian calendar on that principle ; finding that it harmonized with the ancient usage of Latium, borrowed, it may be supposed, from Greece in the early ages of the republic.

Fréret has followed up his remarks upon this passage of Columella by a long catalogue of the errors and inconsistencies of that author, and of the calendars in use among the italian peasantry in his day, ascribing most of them to a bigoted adherence to the supposed fasti of Meton, adapted, as he conceives, to the positions in the age of Hesiod, about ten centuries B. C. ; the cardinal points being in those days in the eighth degrees of the constellations. As however Columella, in the only passage where he mentions Meton, happens to be right in his computation of the seasons, it is hardly fair to assume that all his mistakes rest on the authority of that philosopher. Accordingly, in a subsequent page,^x where the critic notices the circumstance that the Parapegma of Meton was engraved in letters of gold, and posted up at Olympia for the public use of Greece, he admits that the vulgar calendar, which he supposes Columella to have considered as emanating from Meton, must have been falsely ascribed to that astronomer. It would indeed be surprising if the public authorities of the greek confederacy had recorded in letters of gold, as a new discovery, a system which was as old as Hesiod, and had been no better than a vulgar error ever since

the days of that poet. Yet this very golden parapigma was the same which Meton regulated by the eighth degrees of the signs or constellations, at least we hear of no other ascribed to him. Of the actual degree of merit it possessed, we may judge from the statement of Ptolemy,^y whose authority will not be disputed, that Meton's observation of the solstice, though rude, was accurate enough to be of some assistance to Hipparchus in making his celebrated computation of the precession of equinoxes. The same Ptolemy^z assigns it to the morning of a day of the era of Nabonassar, identified by Petavius with the twenty-seventh of June, who has also shown the observation itself to be sufficiently correct.^a Unless, therefore, we suppose that Meton was guilty of the absurdity of fixing his cardinal points to the just day of the year, while he placed them seven degrees out of their positions in the heavens, we must admit that the method of this astronomer is as inconsistent with the argument of Fréret, as that of Eudoxus has been shown to be.^b

The whole proof, therefore, as resting on the above theory, of the use of the zodiac, or of its constellations according to the received division, being known among the heroes, rustics, or poets of the early and

^y Magn. Cons. l. III. p. 62, sq. Fréret (op. cit. p. 13) has, in quoting this passage of Ptolemy, as on so many other occasions, given a most unfair interpretation of his author; as if the expression *ὀλοσχερέστερον*, applied by the astronomer to the observation of Meton, were intended to signify, that it was incorrect by several days; whereas it is clear that he applies it only to inaccuracies of minutes, or at the most, hours, as compared with the greater precision of Hipparchus.

^z Ibid.

^a According to the mean motion of the sun by which the calculations of the ancient astronomers were regulated. De doct. temp. L. IV. c. 26.

^b See Appendix, No. XXV.

barbarous ages of Greece, as well as of the blind deference of the philosophers of her civilized ages to these imaginary ancient calendars, and of their willingness to sacrifice the interests of science to the superstition and prejudice of the vulgar, falls to the ground ; or even resolves itself into evidence of the very reverse of all this, namely, of an arbitrary and presumptuous spirit of innovation in those very sages, who were not contented with the old and simple method borrowed from the Egyptians or Chaldees, and sanctioned by the earliest astrologers of their own nation, in conformity with which, as we learn from the express testimony of Hipparchus, the cardinal points were placed at the commencement of the signs ; but each, according to his own fancy, thought proper to construct his sphere and portion his zodiac in such a way as he found most convenient, or was most congenial to his own taste. Nor can we have stronger evidence of the recent introduction of the zodiac into Greece than this very fact, that the distribution of its signs or constellations, it matters not which, was, in the age of Euctemon, Meton, and Eudoxus, so very arbitrary ; had these constellations been accurately defined and familiar to all ranks of men, to the rustic or the navigator as to the sage, during ten centuries, it is not likely that these most popular authors of the day should so strangely have confounded them. It would appear, then, that though the Greeks, about the time of Thales, adopted the astronomical symbols of the twelve divisions of the seasons from their more ancient neighbours, they did not at first understand their exact use. All that seems to have been known was, that the ecliptic contained twelve parts, equal perhaps according to some,

unequal according to others ; which, under the name of gods, animals, or other objects, bore a certain reference to particular seasons ; but the more exact arrangement of the gods, animals, &c. themselves, with respect to the three hundred and sixty degrees, previous to the days of Hipparchus, depended very much upon the fancy of individual astrologers.

Unless, therefore, some very important facts or authorities, unknown to me, as well as to those who have advocated the opposite opinions, have been omitted in the foregoing inquiry, it will hardly be denied, in spite of the force of association or of prejudice, that the internal evidence, both negative and positive, of primitive greek tradition, as well as the testimony of the most reasonable and trustworthy of the classical authors who have treated of these matters, and who are seldom backward in assigning a due share of antiquity to their own institutions, is at direct variance with the belief, that the constellations of the zodiac of Greece were either of native invention, or known in that country at any very remote period.

Having thus examined, to the best of our ability, the probable origin and primitive form of the egyptian zodiac, and the period and circumstances of its first introduction into Europe, I shall conclude this essay with a few remarks on the signs or cyphers by which its twelve portions are still represented, and which are in fact mere hieroglyphics of the seasons, as were those of the Egyptians of old, and appear to be of very considerable antiquity. Salmasius,^c Montfaucon,^d and other learned men distinguished for their

^c In Solin. p. 872, sqq.

^d Palæog. græc. p. 373.

knowledge of ancient codices, state that they occur familiarly in both greek and latin manuscripts ; and Du Cange has inserted them among the *Sigla veterum* appended to his glossary of the middle and lower greek idiom.^c M. Delambre^f observes that the only greek work where he had observed these symbols is the commentary of Proclus on the *Apotelesmata* attributed to Ptolemy ; they occur, however, in other published greek authors, as in the treatise of Ptolemy himself ; in the old preface to which, a table of the signs of the zodiac, with their influences, is also offered for the convenience of the reader, “ according to the method transmitted by Ptolemy as the most accurate.” Hence we may infer that Ptolemy himself, or whoever may be the author of the *tetrabiblion*, also used them. They are to be seen in the *Elementa* of Geminus,^g attached to various diagrams whereby that mathematician illustrates the argument of his text, and which are clearly his own, as he expressly refers to them. That his editor Petavius should have inserted cyphers different from what existed in the original, there is the less reason to suppose, since some of them differ considerably in their forms from those in modern use. That of Capricorn especially, consisting of two distinct portions, seems to refer to what I have above conjectured to be the original egyptian form of the symbol, namely, two different animals, combined by the Greeks into one amphibious monster. This variety also appears in the cyphers of Ptolemy, and is stated by Salmasius^h to be usual with greek authors, while the

^c Vol. II. Suppl. II. p. 2, 5.

^f Hist. de l'Astron. Anc. tom. II. p. 544.

^g Cap. I. Uran. p. 4, sq.

^h In. Solin. p. 783, A.

Latins employ the ordinary figure, which would imply the superior antiquity of the former. The zodiacal cyphers are also attached to geometrical figures in Theon's commentary on the *Almagest*. Macrobiusⁱ expressly refers to them under the name of notæ or marks, as distinct from the alphabetic letters, in his illustrations of a similar diagram, where both are used. They appear also on the *Abraxas*, or basilidian gems, published by Montfaucon.^k Bailly gives, in his *History of ancient astronomy*,^l a fragment of a zodiac sculptured on marble, also published by Kircher,^m which, if it be faithfully represented in his engraving, may, from its form and execution, be considered as not of the most barbarous age of roman art, where we have, as emblems of some of the constellations, apparently the same images represented in full, of which we have the abbreviations in our own cyphers; as the horns of the Ram, the head or front of the Bull; while in some of the other divisions are groups, which have no apparent connexion with either greek or egyptian mythology. The Twins, for instance, are two sitting figures of animals resembling apes. Cancer contains the head of a bird, and the tail of some reptile or insect. *Libra* and *Aquarius* are the same as our own. *Virgo* consists of three ears of corn united by a fillet; the same number is common on ancient monuments as an emblem of fertility or plenty, and as an attribute of *Isis*, as, for example, in the figure of *Mesori*, or *Isis* nursing *Horus*, formerly alluded to;ⁿ and in a picture belonging to an

ⁱ *Sonn. Scip.* l. I. c. 21.

^k *Antiq. Expliq.* tom. II. pt. II. pl. cxx.

^l *Pl.* I. p. 487.

^m *Œd. Ægypt.* tom. III. p. 182.

ⁿ *Sup.* p. 141, conf. *PLATE V.* No. 4.

ancient manuscript of Hyginus, according to Salmasius,^o the figure of Virgo is represented bearing an equal number in her hand. Of these the modern sign of Virgo is doubtless an abbreviation. The only edited work of arabic astrology where I have had opportunity to observe the zodiacal cyphers, is the *Globus cœlestis cuficoarabicus*, published by Assemani. Scaliger asserts that the signs of the planets are also common in the most ancient manuscripts. They occur, too, in gems,^p with the exception of that of the orb which we inhabit.

It seems very doubtful how far these symbols, in their present form, hieroglyphics as they are, ought to be considered, as they frequently have been, of pure egyptian origin. Aquarius, among those of the zodiac, is evidently so; to which we may, perhaps, add Libra, from its resemblance to one of the figures of the theban tomb. The sign Cancer, too, as stated in our remarks on that portion of the zodiac, seems to be an abbreviation of the hieratic character *Scarabee*. Among the planets, the Sun and Moon are certainly the egyptian hieroglyphics of those luminaries; but the globe and crescent suggest themselves so naturally to the human imagination, as concise methods of representing those familiar objects, that hardly any inference can be drawn from that circumstance respecting their origin. It must, however, be observed, that the sign of the terrestrial globe, which does not appear to have been in use among the more ancient greek or roman astrologers, is the same as that which

^o In Solin, p. 872, G. See also the figure of Virgo, ap. Grot. in German. phœnom. p. 14.

^p Montfauc. Ant. expl. tom. ii. pt. ii. pl. clix. clxviii. clxix.

Porphyry^a states to have been the egyptian symbol of *region, country, earth*; whose testimony has also been confirmed by recent discoveries.^r Salmasius, however, states, that it occurs in old mathematical works as the representative of Sphere, Circle.^s The sign of Venus (♀) is the well-known egyptian emblem of life, the globe and cross. Salmasius^t supposes it to be a corruption of Φ, the initial of φωσφόρος, one of the titles of the planet, a notion more fanciful than plausible. That of Saturn is precisely the same as the modern coptic letter **Ϣ**, the representative of the old hieratic **Ϣ**. Salmasius would have it a contraction of the Κρ. of Κρόνος. Mercury (♿) is apparently the caduceus, which may more reasonably be supposed a greek than an egyptian emblem, being an invariable attribute of this deity in the greek mythology, while there is no trace of its connexion with the Thot of the banks of the Nile. The same author mentioned above supposes this cypher to represent the St of Στίλβων, an epithet of Mercury, which is still less admissible than his other derivations, the more since, as he himself observes, it presupposes a latin and not a greek S. There is more speciousness in his supposition, that Mars (♂) is a contraction of the θρ of Θούρος, and Jupiter (♃) of the radical letters of the word Ζεύς, as in ancient manuscripts their respective forms frequently show traces of such an origin.^u Scaliger's derivations^v are, for the most part, very imaginary.

^a Ap. Euseb. Præp. Ev. p. 41, D. et Procl. in Tim. Plat. p. 216.

^r Young, Encycl. art Egypt, No. 85. Champol. Précis. du syst. hiérog. tabl. génér. No. 240.

^s In Solin. p. 874.

^t Loc. sup. cit.

^u Vid. Du Cange. and Ptol. Tetrab. sup. cit.

^v Ad. Manil. p. 506. There is an essay on this subject, by Frisch, inserted in the Miscel. Berolin. tom. iv. p. 65, which contains a number of

Saturn, with him, is the scythe of its patron deity ; Jupiter, the thunder of Olympus ; Mars, the shield and spear of the god ; Venus, the looking-glass of the goddess ; Mercury, the caduceus. Goguet^w would have the signs of the planets to be of arabic origin, because they are the same as the chemical cyphers of that nation ; but it were more reasonable to suppose, that they were transferred in later times from the astrology of the Arabs to their alchymy ; from the more ancient mystical or magical science to the more modern ; as it can hardly be supposed that the chemical studies of this people preceded the age of the manuscripts above noticed, or of the gems where these characters occur, given by Montfaucon, some of which, being of no inelegant workmanship, must be of a comparatively flourishing period of roman art.

other conjectures respecting the origin of these cyphers, but resting on no authority, and very arbitrary and fanciful.

^w Origine des loix, tom. iv. p. 799, conf. Bailly, hist. de l'astr. anc. p. 518.

APPENDIX.

APPENDIX.

No. I.—PAGE 12.

THERE appears to be an inclination in some quarters to doubt, or to deny altogether, the existence of such a thing as a year of three hundred and sixty days, among the Egyptians, or any other nation of antiquity ; but not having been able to perceive any reasonable ground for this scepticism, I have been willing to adhere to the commonly received opinion. This mode of reckoning certainly seems such as would offer itself instinctively to the human understanding, when making the first advances in the arts of civilized life. After the computation by nights and days, the first step towards a more artificial division of time would be the observation of the courses of the moon. The synodic month is twenty-nine days and a half ; but as it is not to be supposed that barbarians would calculate fractions of days, they would therefore reckon their month in round numbers at thirty days. In the same way they would observe that the moon changed twelve times in the course of the year. They would therefore naturally assign their year twelve months. This account of the first rude formation of a calendar seems so simple and obvious,^a that one might feel surprised that its accuracy should be questioned, even were it

^a Vid. Scalig. de Emend. temp. p. 12, sq. Sir I. Newton, Chronol. p. 71. Jackson, Chronol. Antiq. vol. ii. p. 1, sqq.

not supported by a mass of tradition and authority, both greek and barbarian, such as can hardly be brought to bear on any other equally remote point of antiquity. That any people should be willing long to adhere to so imperfect a form of year, without correction of any kind, is no doubt highly improbable. Those who were anxious that its revolutions should correspond with the changes of the seasons, would endeavour to effect this, in as far as their imperfect means of calculating these changes would permit, by some vague and irregular mode of intercalation, by months or days, as judged necessary from time to time. As they advanced in politeness, they would fall upon more accurate and settled methods: those who, like the Egyptians, preferred a purely solar year, by the permanent addition of the five epagomenæ, or days extraordinary, attached to no month; others, whose habits led them to regulate their feasts with reference to the phases of the moon, as well as of the sun, might, like the Greeks, make their months alternately of thirty and twenty-nine days, their year of three hundred and fifty-four, and keep it to its positions by lunisolar cycles. This, accordingly, has been the opinion generally entertained by the learned concerning the gradual progress made by these two nations respectively towards the final settlement of their calendar.

Professor Ideler^b is the only chronologer, as far as I know, who has declared himself decidedly, and in detail, against the existence, at any period, of this form of year of three hundred and sixty days; and yet his authorities, which he adduces, as upon all other occasions, with great fidelity and impartiality, appear to me altogether in favour of, rather than adverse to, the opinions which he endeavours to confute. With respect to the egyptian calendar, after entering at some length into the inquiry at what time it may reasonably be supposed to have been finally arranged by the addition of the epagomenæ, he appears to decide in favour of the date assigned by De la Nauze, namely, the year 1322 B. C.^c But, in another place, with something which looks like inconsistency, while contro-

^b Techn. Chronol. Bd. i. s. 187.

^c Vid. Sup. p. 15.

verting the views of Desvignoles, a strenuous supporter of the year of three hundred and sixty days, he adduces the well-known egyptian fable, that the five epagomenæ were the birth days of five principal deities, as proof that “the supplementary days were introduced before all historical ages, at a period concerning which only a dim tradition has been preserved.”^d But, even admitting this, the question would be only with respect to the period, as they were still supplementary days to an older and deficient reckoning. What that reckoning was, the subsequent form of the egyptian calendar itself seems to declare, namely, a year of three hundred and sixty days. This, however, M. Ideler does not admit; but, from some confusion or inaccuracy in a passage of Plutarch, where the fable is narrated, would have the ancient measure of time to have been a lunar year. The account of Plutarch^e is, that “Rhea having fallen with child to Saturn, the Sun inflicted the curse upon her, that she should produce neither on month nor year; but Mercury, playing at dice with the Moon, gains from her the seventieth part of her light, out of which he formed five days, which were added to the three hundred and sixty, and called epagomenæ, and honoured as the birth-days of five deities; on the first was born Osiris, on the second Arueris, on the third Typhon, on the fourth Isis, on the fifth Nephthys.” Five, however, are the seventy-second, not the seventieth part of three hundred and sixty; and, accordingly, Scaliger^f reads *ἑβδομηκοστὸν δεύτερον* for the edited *ἑβδομηκοστὸν* of Plutarch; and there can be little doubt that this was at least the sense of the author. M. Ideler, however, supposes Plutarch to mean a lunar year, which would consist of three hundred and fifty days, five being the seventieth part of three hundred and fifty. But have we any better authority for a lunar year of three hundred and fifty days in antiquity, than for a lunisolar year of three hundred and sixty? Have we, indeed, a shadow of authority for any such mode of computation? and is the existence of such an one more credible than of that which the professor rejects? Besides, the five added to the old year would,

^d Techn. Chron. Bd i. s. 190.

^e De Is. et Os. c. 12.

^f De Emend. Temp. p. 185.

upon this principle, have made it consist of only three hundred and fifty-five, not three hundred and sixty-five days. In no case can the tradition be reasonable or intelligible, unless it be understood as of an addition of the five epagomenæ to an original three hundred and sixty. Diodorus informs us, that in the city of Acanthus were three hundred and sixty priests, whose office, according to ancient usage, was, one on each day of the year to bring water from the Nile, and pour it into a vessel perforated with holes; and we find superstitions of a somewhat similar nature, with an equal number of ministers, established in other places.^s Why the number of these priests should have been limited to three hundred and sixty, rather than three hundred and sixty-five, unless at the remote period of antiquity, when the rite was instituted, the egyptian year had consisted of the former rather than the latter number of days,—or why they should have omitted five days in a custom which, as Diodorus remarks, was meant to comprehend every day in the year,—I am unable to see.

With respect to the greek year, this argument appears equally unsatisfactory. There exists a great mass of unquestionable evidence, that, according to the unanimous voice of the most ancient tradition, twelve months, consisting of thirty days each, formed the basis of the primitive hellenic calendar, the only attempt ever made to invalidate which resolves itself into an hypothesis, that the sum three hundred and sixty, or twelve times thirty, was adopted in vulgar language as a convenient mode of reckoning years and months in round numbers, though unknown in practical use at any period,—a conjecture which is as inadequate to explain away the positive terms in which the year of three hundred and sixty days is

^s *Bibl. histor. i. § 97, conf. § 22, not. Wess. ad loc.* It would appear that modern travellers have observed traces of these curious rites still existing in Egypt, as transferred to the superstitions of the coptic church. “*Vers la fin du siècle passé,*” says the satirical Pauw, “*l’évêque d’une ville connue sous le nom de Siout, qu’on sait être la Lycopolis des anciens, montra au voyageur Vansleb les débris d’un monastere copte, où trois cent soixante religieux cherchaient sans cesse la pierre philosophale.*” *Recherches sur les égypt. Berl. 1773, tom. i. p. 299.*

spoken of as an historical reality, as to account for the constancy and universality of the tradition itself, even after the greek reckoning became purely lunar of three hundred and fifty-four days, with months alternately of thirty and twenty-nine.^h

M. Ideler's general and most forcible objections appear to refer, not so much to the existence of this form of year among any people, as to the improbability that any should long have adhered to it without intercalation, which was a part of the system of Desvignoles,ⁱ to confute whom his arguments have chiefly been directed. I regret not having had an opportunity of referring to the work of Desvignoles here alluded to; in this respect, however, I feel inclined to agree with his opponent, but differ only in supposing that the year of three hundred and sixty days is, as well with reference to tradition as to its own internal evidence, more likely to have been the basis of the improved calendar of the Egyptians, than the lunar year proposed by himself; and that, with this original simple form, a people in the infancy of civilization might, in feeling their way to improvement, have tried various modes of intercalation to adapt it to the seasons, and a considerable time might have elapsed before they established the five epagomenæ as a substitute for all others.

As for the argument in favour of the transcendant antiquity of this last-mentioned institution, derived from the circumstance that the five days themselves were fabled the birth-days of Osiris, Isis, and other distinguished deities, I confess it appears to me altogether fallacious. It can only be valid on the supposition, that the year of three hundred and sixty-five days is as ancient in Egypt as the worship or knowledge of the deities themselves, which would involve a very great paradox. The worship of Osiris and Isis, the very elements or essence of the egyptian godhead, may safely be supposed as ancient as the religion of the Egypt-

^h Vid. Scaliger, de Emend. temp. p. 22, sqq. Petav. de Doctr. temp. lib. i. c. 6, and Var. Diss. lib. iv. c. 2, sqq.

ⁱ Chronologie de l'histoire sainte, l. vi. c. 1, tom. ii. p. 651, sqq.

ians, and, consequently, more ancient than their first adoption of the habits of civilized life, since the superstitions of every people, if of native growth, (as there can be no doubt those of Egypt were,) originating in their barbarism, are afterwards transferred and engrafted on their political institutions. But who can doubt that the year of three hundred and sixty-five days is the work of an already advanced state of civilization, when the egyptian pantheon (as shall be made evident from the names of the months, in the sequel of the text) existed in all its integrity? and it were the height of extravagance to maintain, that, at this epoch, the godhead of Osiris and Isis, the very basis of that pantheon, and of whom all its members were little more than personifications, could be unknown on the banks of the Nile. The celebration, therefore, of the nativity of the five deities on the epagomenæ can only be reasonably understood as of some form of consecration of the new days, or commemoration of their introduction, at whatever period that introduction may have taken place. Similar feasts were common in the egyptian calendar, as the birth of Harpocrates, the birth of the eyes of Horus,^k the death of Osiris. How unreasonable it were to take this sort of tradition by the letter, as involving allusions to real events, we may judge by examining the details of the above fable, as related by Plutarch.¹ We have seen that Rhea having become pregnant by Saturn, the Sun cursed her; but, by the good offices of Mercury, she was enabled to bring forth her five children, Osiris, Aroueris, Typhon, Isis, Nephthys, on five successive days. Yet, in the same chapter, we are told, that Osiris and Aroueris were the sons of the Sun, Isis of Hermes; and that, while yet in their mother's womb, Isis and Osiris had connexion, the fruit of which was Aroueris, who just before was called brother of Osiris, and offspring both of Saturn and of the Sun! Who does not see that all these legends are obscure enigmas, bearing reference to no historical facts, but to physical or astronomical phenomena, and so confusedly repeated by Plutarch, as to have become still more dark and mysterious than from their very nature they must originally have been.

^k Plut. de Is. et Os. c. 52.

¹ De Is. et Os. c. 12.

Diodorus also gives this fable, but more briefly, and in somewhat different terms. According to him,^m Saturn, having married his sister Rhea, begat Osiris and Isis, or, as others asserted, Jupiter and Juno, from whom were born the same five deities mentioned by Plutarch. And both authors agree in stating,ⁿ that no sooner was Osiris born, than he set about preventing men from eating each other; and Isis contributed her share towards raising them from a level with the brutes, by teaching them the art of cultivating corn. So that, if historical value be assigned to the tradition, it would, if it prove the antiquity of the Egyptian year at all, also prove that the people by whom it was established were cannibals, barbarians of the lowest and most degraded caste!

No. II.—PAGE 15.

It is singular enough that this author, one of the most distinguished chronologers of a nation, among whose failings a disregard of truth is by no means conspicuous, should, throughout his otherwise learned and valuable works, so often broadly and positively advance as acknowledged facts, statements totally devoid of all reasonable probability, if not utterly and palpably false. According to him, previous to the arrival of Cecrops, the Athenians had a year of three hundred and sixty days; after his improvements, it consisted of three hundred and sixty-five, that is, twelve months, and five epagomenæ, as among the Egyptians. Thales introduced the tropical year of three hundred and sixty-five days and a quarter, which was again altered by Solon into a lunar year of three hundred and fifty-four days. The year of three hundred and sixty-five, similar to that of Attica under Cecrops, was, he asserts, also established at Rome by Numa. Upon all this one observation will be sufficient: *Fides sit penes auctorem.*

^m Lib. i. § 13.

ⁿ Plut. op. cit. c. 13. Diod. lib. i. § 14.

NO. III.—PAGE 16.

The language of some of the ancient commentators seems also to hint at this, who assert that the rising of Sothis was the new-year's-day of the Egyptians; as Porphyry,^o *Νουμηνία δὲ αὐτοῖς ἡ Σώθειας ἀνατολή* which may allude to a tradition concerning the position it occupied at its original institution. Some authors, however, and among them De la Nauze^p himself, have inferred from this and other vague passages of the ancients, that the Egyptians had two forms of year, one moveable and sacred, dating from the first of Thot for the time being; the other fixed, and in civil use, commencing with the day on which Sirius rose heliacally. The falsehood of this opinion has been amply shown by Ideler^q and Biot;^r and before them by Petavius,^s Jackson,^t and Fréret,^u although this last author, with an unfairness which I have found in too many instances characteristic of his mode of criticism, contradicts himself in his controversy with Newton,^v when he finds it suit his argument, and advocates the same opinion in disproof of which he had before written a long dissertation. On this the honest Court de Gebelin^w remarks: M. Fréret contre Newton accorde donc des choses, que nie M. Fréret contre De la Nauze. Est ce précipitation? est ce oubli?

NO. IV.—PAGE 22.

Dupuis, in the same essay above quoted, where he supports

^o De Antro nymph. p. 256, edit. Cantab. 1655.

^p Mem. Acad. Inscr. xiv. p. 351. Scalig. de Emend. temp. pp. 186, 368. Bainbr. Canic. p. 26.

^q Untersuch. üb. d. astron. Beob. &c. s. 96. Techn. Chronol. Bd. i. s. 174. ^r Recherches sur l'astron. égypt. p. 310.

^s De Doctr. temp. lib. iii. c. 2. Var. diss. v. 4.

^t Chronol. antiq. vol. ii. p. 78.

^u Mém. Acad. Inscr. xvi. p. 308.

^v Défense de la Chron. p. 393.

^w Monde prim. tom. iv. p. 132.

this opinion, states,^x that the Egyptians were in error in supposing that the coincidence of the first of Thot with the heliacal rising of Sirius took place after 1461 revolutions of their civil year; according to him, it would only have required 1424. The error is the critic's own, who supposes the visible heliacal year of the star in that age and latitude to have been 365^d 6^h 9' 11". An antiquary of a thousand years hence might quote the testimony of Dupuis as proof of the backwardness of mathematical science in the eighteenth century, with as much reason as he himself appeals to Herodotus as evidence of the ignorance of the Egyptians.

NO. V.—PAGE 25.

The attempt of Ideler^y to discover an allusion to the sothiac cycle in the fable of Herodotus concerning the rising of the sun in the west, is not fortunate; and the less so that it is grounded on an uncritical interpretation of the grammatical structure of the passage in which that fable is contained. So that, as Biot has observed,^z concerning another equally unsuccessful attempt: "Si l'énigme proposée à Hérodote n'est pas une de ces forfanteries, dont les mêmes prêtres se montraient si prodigues envers lui et les autres voyageurs, elle reste encore à interpréter." The same author has shown in a satisfactory manner, that all similar endeavours to assign mysterious significations to this fable must be vain; since^a "le nombre que l'on prétend interpréter, n'est pas dans l'énoncé égyptien, et qu'il résulte seulement du mode arbitraire d'évaluation qu' Hérodote y applique." The truth of this remark will be apparent to whoever collates the Egyptian chronology of Herodotus, the basis of which is his own computation of a hundred years to three generations, with the dynasties, as given by the native authorities, Manetho and the Old Chronicle.

^x P. 117.

^y Techn. chronol. Bd. i. s. 138.

^z Rech. sur l'astr. égypt. p. 318.

^a Ibid. p. 226, 314.

Dr. Hales'^b interpretation of the riddle is still less plausible. After reproving preceding chronologers for having " idly taxed the relation of the priests, as a falsehood, a dream, or a fable," he himself, without any ceremony, reduces the three hundred and forty-one generations of this most veracious hierarchy to about fifty, and the eleven thousand three hundred and forty years of Herodotus to seventeen hundred, and then applies the sothic cycle to the result, in a manner which, to me at least, is not very intelligible. It is evident, however, that by this arbitrary mode of proceeding, any falsehood, any dream, or any paradox however absurd, may be constituted an ingenious riddle and solved accordingly.

For my part I am at a loss to see, how the statement that the sun had risen where he now sets, and set where he now rises, can by any exercise of subtilty be made to bear reference to the anomalies of the cycle. As the seasons shifted their position in the egyptian year, the sun might be said to effect his summer where formerly his winter conversions, and to produce autumn where formerly spring. But the sun rose in the east and set in the west, at one period of the cycle as at another, and by no ingenuity can the contrary statement be shown to be any thing but a gross falsehood.

I confess I feel inclined to believe with Scaliger, Stillingfleet, and other sagacious critics, whose opinion Dr. Hales treats so lightly, that here, as in other similar instances noticed above,^c the priests were merely endeavouring to amuse themselves, at the expense of the credulity and simplicity of their greek admirers.

No. VI.—PAGE 29.

The opinion of De la Nauze, which I had imagined to have few or no supporters, has however lately acquired importance,

^b *Analys. of Chron.* vol. i. p. 39. vol. iv. p. 412, sqq.

^c *Sup.* page 23, Note m.

from its having been adopted by the distinguished german chronologer mentioned in the foregoing note ;^d who is inclined to the belief, that the ancient mode of calculation, used by the astronomers of Chaldæa, since about the year 2240 B. C., which he assigns as the date of their earliest celestial observations, having been found deficient and imperfect in 747 B. C., had then been abandoned ; and the egyptian solar year substituted as a more simple and convenient mode of computation. My reasons for preferring the opinion stated in the text are as follows.

First ; the great improbability that the Chaldees, who were much better astronomers than the Egyptians, (as seems clear from the very fact that Hipparchus and Ptolemy made the babylonish observations the basis of their improved systems, while those of the Egyptians are not so much as hinted at,) should, after no less than fifteen hundred years of their own experience, have been reduced to the necessity of adopting from their less scientific neighbours, a new form of computation. Still less, had they even been reduced to this necessity, is it likely, that they would have found it expedient also to fix the commencement of their new year on the same day, and to call their months by the same names as the Egyptians. The very circumstance that the regulator of the nabonassaræan æra is the Thot of 747 B. C., or the twenty-sixth of February julian, appears in itself strong evidence that the whole system is of alexandrian, rather than of chaldæe original. It is scarcely credible, that a proud and superstitious hierarchy should at so advanced a period of their own civilization, not only servilely adopt a foreign calendar, with foreign names of the months ; but those names the titles of strange gods, members of the pantheon of their ancient and national enemies. This were the more improbable, since, as Hyde^e has shown, their subjects the Persians had used from a remote period of antiquity the year of three hundred and sixty-five days ; so

^d Ideler, *Untersuch. über die astron. Beob. &c.* s. 145, sqq. *Techn. chronol.* Bd. i. s. 205, sqq.

^e *De relig. vet. Pers.* c. xiv.

that it would have been unnecessary to travel to a far distant and foreign country, in search of so simple an institution.

Secondly; the terms of the text of Ptolemy, from whom all our information respecting this era is derived, appear inconsistent with such a belief. That author, (or rather Hipparchus whom he follows) invariably distinguishes between the era as that of Nabonassar, ἀπὸ Ναβονασσάρου, and the year as that peculiar to the Egyptians, κατ' Αἰγυπτίους; and in so pointed a manner, as can hardly admit of a suspicion, that the latter was common to both nations. Had the astronomical reckoning of the Chaldees been attached to this form of year, with the same names of the months, in their corresponding positions with respect to the sun's course, during nearly six centuries, it would in fact have become, in as far as Hipparchus was concerned, in an astronomical point of view, equally, or rather by preference, the chaldee year; for there is not a single observation of the Egyptians themselves recorded by either Hipparchus or Ptolemy. So that the expressions κατ' Αἰγυπτίους, so often repeated by them, might have been omitted or changed into κατὰ Χαλδαίους.^f That this was merely a standard reckoning, adopted for its convenience by the alexandrian Greeks, appears, from its being applied by them precisely in a similar manner, to the calendars and periods of all the other nations without exception, whose observations of the heavens they quote. Besides the egyptian dates, we not unfrequently find those of the athenian archons, and attic lunar months, added for farther illustration; but the old babylonian civil calendar being no way familiar to the Greeks, and having been supplanted by that of the macedonian conquerors long before the days of Hipparchus, it had been quite useless for him, who wrote merely for his own countrymen, (still more so for Ptolemy,) to have assigned dates to the babylonian eclipses

^f It will be observed, that the term κατ' Αἰγυπτίους, has more force than that of ἐτῶν αἰγυπτιακῶν, also frequently employed by Ptolemy. The egyptian year, if adopted by the Chaldees, might reasonably continue to be named ἔτος αἰγυπτιακόν, as distinct from their old vulgar and national reckoning. But the computation, κατ' Αἰγυπτίους, or according to the Egyptians, must refer to something peculiar to themselves.

according to that obsolete mode of computation. Ptolemy^s quotes two observations of the roman mathematician Mene-la-us, assigning them their dates according to the egyptian year, without the least hint at either month or year of the roman calendar ; but we cannot infer from this that the egyptian year was in use in Rome.

The history of the chaldean calendar is itself so excessively obscure, that on these points much must be left to conjecture ; but, at least, the mere existence of the nabonassarean æra is not sufficient, without farther evidence, to justify our admission of so important a fact in the history of ancient civilization, as the servile adoption of the egyptian year, with its months, their names, and positions in the seasons, by the Chaldees, in the year 747 B. C.

In as far however as modern authorities are concerned, it may be observed, that M. Ideler is mistaken in supposing, as he does,^h that Fréret was the first or only chronologer who held the opinion here adopted, having overlooked (not to mention our own Jacksonⁱ) no less a person than Petavius,^k the prince of modern chronologers, who condemns, in strong terms, the contrary sentiment entertained by Scaliger. Nam *Ægyptiorum propria fuit illa æquabilis annorum forma, quæ ab æra Nabonassari tempora deducebat ; quorum titulus solus chaldaicus fuit, anni descriptio Ægyptiorum propria ; cum enim Ægyptii mathematicas omnes observationes ex Chaldæorum commentariis didicissent, ubi illæ Nabonassari æræ consignatæ legébantur, cum epocha Nabonassari ad anni sui formam applicarunt ; similiter ac si quis Saracenorum Arabumque res gestas ex nostris in historiam redigens, ab initio Mahommedis annos numeret ; aut quemadmodum chronologi vulgo anni juliani formam, ad orbis conditi, et nationum omnium tempus accommodant.*

^s Magn. Constr. l. vii. p. 170, 171.

^h Untersuch. s. 146. Techn. chronol. loc. cit.

ⁱ Chronolog. antiq. vol. ii. p. 80, sqq. whose remarks are extremely sound and conclusive ; though he seems also to have claimed the credit which Ideler gives Fréret, of having been the first who took the view of the nabonassarean æra here supported.

^k De Doct. temp. l. iii. c. 6.

No. VII.—PAGE 30.

As the year of three hundred and sixty-five days falls short of the heliacal year of Sirius at the regular rate of six hours each revolution, consistently with the visible motion of the heavenly bodies, Sirius would rise four years successively on the same day of the egyptian year, as, for instance, on the first of Thot, and then pass on to the next. In framing a cycle, therefore, for the purpose of chronological computation, it would be necessary to establish one of the four years on which Sirius so rose on the first of Thot, as the fundamental epoch or first year of the period, say the first of the four. In order to find the year of the cycle elapsed at any particular time, we should then multiply by four the number of days counted from the first of Thot for the time being, itself included, to the day on which Sirius rose heliacally in the year for which the calculation was made, itself not included, adding to the product a number equal to the times which Sirius had already risen heliacally on that day. The sum will be the year of the cycle required.

For example, if Sirius rose for the third time on the tenth of Phamenoth, the seventh egyptian month, what was the year of the cycle?

$30 \times 6 + 9 = 189$ days, $\times 4 = 756 + 3 = 759$ years. So that the date required was the seven hundred and fifty-ninth year of the cycle.

Hence at the moment when Sirius rose heliacally for the third time on the tenth of Phamenoth, there would have elapsed of this cycle 758 full julian years, and 758 egyptian years, six months, nine days.

According to the most accurate calculations,¹ Sirius rose heliacally on the first of Thot, in the years B. C. 1325, 1324, 1323, 1322; and consequently in A. D. 136, 137, 138, 139.

¹ See Dodwell, *append. ad diss. cypr.* § 17. *Design. de ann. ægypt.* in *Misc. Berol.* t. iv. p. 14. *Ideler, Techn. chronol.* bd. i. s. 128.

It seems more probable that the Egyptians would choose the first year of the coincidence as the epoch of their cycle, in which case we ought to prefer 1325 B. C. as the basis of any chronological computation grounded on its revolution. But as Censorinus, the first author from whom we have any authentic details respecting the canicular reckoning, assumed the year 139, and consequently 1322, as a standard, and has been followed in this by most of the moderns, I have not been willing to depart from the received method.

NO. VIII.—PAGE 49 and 69.

I must not here overlook the circumstance, that many authors,^m assuming that Sothis the star and Thot the deity were originally connected in name and attribute, have inferred, that the commencement of the Egyptian year was, at its early institution, or at least from the period of its first month having received the name of Thot, fixed to the heliacal rising of Sirius; an opinion which, if admitted, would interfere very much with those advanced in this dissertation; but which, I am convinced, is altogether false. It appears to rest chiefly upon the supposition, that Sothis, like the Greek appellation of the same star, meant *dog* in the Egyptian language; and that Thot or Mercury being also represented among the Egyptians in the form of a dog, the two terms, Sothis and Thot, must be considered as synonymous, the star being merely a celestial representative of the god; from whence it is farther inferred, that the same name and mythological character having been applied to the first day of the year, as to the star, the one must necessarily, in the infancy of the calendar, have coincided with the heliacal rising of the other.

^m De la Nauze, Mém. de l'Acad. des Inscr. tom. xiv. p. 347. Fréret, Déf. de la Chron. p. 407, sq. Gatterer, Weltgesch. Bd i. s. 214. Bailly, Hist. de l'Astron. anc. p. 289. Ideler, Untersuch. &c. s. 71. Techn. Chron. bd. i. s. 126, &c.

Not one of these assumptions, however, rests on any satisfactory evidence. On the contrary, each one of them appears to be repugnant to the spirit, as well of the pure mythology as of the figurative language of Egypt. That the names Sothis, and Thot or Thooût, as written by the Egyptians, are the same, or that either of them denoted *dog* will, I conceive, hardly be maintained by any coptic scholar of the present day; nor is there a single ancient authority for such a belief. Kircher, as is well known, interpolated several articles out of his own imagination into the copto-arabic lexicon edited by him, and among others, ΠΙCΙΘΘΙC, or ΠΙCΙΩΘΙ was inserted with the signification *dog* attached to it; a fraud suggested by the above mentioned fallacious inference, that because Sirius is called the dogstar by the Greeks, and Sothis by the Egyptians, Sothis must therefore denote *dog* in Egyptian. Several learned menⁿ have been led into error by the cheat, which was however detected, and exposed by Jablonski.^o Yet M. Klaproth^p has recently advanced this word, as the egyptian name of the animal. He admits that it rests on the sole authority of Kircher, and that it has been surreptitiously inserted by him in the Scala Magna; but observes, that as Jablonski had not proved, in opposition to Kircher, that it was not really an egyptian word, he is willing to adopt it. But surely this is a strange method of criticism. Is the fiat of Kircher sufficient to establish a word as pure egyptian, for which there is no other authority, at the very moment when he is found guilty of a fraud? At this rate, any lexicographer who wished to fill up space, might insert as many words out of his own head as suited his convenience, and when called to account, has only to challenge his critics to show them to be spurious. The *onus probandi* lay not on Jablonski, but the Jesuit and his followers. The learned orientalist, however, does not seem to insist on the genuineness of the word,^q and

ⁿ Fréret, et al. sup. cit. Bochart, Hiéroz. p. 691. Ed. 1712.

^o Panth. lib. iii. cap. 2. § 9.

^p Prem. Lettre à M. de Giulianoff sur les Hiérog. Acrologiques, pp. 17. 43.

^q Lett. II. sur les Hiér. Acrol. p. 31.

is too sound a critic not to be well aware of its real inadmissibility, though he may carelessly have quoted it for the sake of argument.

The name Sothis, according to Plutarch,^r signified conception or pregnancy, which, if the etymology were admitted, would contain a very palpable allegorical allusion to its supposed influence on the inundation, big with the fertility and prosperity of Egypt. The value of his interpretation, however, is destroyed by an attempt (not unusual with him in such cases) to strain, by a silly pun, some analogy between the egyptian sense of the term, and the idiom of his own language; for κύνειν, says he, in greek, means to conceive, as σωθί in egyptian; hence the greek name κύων of the star. The falsehood of this conceit, if not in other respects palpable, it were easy to show by a reference to the most ancient of greek fabulists, who thus describes the dog star:

... ἀστέρηρα ...

"Ὅς ῥά τ' ὀπώρας εἶσιν, ἀρίζηλοι δέ οἱ αὐγαὶ
Φαίνονται, πολλοῖσι μετ' ἀστράσι, νυκτὸς ἀμολγῶ·
"Ὅν τε κύν' Ὀρίωνος ἐπικλήσιν καλέουσιν."^s

Orion was a great hunter of the early greek tradition, transferred by the fable at his death into a brilliant constellation; and another very bright star in his neighbourhood was naturally enough called his dog. Greek mythologists are unanimous on this point. But the noxious influences ascribed by the poet to the star still farther disprove any connexion, not only between the two names, but between greek and egyptian superstition in general, in as far as it is concerned. For, on the banks of the Nile, its reappearance was hailed as the attendant of the inundation, the most joyful and agreeable season of the year, and as the forerunner and guarantee of divine favour and a productive harvest. Whereas the greek poet describes it merely as "an evil omen announcing scorching heat to wretched mortals:"

^r De Is. et Os. c. 61.

^s Homer, Il. χ. 27.

Λαμπρότατος μὲν ὄγ' ἐστὶ, κακὸν δέ τε σῆμα τέτυκται,
Καί τε φέρει πολλὸν πυρετὸν δειλοῖσι βροτοῖσι.^t

That Sothis signified *dog-star* or *dog*, or had any original connexion with Thot, is still farther disproved by the terms in which it is mentioned, as well by Plutarch himself in various passages, as by a multitude of other classical illustrators of egyptian antiquity. “The Egyptians,” says Damascius,^u “assert that *Sothis is Isis*, while the Greeks consider this star as the same with Sirius, and Sirius is the same as the Dog of Orion.” Horapollo:^v “When they would denote a year, they draw Isis, that is, the figure of a woman, by which they also represent the goddess. But *Isis is with them a star*, called by the Egyptians Sothis, but by the Greeks Dog-star, which seems to reign over the other stars, and by the rising of which they regulate the prognostications of their calendar.” Plutarch:^w “The Egyptians consider the Dog-star as sacred to Isis.” It were needless to accumulate quotations, but many other authorities might be adduced, whose evidence corresponds with those above cited. From all this it appears, first, that the star which the Greeks called Dog-star, was indeed the same which the Egyptians knew by the name of Sothis, but there is no trace of this name itself denoting a dog, or any thing of the kind. Secondly, That Sothis was a representative of Isis, or at least consecrated to that goddess, and not to Thot; whose name, as far as I know, is never mentioned in connexion with this star by any author worthy of notice; which would be unaccountable considering the multitude there are who have treated minutely of both, if the star were, I will not say dedicated to him, but actually himself, the two names being synonymous. Thirdly, That Sothis being Isis, or consecrated to Isis, was a female star; hence the name also is with the Greeks, as might be expected, feminine, ἡ Σῶθις; whereas Thot is a male deity, and the greek ἀστροκύων or κύων Ὀσίωνος is also masculine. It will

^t Il. χ. 30.

^u Apud Phot. cod. ccxlii. p. 1043. Ed. Schott. 1611.

^v Hierog. lib. i. c. 3.

^w De Is. et Os. c. 61.

hardly be supposed that the Egyptians gave either their deity Isis, or her favourite celestial orb, the name of *she-dog*. On this point we have still a passage of Plutarch^x more explicit than any hitherto quoted, and totally incompatible with such a supposition. The Egyptians, he informs us, supposed that the bodies of certain deities were preserved among themselves upon earth, “ while their souls were translated to heaven, there to shine forth as so many stars. Thus the soul of Isis is what the Greeks call Dog-star, but the Egyptians Sothis.” That Sothis was sacred to Isis may farther be gathered from the Egyptian zodiacs, where this star or constellation is represented as a heifer, one of the sacred emblems of that deity: the identity is not to be questioned, as the figure occurs regularly in its place in the sign Cancer, accompanied by accessories whose signification cannot well be misunderstood. But in no one of these astronomical monuments, or any others which I have seen, is there the appearance of a dog, or any animal in the least resembling one, still less of Thot, or his attributes or emblems, occupying a place in the portion of the sign Cancer devoted to the constellation Sothis. Traces of the Egyptian character of the star we have also in the later Greek or Roman mythology; as in a gem given by De la Chausse,^y where we have a female bearing ears of corn in one hand, and a plate of fruits or vegetables in the other, with the legend CEL. for *Σελήιος*, as justly interpreted by the ingenious author of the compilation.

All this seems to be confirmed by the following passage of Salt's Essay on Phonetic Hieroglyphics,^z which, if the value attached by him to his cyphers be admitted, would seem to put the matter beyond controversy: “ The phonetic name of Sothis is very frequent, but it is generally found accompanying a figure of Isis . . . it is composed of a star Σ, the upper half of a circle ⊖, and an egg Σ.”

The true etymology of the word Sothis is very doubtful. That suggested by Plutarch is in itself not devoid of specious-

^x De Is. et Os. c. 21.

^y Gemme antiche figurate, No. 109. Roma, 1700, 4to.

^z P. 48, pl. iii. Q.

ness, and has been ingeniously enough referred to the coptic language by Jablonski,^a who, however, in support of some favourite system, prefers another of a much less plausible description. I should be disposed, from the positive way in which Horapollo^b and others assert that the star was called Isis, or the star of Isis, to consider it as the compound ΣΟΥΘΗΣΙ, literally, the star Isis, or the star of Isis, contracted by the Greeks into Σωθις.^c On the other hand, the pristine signification of the name Thot or Thôout as written by the Egyptians, appears very obvious, from a comparison of the attributes of this god of science and all civil institutions, with

^a Panth. lib. iii. c. 2. § 10, pt. 2, p. 48.

^b Lib. cit. § 10. p. 52.

^c The variety Σήθ of the name, which might appear at variance with this derivation, rests on the sole testimony of Vettius Valens, an author of little weight, frequently quoted from MS., but not yet published. (Scalig. Can. Isag. p. 275. Ed. 1658. Marsh. Chron. Can. p. 9.) Plutarch, on the other hand, (de Is. c. 41. 49. 62.) asserts, that Seth, Σήθ, was an egyptian name of Typhon, denoting violence, which is much more probable; the word is apparently the same primitive radical as the arabic سَطَّ Sat, to burn up or destroy, (this being the peculiar occupation of Typhon); whence the name of *Satan*, whose character in the oriental mythus answers to that of the egyptian dæmon, the fiery fiend, or evil genius. Both are also occasionally personified as serpents. The greek Τυφώσις (the archaic form of the word) corresponds exactly in name as in attribute; this appellation being of pure hellenic origin, from τυφω, τυφος, signifying fiery or unwholesome vapours. The attempts to force an egyptian etymology upon it are worthy of no attention.

The identity of these mysterious personages, as typical of the *evil principle* in the common legend of the primæval human race, appears farther, from their having each been held to have been precipitated by the deity into the abyss. Concerning the true Satan, the prototype of all, we need cite no pagan authority. Mahomet calls the arabian dæmon Satan radjim سَطَانٌ رَاجِمٌ, Satan stoned, lapidibus obrutus. (Kor. Sur. xv. 17. conf. Not. Maracij et Gol. Lex. in v.) Concerning the egyptian Typhon, see Herodotus (iii. 5.) Concerning the greek, Hom. Il. β. 782. Hesiod. Theog. 821, sqq. Pind. Ol. iv. 12. Pyth. i. 31.

As it is not very probable that Typhon, the evil genius, and Sothis, the good genius, should be designated among the Egyptians by the same name, the form Seth, as applied to the latter, cannot be admitted on such indifferent authority.

the sense of the coptic roots of similar sound and orthography. ΘΟΥΤ in coptic means an assembly, meeting, or council.^d On the monuments, the deity is frequently represented bearing in his hand the hieroglyphic symbol^e denoting Assembly, Senate, πανήγυρις, &c., as evidently exercising an influence over their proceedings or periodical meetings; and we have authority to believe, that in a mysterious sense, assembly or Thôout, the egyptian Mercury, and scientific invention or improvement, of which he was patron, were nearly synonymous. “The god Mercury,” says Jamblichus,^f in his work on the egyptian mysteries, “was considered as the common genius of the priesthood, since the patron deity of science is one and the same in all. Hence the ancients dedicated the inventions of their own wisdom to Mercury, inscribing all their treatises with his name.” “In Egypt,” says Galen,^g “it was necessary that every new discovery in the arts should be approved of and sanctioned by the common council of the learned; after which it was inscribed, without the name of the author, on the sacred columns, and deposited in the archives. Hence so great a number of books ascribed to Mercury.” Here then Mercury, and the assembly of the learned, or college of priests, as public and ostensible authors of all inventions, are one and the same; Thôout therefore was merely a figure of the inventive and intellectual faculties of humanity. Proclus relates nearly the same thing of the Pythagoreans, whose school was formed on the egyptian model: τὴν κοινωσίαν ἠοπάζοντο τὴν ἐν ταῖς εὐρέσεσι τῶν δογμάτων, καὶ τὰ ἐνὸς συγγράμματα κοινὰ πάντων ἦν. After quoting these authorities, Jablonski observes:^h “Sponte consequitur, Thot proprie fuisse numen sacerdotale, quod sacerdotibus eorumque collegiis omnibus, itidem eorum inventis, ac scientiis cunctis preesse crederetur.” He then, however, as too commonly happens with him, passes over with neglect the more simple and obvious sense of the name of the

^d Croze. Lex. Ægypt. in v.

^e Champol. Précis du Syst. Hiér. p. 213, sq.

^f De myst. ægyptiac. initio.

^g Vid. Gale, not. ad Jambl. loc. sup. cit.

^h Panth. lib. v. c. 5. § 11. pt. 3, p. 170.

deity, to exercise his learning or his ingenuity in farfetched and less pointed illustrations.

It is evident, then, that the opinion now under examination, is far from being justified by any connexion between the names of Thot and Sothis. Another cause of error has been the notion, suggested by a superficial view of egyptian superstition, that Thot was the same person as Anubis, the *dog-headed* deity, which has gone much to confirm the belief that he was the same as the *dogstar*. This opinion is however also inconsistent with the pure egyptian doctrine. The greek, or rather the latin authors of the lower ages of classical antiquity, amid the confusion introduced by them into the ancient mythology, by their attempts to identify the gods of all the neighbouring nations with their own, were no doubt in the habit of calling both Thot and Anubis, and perhaps several other egyptian divinities, by the name of Hermes or Mercury. But these two, in the original pantheon, were distinct persons. The first was a deity of high rank and dignified office, as above described; and represented with the head of an ibis, or sometimes by the bird itself. The other was represented with the head of a dog, or rather, as M. Champollion,ⁱ I conceive justly, observes, of a jackal, mistaken by the Greeks for a household dog. His precise attributes are little known, but he seems to have been a very subordinate divinity, a drudge (or *lion's-provider* as it were) of Thot, in his capacity of secretary or chief minister of Osiris and Isis. The distinction between the two is laid down indeed accurately enough by several of the classics; who inform us that the sacred animals of the one were the ibis, and cynocephalus or egyptian ape; of the other, the dog or jackal.^k The one was worshipped at Hermopolis, the sacred city of the Cynocephalus; the other at Cynopolis, the sacred city of the Dog.^l Here accident opened a wide door to error; the ape called *dogheaded* by the Greeks being the emblem of the

ⁱ Préc. du syst. hiér. p. 155. The household dog, however, from the general testimony of authors, seems to have been also sacred to him.

^k Auctor. apud Jablonsk. Panth. lib. v. c. 1. § 3. c. 5. § 6. sqq.

^l Strabo, p. 1151. Ed. Falc. Ælian. Anim. x. 29. &c.

one deity, the *dog* that of the other, naturally led to a confusion of the two; and it is clear how obvious it was, for such fanciful interpreters farther to confound both with their Dog-star; which, after all, none of the more profound or discreet illustrators of egyptian tradition have done. Jablonski,^m although for the sake of arrangement he calls both these deities Mercury, in conformity with the old classical phraseology, has yet judiciously classed them as quite distinct personages of his pantheon.

No. IX.—PAGE 52.

Under the term *western*, I would be understood to include certain oriental nations of modern times, whose zodiacs, from their close resemblance to that of Egypt or Greece, cannot but be considered as borrowed directly or indirectly, in the vicissitudes of the history of science, from one or other of those countries. That such is the case with respect to the sphere of the Arabs and Persians is generally admitted; which makes it the more surprising, that a person usually so well informed on these subjects as De la Nauzeⁿ should assert, that “no connexion can be traced between the names of the signs which we have adopted from the Greeks, and those by which they are known among the Arabs, and other oriental nations, who are supposed to have best preserved the remains of the ancient egyptian sphere;” a statement disproved in the most distinct and positive manner, by almost every author, oriental or european, who has treated of these matters.^o Sir William Jones,^p it is true, strenuously asserts the claims of the Hin-

^m Panth. lib. v. c. 1. § 11. p. 25.

ⁿ Mém. de l'Acad. des Inscr. t. xiv. p. 360.

^o Scalig. ad Manil. p. 480, ed. 1600. Maracci, Not. ad alcoran, Sur. xv. v. 16. Gol. ad Alferg. p. 16. Hyde ad Ulugh Beigh. p. 4, &c. &c. conf. Jollois et Devilliers. Mém. sur les bas reliefs astron. in Descr. de l'Eg. p. 445, 446. Pl. A.

^p Asiat. Res. vol. ii. p. 289, sqq. artic. XVI.

dus, if not to the original invention, at least to the knowledge and use of the twelve signs, from the remotest periods of antiquity. But as the zodiac, which he^q and other illustrators of indian astronomy^r have given us, is precisely the same as that of the Greeks, it is impossible to suppose but that the one is borrowed from the other; and that the Greeks have borrowed from the Indians is hardly to be conceived. Sir William appeals to the vast antiquity of indian science; to the contempt of the Hindus for every thing foreign; and the scorn and ridicule with which their sages treat the notion of their having been indebted, directly or indirectly, to the Javans or Greeks, for any of their institutions. Yet, after all, he sums up with the conclusion,^s that “the practice of observing the stars began in Chaldæa, from whence it was propagated into Egypt, India, Greece, &c. before the reign of Sisac or Sacya, who by conquest spread a new system of religion and philosophy from the Nile to the Ganges, about a thousand years B. C.” It is not easy to reconcile this admission of a new system from Egypt in the tenth century B. C. with the immense antiquity of their astronomical science, and abhorrence of foreign innovation. If Sir William Jones could, consistently with his system, believe the paradox, that the egyptian Sisac conquered all Asia, and introduced a civil as well as a political revolution into India in the tenth century B. C., may we not be permitted to suppose, that the zodiac was borrowed from the Greeks, successors of Alexander, or the arab conquerors of the middle ages; and that Sir William’s indian authorities who assert the contrary, are as fallacious as those on whom he rests his belief of the empire of Sisac.

Mr. Bentley, a writer of equal authority on these points, has founded on the same evidence a very different opinion; treating very lightly both the antiquity of the astronomy of the Indians, and the genuineness of their supposed primeval records.^t “The most candid part of the Hindus,”

^q Lib. cit. p. 303.

^r Conf. Philosoph. trans. vol. lxii. an. 1772. Bailly, Hist. de l’astron. anc. Pl. I. p. 487.

^s P. 306.

^t Asiat. Res. vol. viii. p. 203.

says he, “acknowledge that literary forgeries are frequently committed, in consequence of the depravity of the age we live in, which can relish nothing but what is supposed to bear the stamp of antiquity. Hence learned men are under the necessity of fathering their works on the sages of early times;” and he adds, that on account of the great ignorance and superstition of the hindu reading public, “every species of literary imposition may be committed without the smallest danger of detection.”

Captain Wilfort^u informs us, after his Pundit, that the constellations of Cassiopea, Cepheus, Perseus, and Andromeda, were also in the indian sphere. He, too, with the natural partiality of an oriental antiquary, refers the origin of the names of these asterisms, as well as of the fables attached to them, to the tradition of the gymno-sophists. The impartial mythologist will perhaps judge differently.

“The Hindus” says Mr. Colebroke,^v another acute and laborious inquirer into the history of indian astrology, “have adopted the division of the ecliptic into twelve signs or constellations, agreeing in figure and designation with those of the Greeks... That they took the hint of this mode of dividing the ecliptic from the Greeks is not altogether improbable.” And in another place, treating of the correspondence of the Darésh’ cánás with the Decani of the egyptian, greek, and roman astrologers; after adopting the opinion of Huet the commentator of Manilius, that the word Decanus was corruptly formed by the astrologers of Alexandria, from the greek numeral δέκα, he observes:^w “The Sanscrit name apparently comes from the same source. I do not suppose it to be originally Sanscrit, since in that language it bears no etymological signification. For the same reason it is likely that the astrological doctrine itself may be exotic in India. One branch of astrology, entitled Tájaca, has been confessedly borrowed from the Arabians; and the technical terms used in it are, as I am informed by hindu astrologers, arabic. The casting of nativities,

^u Asiat. Res. vol. iii. p. 433.

^v Asiat. Res. vol. ix. No. 6. p. 347.

^w Ibid. p. 375, sq.

though its practice is of more ancient date in India, may also have been received from western astrologers; Egyptians, Chaldeans, or even Greeks." He also states, that one of their highest authorities, "Varáha Mihira himself, as interpreted by his commentator, quotes the Yavanas, (meaning perhaps grecian authors) in a manner which indicates that the description of the Dréshcánas is borrowed from them." One of these was called Yavaná charya—probably a greek philosopher of the name of Chares. All this is sufficient answer to the remarks of Sir William Jones on the contempt of the Bramas for the science of western nations.^x

No. X.—PAGE 58.

That this was the true meaning of Eudoxus appears from the peculiar tenor of the passage itself, fragment as it is, which evidently bears reference to a comparison drawn by that philosopher, between the motions of the sun, and those of some other heavenly body, whose retrograde course in the ecliptic was much more remarkable; and from the general context of Hipparchus it would appear that that heavenly body was the moon. The moon's nodes, or the points at which she crosses the ecliptic in her orbit, have a retrograde motion of $19\frac{1}{3}$ degrees every year; so that they shift through all the signs and degrees of the ecliptic in eighteen years, two hundred and twenty-five days. It would appear then probable, that Eudoxus, having just before remarked this great variation of the orbit of the moon, adds; ^y φαίνεται δὲ διαφορὰν τῶν κατὰ τροπὰς τόπων καὶ ὁ ἥλιος πρῶτος, ἀδηλοτέρου δὲ πολλῶ καὶ παντελῶς ὀλίγην' literally: "but the sun also appears to vary his tropical points, though much less perceptibly and in a very slight degree." The commentators have however understood him to say, that the sun one year effected its conversions farther to the north, an-

^x Conf. Delambre, Hist. de l'astr. anc. tom. i. l. ii. c. 3. p. 446.

^y Hipparch. in Phænom. l. i. c. 21. p. 112.

other farther to the south; that is, that its orbit was one year more, another less inclined to the equator; a sense which is far from being implied in his own words. Eudoxus may have expressed himself obscurely, as being really little familiar with the true nature of the phenomenon; and Hipparchus, who is admitted to have been ignorant of it, at the time when he composed the treatise where this passage occurs, may have misunderstood him; but there is no reasonable ground to doubt, that the words of the cnidian philosopher contain an allusion, however vague, to the precession of equinoxes.

No. XI.—PAGE 65.

Bruce calls this stela “a Tot” (Thot) “or calendar;” both which appellations may be to a certain extent correct; as the human figure which it contains, from a comparison with other monuments, I conjecture to be the god Lunus or Moon, who, there seems little reason to doubt, is the deity of the egyptian pantheon frequently represented with a similar horn, and standing upon two crocodiles;^z and a lunar reckoning being the primitive foundation of the egyptian, as of all other calendars, the divinity of the moon might not improbably be fabled to exercise an influence over it. It would appear also that the same luminary was not unfrequently personified by the god Thot,^a who was unquestionably the patron deity of the calendar as of all other scientific institutions. There can therefore be little doubt but that the physical symbols which this deity holds, or by which he is surrounded, are connected with the zodiac. The orphic sage, the fragments of whose works contain so many traces of egyptian mythology, appears to make, as quoted by Proclus ad Hesiod. dies, p. 168, very unequivocal allusion to this single horn of the god

^z Champol. Panth. pl. 14, H. 14, F. ter. 14, D. Conf. Montf. ant. expl. t. ii. pt. ii. pl. cxxvii.

^a Champol. op. cit. ibid. et alibi.

Lunus, 'Ο Μῆν ἐν αὐτῇ (τῇ ἀρχῇ) παρ' Ὀρφειῦ προσαγορεύεται Μονόκερως μύσχος.^b

No. XII.—PAGE 83.

Jablonski^c has analyzed the character and properties of this goddess with much learning and acuteness, though some of his conclusions may not perhaps be in strict harmony with the pure spirit of egyptian mythology. His etymology is certainly false: yet I incline to believe, that the influence which he assigns Athor in the cosmogony, as primeval principle of dusk or darkness, whence springs light and the sun, according to the orphic tradition, is justified by the general tenor of the testimony of both authorities and monuments. M. Champollion, while advocating a different opinion, has here, as on other occasions, treated the views of this valuable author with a degree of contemptuous severity, which was neither necessary nor warranted by any new light hitherto thrown on the properties of Athor by his own researches. The internal evidence even of those monuments which he himself has published and illustrated, appears to me very much to confirm the views of Jablonski. The french critic in his *Pantheon*^d describes a goddess as, “Bouto nourrice des dieux, emblème de l'antique nuit ou des ténèbres primitives. On donnait avec raison le surnom de mère des dieux à la déesse Bouto, puisque unie aux dieux Phtha elle avait enfanté Phrè ou le soleil, desquels naquirent ensuite tous les autres dieux.” Compare this with the following passage of his description of Athor:^e “Phtha étant le père de tous les dieux, la déesse Hathor sa compagne fidèle, dût passer sinon pour leur mère, du moins pour leur nourrice.” It appears then quite clear according to this account, that Athor and Bouto are merely different personifica-

^b See *Fragm.* xxxvi. Edit. Gessn. p. 397.

^c *Panth. lib. i. initio.*

^d *Pl. 23, 23, a.*

^e *Op. cit. pl. 18.*

tions of the same primeval Night, spouse of Pthta ; which is precisely the system of Jablonski.^f In another place however, M. Champollion in his ardour to confute his brother antiquary, has I fear contradicted himself. “Jablonski,” says he,^g “entraîné par l’esprit de système, a voulu conclure que la déesse égyptienne Athor, était la nuit et le principe de toutes choses. ...mais ce principe inconnu n’est autre que le grand être demiurgique Ammon,” &c. ! Surely this is not very consistent. At this rate Ammon (himself la nuit), being in common with the sun and all the other gods, descended from Bouto (also la nuit) or Athor, and Pthta, would be the principe inconnu of his own grandfather and grandmother.

NO. XIII.—PAGE 89.

Jackson^h however disagrees with Petavius, and is of opinion that Geminus must have lived before Hipparchus, that is before the year 160 B. C. in which that astronomer flourished ; assigning as a reason, that neither the works of Hipparchus, nor of any other equally recent author, are alluded to in the treatise of Geminus. He has therefore been induced to place that mathematician about 246 B. C. ; chiefly by a misinterpretation, as we shall see, of a passage of his work,ⁱ where mention is made of Eudoxus ; as if we were there given to understand that he himself, (Geminus) lived only a hundred and twenty years after the philosopher of Cnidos. But that our chronologer is egregiously mistaken is clear ; since it so happens, that

^f Panth. loc. sup. cit. conf. l. iii. c. 4. § 7.

^g Op. cit. pl. 17.

^h Chron. Ant. vol. ii. p. 26. Note. Bonjour, in a Dissertation entitled, *De nomine patriarchæ Josephi a Pharaone imposito. Appendix de tempore Isiorum. Rom. 1696* ; places Geminus in 137 B. C. I have not seen the work itself ; but his argument, as stated by his reviewers, (*Acta Erudit. Lips. 1697. p. 9.*) does not seem to be deserving of much attention.

ⁱ Elem. Astron. cap. secund.

Geminus mentions Hipparchus no less than three times in one chapter. Whence it would appear, that the learned critic had not read the work he quotes with any care; but has probably been misled by Petavius,^k who by a curious enough oversight, although himself the editor of the *Elementa* of Geminus, has fallen into the same error. Fabricius^l has also omitted the name of Hipparchus in his list of the authors cited by Geminus. This is a singular instance of three men of such profound research, following as it were the steps of each other in so strange a blunder; and shows the danger of admitting appeals to authority, without careful collation of the original text. But even had Jackson been right in this respect, there are other points of internal evidence contained in the work of Geminus, amply sufficient to confute his views. In the first place, Geminus quotes, not only Eratosthenes^m who flourished towards the end of the third century B. C. and Cratisⁿ the homeric critic of the age of Philometor, which comes down as low as 145 B. C., but Posidonius,^o who lived nearly about the same period which we have assigned himself. Secondly, his style and language prove him to be more recent than Hipparchus, especially his constant use of the term ζυγός, or libra, for χηλαί, or the claws of the Scorpion, the ancient name of the seventh sign of the zodiac among the Greeks, with whom the term ζυγός came only recently into general use, being unknown to Aratus, used once by Hipparchus, but supplanting Chelæ almost altogether with Geminus. Petavius^p has also remarked that the calculation of the degrees of longitude on the ecliptic, and not on the equinoctial, was familiar to this mathematician; whereas it was unknown or little practised before the days of Hipparchus. Thirdly, the name *Geminus* being evidently latin, though pronounced Γεμῖνος by the Greeks, implies a connexion with Rome, which could hardly be presumed in the

^k De Doct. temp. li. ii. c. 7. vol. i. p. 54.

^l Bib. gr. l. iii. c. 5. vol. ii. p. 98, 99.

^m Elem. Astr. c. 6. p. 19.

ⁿ Op. cit. c. 5. p. 14.

^o Vid. Simplic. in Aristot. Phys. lib. ii. p. 65.

^p Var. Diss. l. ii. c. 2.

case of a rhodian philosopher of the period to which Jackson would assign him, namely the first punic war.

Under all these circumstances, taken in connexion with his statement concerning the Isia, the epoch assigned him by Petavius appears unexceptionable. Zoëga^a has run into the opposite extreme from Jackson, and found so little proof of antiquity in the Elementa, that he was inclined to have brought their author down to a much lower period; for reasons however, which he does not state, and the soundness of which he himself distrusted.

The following is the passage of Geminus above alluded to, on which the conclusion of Jackson is grounded: ὑπερβολὴν οὐκ ἀπολείπουσιν ἀγνοίας, οἱ διαλαμβάνοντες ἐν τοῖς Ἰσίοις κατ' Αἰγυπτίους, καὶ κατ' Εὐδόξον, τὰς χειμερινὰς τροπὰς εἶναι. This the learned chronologer has understood, as if Geminus had said, that “those were in error,^r who thought the Isia were celebrated at the winter solstice in the days of Eudoxus;” in which case the literal interpretation of the latter part of the passage would be, “that the winter solstice coincided with the Isia, *in the days of the Egyptians and of Eudoxus;*” which is evidently nonsense, unless we suppose the whole race of native Egyptians extinct in Geminus' time. Petavius^s on the other hand understands it, “that they erred in supposing the celebration of the Isia to be fixed to the winter solstice, as constituted *according to the observations of the Egyptians and Eudoxus;*” namely, towards the end of December; which is both better grammar, and plain sense; Eudoxus having studied under the theban priests, and being supposed to be indebted to them for the improvements which he made in the calendar of his countrymen.

^a Num. Egypt. Mus. Borg. p. 395.

^r In this error, Jablonski (De tab. bembin. Diss. ii. § 11. Miscel. Berolin. t. vii. et Opusc. t. ii. p. 254.) persists, in a manner not very consistent with his usual research or judgment. In spite however of his general learning, this author's ideas on the subject of the egyptian calendar were somewhat crude and undigested; as appears not only from the weak passage here referred to, but the whole tenor of his writings on egyptian antiquity.

^s De Doct. temp. lib. ii. c. 7. p. 53.

No. XIV.—PAGE 89.

Plutarch,^t after describing the four days of mourning, from the seventeenth to the twentieth of Athyr inclusive, (τέσσαρας ἡμέρας ἀπὸ τῆς ἐβδόμης ἐπὶ δέκα ἑξῆς· καὶ γὰρ τὰ πενθούμενα τέσσαρα), adds: “but on the nineteenth at night, they go down towards the sea, and the priests and ministers bring forth the sacred chest, containing the gilded shrine, into which they pour fresh water, and immediately a cry is raised by all present that Osiris is found;” followed by other agreeable ceremonies. This day, however, cannot be the nineteenth of Athyr, devoted, as above stated, to lamentation. Accordingly, the commentators are nearly unanimous, that there is some error either in the text or the description, or that the name of the month has fallen out. Kircher^u supposes the day alluded to belonged to the next month, Choiak; with whom I have no hesitation in agreeing; referring it either to the nineteenth of that month, or to the nineteenth day from the commencement of the ceremony, which would be the fifth of Choiak. Jablonski,^v who also saw that there was an error, and agreed with Kircher that it lay in the omission of the name of the month, would rather supply Tybi; and upon this basis has grounded his attempt to illustrate the mysteries of the Isia. His whole argument is however from the first fallacious, resting originally on the fallacious hypothesis, that the festival was appointed to a season of the fixed alexandrian year; adopted from too great a deference to the careless and superficial language of Plutarch, though contrary to the testimony of Eratosthenes, Geminus, and the whole tenor of egyptian tradition. Besides, it is evident from the joint testimony of the authors quoted in our text, that these ceremonies, however varied, were yet in a certain degree continuous, forming portions of one mythological drama; which would hardly be consistent

^t De Is. et Os. c. 39.^u Œdip. ægypt. t. iii. p. 262.^v De tab. bembin. diss. ii. § xiv. See Miscel. Berol. tom. vii. p. 309, and Opuscul. t. ii. p. 259.

with the notion of their being extended over three months. It would appear indeed, from the description of Apuleius quoted in the text, that these solemnities, when adopted by the Greeks, were completed in one day.—It was not to be expected that such lively imitators would, in transferring the new rites to their own calendar, adhere very closely to all the characteristic details of the original egyptian usage. This very circumstance, however, tends still farther to shew the correctness of the sense we have assigned to the text of Plutarch. It is probable that the going out to the sea with the sacred chest or ark, as described by that author, is connected with the ceremony, which the Greeks considered (whether rightly or no may be doubtful) as the annual mission of a messenger by water to Byblos in Phenicia, announcing the proper season for celebrating the feast of the Adonia; which they held to be derived from the Isia or death of Osiris in Egypt, and supposed could not be commenced, until the rites of its prototype were concluded.^w To this ceremony the prophet Isaiah has been supposed to allude in the passage: Woe to the land shadowing with wings, which is beyond the rivers of Cush, that sendeth ambassadors to the sea, even in vessels of bullrushes upon the waters, saying, go ye swift messengers, &c.^x

No. XV.—PAGE 91.

The seven days of the Saturnalia or solstitial feast of ancient Rome, offer a curious enough coincidence. “Apud veteres opinio fuit,” says Macrobius,^y “septem diebus peragi Saturnalia; si opinio vocanda est quae idoneis firmatur aucto-

^w Lucian, de dea syr. edit. Bourdelot. 1615, p. 1058.

^x C. xviii. v. 1. sqq. vid. Procop. et Cyril. in loc. conf. Bochart. Geogr. sac. p. 212, sqq. Ed. 1712. Selden, de Dis. syr. Synt. ii. c. 11. p. 258, sqq. edit. 1681.

^y Saturn. i. c. 10.

ribus. Novius enim probatissimus Atellanarum scriptor ait : *olim expectata veniunt septem Saturnalia.* Memmius quoque, qui post Novium et Pomponium diu jacentem artem atellanam suscitavit, ‘Nostri,’ inquit, ‘majores velut bene multa instituere, Hoc optime; a frigore fecere summo dies septem Saturnalia.’”

Many circumstances combined to render seven a sacred number among the Egyptians. The planets were seven, including the sun; whence the Nile: *irrupens, imitatus sidera mundi, per fauces septem,*^z is called by Heliodorus,^a ἀντίτιμος οὐρανοῦ. We hear also of seven vowel sounds having been sanctified as metrical elements peculiar to the hymns in praise of the gods.^b The nation itself according to Herodotus^c was divided into seven castes. Lucian^d describes the theban Memnon when uttering his oracles, as ἀνοίξας τὸ στόμα ἐν ἑπτασιν ἐπτὰ. And, with Apuleius,^e Lucius purifies himself before partaking of the Isia by seven ablutions. See also Plutarch de Is. et Os. c. 31. and Eusebius Præp. ev. ix. 6.

No. XVI.—PAGE 92.

From Porphyry^f we learn, that Osiris was the husband, brother, and son of Isis; a remark which however problematical, is confirmed by the whole tenor of egyptian tradition. He was in fact the male principle of nature, of which many of his sons or subordinate divinities were merely portions or properties personified. In the same way Isis, as the female principle, was also Neith, Bouto or Latona, Athor, &c. To treat this subject at length would require a dissertation of itself.

^z Manil. iii. v. 453.

^a Æthiop. ix. p. 423.

^b Demetr. Phaler. ap. Jablonsk. Panth. prolog. p. 55. Quatremere, Recherches sur la littérature de l'Égypte, p. 268.

^c II. c. 164.

^d Philops. Ed. Bourdelot, 1615. p. 842.

^e Metam. xi. tom. iii. p. 144.

^f Ap. Euseb. Præp. ev. lib. iii. c. 11, in fine.

I have however all along admitted as the basis of my endeavours to illustrate egyptian mythology, the fundamental principle formally laid down and recognised by the ancients, that Isis and Osiris were respectively the female and male essence of the godhead. This canon is first established by Herodotus,^g (the earliest greek author who treats of the superstitions of this country and who visited it when the national institutions still existed in their purity,) in the passage where he tells us, that while the worship of the other deities was chiefly confined to the city or nome under their peculiar patronage, that of Isis and Osiris was common to the whole nation. It has continued through successive ages to be admitted as unquestionable, and beyond the pale of controversy, and has formed the groundwork of the most celebrated treatises ancient or modern on the subject of egyptian mythology; and I have seen no solid reason for questioning its accuracy.

I have been led to this observation, from having perceived, or fancied I perceived, a disposition in some quarters, to degrade these two celebrated elements of ancient superstition, into deities of inferior rank in the modern pantheon.

No. XVII.—PAGE 113.

Mons. Champollion^h has indeed asserted, that the moon among the Egyptians was a male deity, and a male deity only. This opinion however appears to me to rest on no authority but his own; being in express contradiction to the united testimony of the ancients, who formally state that the luminary entered in a feminine capacity into the character of several female personages of the pantheon. Of this the disc between bull's horns, worn by these female deities, was, as we learn from Diodorus,ⁱ Orpheus,^k and all the most respectable

^g II. 42.

^h Panth. ég. pl. 14. A.

ⁱ Bibl. hist. i. § 11.

^k Hymn viii. conf. xviii. v. 11. Conf. Plut. de Is. et Os. c. 52. Ovid. Met. ix. v. 687, &c.

authors, a natural and obvious symbol. And the french critic has advanced no evidence calculated, in my opinion, to outweigh their authority. The passages of Plutarch, Spartianus, and Ammonius, which he quotes in favour of his own system, and which I have consulted in the original, appear to me altogether adverse to it. As they distinctly admit the moon to have been *ἀρσενόθηλος* among the Egyptians.

No. XVIII.—PAGE 129.

The author of these remarks has occupied himself for hours together, in observing the motions of these singular insects, which are more or less common on all the sandy coasts of the Mediterranean, at least on those of Sicily and Calabria. He has not unfrequently seen two, apparently male and female, engaged with one ball; which would seem to confute at once the fanciful opinion of the Greeks concerning the sex of the species. Among other claims which they have to be considered as typical of the god of day, is the constancy with which they continue their course, and their boldness and perseverance in trundling their orb along, in spite of all obstacles which may occur to hamper their retrograde movement; as if still farther to emulate, in one of his noblest attributes, the *unwearied sun*, *Ἡέλιον ἀπάμαντα*. I have sometimes amused myself with scraping a small trench in the sand across the path of the traveller, into the bottom of which he and his globe tumbled backwards together. He would then look round for some part of the side of the abyss, so little precipitous, as to permit of his rolling it out again; and finding none, would set to work, and scrape a gap sufficiently wide and smooth for the purpose, and then turning round on his head again, grasp his precious burden in his thighs, and resume his retrograde journey. Once I deprived him of his ball altogether, and having removed him to a position at some considerable distance, where he could not observe my proceedings, buried it

to some depth in the sand. Immediately however on being set free, he rushed back to the spot where he had been separated from his bit of dung, and not finding it, began to hunt the ground in the neighbourhood like a pointer; until suddenly stopping over the place where it was buried, he commenced burrowing in the sand until he reached it, and whisking round again upon his head rolled it off in triumph. It was impossible not to feel surprise, and at the same time admiration, at the boldness, constancy, and skill, with which the little creature maintained his own against a superior force, without the slightest appearance of personal fear, or of any other feeling but anxiety for the safety of his beloved orb; nor certainly, if egyptian piety admitted that the sun could, under any circumstances, be appropriately represented by a nasty reptile, could they have selected one, more worthy of his high symbolic office, than this beetle. The journey seemed to be long and tiresome, as I never had either time or patience to see where or how it ended. Such are the facts that have come under my observation respecting the scarabee, to which neither commentators nor travellers appear to have paid much attention. Even those who quote the well-known passages of Clemens Alexandrinus and others, seem seldom to have understood their import. Τὸν δὲ "Ἡλιον, says that learned father, τῷ τοῦ κανθάρου, (σώματι ἀπείκαζον) ἐπειδὴ κυκλωτερὸς ἐκ τῆς βοείας ὄνθου σχῆμα πλασάμενος, ἀντιπρόσωπος κυλίνδει. This Warburton¹ renders: "but the sun they likened to a scarabee, because this insect makes a round ball of beasts dung, and rolls it circularly with his face opposed to that luminary." What he means by "rolling it circularly" it is difficult to understand. A round ball, if rolled at all, must, in a certain sense, no doubt be rolled circularly; but if his meaning be, that the scarabee and his ball describe a circle in their retrograde course, that is neither true in itself nor the sense contained in the text of Clemens. The word ἀντιπρόσωπος he has also misunderstood; as it refers to the position of the face of the animal, not with respect to the sun, but to the ball of dung, or to his own course.

¹ Div. Leg. 4to. vol. ii. p. 415.

The following description of this species of scarabee is extracted from the *Encyclopædia britannica*,^m which the reader may compare with what I have given above from personal observation. “The *Scarabæus carnifex*, which the Americans call the *tumble-dung*, particularly demands our attention. It is all over of a dusky black, rounder than those animals are generally found to be, and so strong, though not much larger than the common black beetle, that if one of them be put under a brass candlestick, it will cause it to move backwards and forwards, as if it were by an invisible hand, to the admiration of those who are not accustomed to the sight. But this strength is given it for much more useful purposes than those of exciting human curiosity; for there is no creature more laborious, either in seeking subsistence, or providing a proper retreat for its young. They are endowed with sagacity to discover subsistence by their excellent smelling, which directs them in flights to excrements just fallen from man or beasts, on which they instantly drop, and fall unanimously to work in forming round balls or pellets thereof, in the middle of which they lay an egg. These pellets, in September, they convey three feet deep in the earth, where they lie till the approach of spring; when the eggs are hatched, and burst their nests, and the insects find their way out of the earth. They assist each other with indefatigable industry, in rolling these globular pellets to the place where they are to be buried. This they are to perform with the tail foremost, by raising up their hinder part, and shoving along the ball with their hind feet.

No. XIX.—PAGE 141.

The history of the Sibyl of the greek and roman mythology affords curious proof of the antiquity of this emblem on

^m In voce, vol. xvi. p. 693.

the sphere of the Phenicians, Arabs, and other oriental nations. An old name of the constellation Virgo among these was Spica, in the semitic tongues Shibbula,ⁿ Shibboleth, שבולה, שבולא, שבילה, from the ear of corn she held in her hand, a part being taken for the whole, as in the modern cyphers of this and other signs of the zodiac. Virgo is still commonly represented on the arabic sphere by the ear of corn alone. Among many ancient nations, both hellene and barbarous, the gift of prophetic inspiration, though common to both sexes, seems yet to have been considered, more than any other divine attribute, as peculiarly conferred upon females. Most of the greek oracles were served by women; and of prophetesses by profession in the east we have, among other examples, that of the witch of Endor. As divination in all ages of the world was connected with observation of the stars, it was natural enough that the celestial maid, or shibbula, should become the emblem or type of the science. Hence, as Hyde observes:° “Among the chaldee and phenician mystics, was feigned a certain supernatural virgin, by name Sibylla, or as Tacitus has it, Sibulla, which name became common to every female who had pretensions to enthusiastic inspiration or prophetic fire.” *A mysteriorum cursoribus, Chaldæis et Phœnicibus, prætendebatur miraculosa quædam virgo, nomine Sibylla, seu, ut Tacitus, Sibulla; unde factum est ut quævis enthusiastica fœmina et extatico furore acta vaticinatrix, eodem nomine vocaretur.* This same superstition we find transferred from east to west, under the mysterious character of Sibylla; a name certainly not of greek or latin origin, and of which there can be no doubt but the above is the true etymology. As proof of this it may be remarked, that several of the most celebrated of these Sibyls are referred to Asia, as Sibylla persica, babylonia, erythræa.^p The attempt to give the word a greek etymology: “ut sit σίβυλλα, quasi σιοῦ βόλλα, æolice pro θεοῦ βουλή,” is far from plausible. That

ⁿ Hyde, de relig. vet. Pers. c. xxxii. Scalig. ad Manil. p. 473.

^o Op. cit. p. 394.

^p Suid. v. Σίβυλλαι. Πρώτη οὖν ἡ Χαλδαία ἢ καὶ Περσική.

of Salmasius :^q *σίση* quod æolicum est pro *σίδη*, whence as a diminutive *σίσηλλα*, is mere trifling ; besides others equally fanciful.

No. XX.—PAGE 150.

Jackson, however, it must be observed, errs grossly in supposing, that not only the heliacal rising of Sirius, but the summer solstice of the year 1322, fell on the 22d of July of the julian calendar ; whereas this last really fell on the sixth of that month ; and the error has been transferred to his calculation of the epoch at which the coincidence is made to take place between the Thot and the equinox. Dr. Hales,^r in adopting and repeating his mistake, quotes Petavius, who, he observes, made the 20th of July 1322 the day of the summer solstice ; but Petavius was never guilty of such an oversight. I find a very different statement in his Var. Dissert. ii. 4. Jackson^s is farther of opinion, that the egyptian names of the months were not invented until after the Exodus, because Moses did not adopt them as his countryman did those of the Chaldees after the babylonish captivity. A previous remark of his own might have furnished him with a better solution of this difficulty, namely, that the months of the Egyptians were called after their gods. Was it likely that Moses would have dedicated the seasons of his sacred year to Thot, Athyr, Ammon, the abominations of the Egyptians ?

No. XXI.—PAGE 162.

In spite of the vain attempts of travellers or critics to identify among the ruins of Thebes the hundred gates of the

^q Ad. Solin. p. 56. Conf. Hoffmann. Lexic. in v.

^r Analys. of Chronol. vol. i. p. 40.

^s Chronol. ant. vol. ii. pp. 4. 7. sqq.

Iliad, which even the most curious of the ancients could not make out to be any thing more than a poetical hyperbole;† or to prove by the authority of the Odyssey, that lower Egypt, which existed in the days of Moses, was a bay of the sea in those of Menelaus; still, the poet's own descriptions of this country, when fairly examined, bear in themselves the strongest internal evidence, that he had no personal acquaintance with its interior, and that what little he knew of it was derived from hearsay, or possibly from a piratical expedition to its coast, similar to those described by himself, and by Herodotus, as usual among their countrymen in early ages.‡ Sir I. Newton§ assumed that the pyramids were not built in Homer's time, because the bard, having been in Egypt, does not mention them; and the conclusion is just, as referred to the premises; since a poetical imagination could hardly fail to be smitten with those prodigious monuments; and a poet, so minute in his description of localities as Homer, were still less likely to have passed them over unnoticed, in treating of the wonders of the banks of the Nile. But were it not more reasonable to infer, that he does not mention them because he had never seen them? Others go the length of asserting, that Homer knew the true cause of the inundation, which remained a mystery to the most curious of his countrymen for many centuries after his day, because he applies the epithet of *διΐπετής* to the Nile. *Διΐπετής*, it is said, means falling or proceeding from Jove, that is, figuratively, swoln by rains, *Διὸς ὄμβρω* but the inundation was owing to the rains of Ethiopia, therefore Homer knew its cause. These critics have overlooked the circumstance, that *διΐπετής* is a familiar epithet with the poet for any river, when it happens to suit his metre; those of his own country being little more than mountain torrents, full in winter, but nearly dry in summer, unless when swoln by showers, on which occasions they frequently overflowed their banks, and committed great ravages; and these visitations

† Diod. lib. i. c. 45. Pomp. Mel. i. 9. conf. Heyn. Var. obs. ad Il. ix. 383.

‡ Odyss. ζ. v. 246, sqq. Herod. lib. ii. c. 152.

§ Chronol. p. 32.

being ascribed by the superstitious inhabitants of their valleys to the anger of the deity,^w the expression *διΐπετής*, both in a moral and physical sense is highly appropriate. It occurs seven times; twice applied to the Nile,^x twice to the Scamander,^y once to the Sperchæus,^z once to a river of the island of Scheria,^a and once in a mere poetical simile to a river in general;^b to suppose then that it contains any mysterious or special allusion in the case of the Nile, is altogether gratuitous. The more, as the supposed allusion itself would have been unintelligible to his countrymen, to whom his descriptions of that river were addressed, and who could merely have inferred from it, that the Nile was such a torrent as the Scamander or the Sperchæus. Might we not then more fairly argue, from the very fact of the poet's applying this ordinary and commonplace epithet to the Nile, that he was really ignorant of the little resemblance which existed between that great stream, and the mountain torrents of his own country; and consequently, of the general peculiarities for which the climate of Egypt was celebrated in the vulgar tradition of both Egyptians and Greeks; namely, that rain never fell on its soil, unless as a prodigy, and that the river, instead of being replenished according to the ordinary course of nature, was made to overflow its banks by mysterious and supernatural means. Had Homer, like Hecatæus or Herodotus, ever really travelled in Egypt, these are the wonders for which he would probably, like them, have celebrated that country on his return home.

Antiquaries are surely very inconsistent, who in one place tell us, what is most true, that the Egyptians in early times hated navigation or foreign travel, and were jealous of admitting strangers, especially uncircumcised barbarians like the Greeks, to the interior of their country; and in another, describe the same Egyptians as establishing maritime colonies over the whole coast of the ægæan sea, and the same european barbarians as sailing up and down the Nile 1200 years, B. C., with as much freedom as their descendants do, under the auspices of Mohammed Ali.

^w Il. λ. 493.

^x Odyss. δ. 477, 581.

^y Il. φ. 268, 326.

^z Il. π. 174.

^a Od. η. 284.

^b Il. ε. 263.

The best version of the tradition concerning the colonists, Danaus, &c. is that given by Diodorus;^c who makes them arab or phenician occupants of lower Egypt, driven out by the aboriginal natives to seek refuge, partly in Palestine, partly on the coasts of Hellas; an account both probable in itself, and highly consistent with the general tenor of the history of all three nations. The antiquities of the heroic age of Greece are replete with traces of the influence of phenician commerce and settlement; while between the language and primitive manners of its inhabitants, and those of the Egyptians, little else than fanciful analogies can be traced, and such as would hold equally good between Greece and Hindostan.

NO. XXII.—PAGE 165.

It has been said, that the mere circumstance of certain constellations not having been mentioned by Homer, is not sufficient proof that he was ignorant of them. The remark though reasonable enough as referred to the old sophistical dogma, that nothing which the poet has not noticed could be known to him, can yet hardly apply here; considering his comprehensive language in various passages, and the opportunities he had of adding to his catalogue. He himself however affords positive as well as negative proof, how very limited the number of constellations was in his age and country. As he describes the great bear as the only one of the sphere that never set:

Οἴη δ' ἀμμορός ἐστὶ λαστρῶν Ὀκειανοῦ.^d

Hence the dragon and the lesser bear, so remarkable both as regards their appearance and their position with respect to the

^c Eclog. ex lib. 40^o. ap. Phot. cod. ccxlv. et Diod. Ed. Wessel. vol. ii. p. 542, sq.

^d Il. σ. 489, Od. ε. 275.

pole, were unobserved by the Greeks in the age of Homer. Accordingly it is admitted, that while the more scientific Phenicians guided their course by observation of the lesser asterism, hence called, "Λμαζα ἢ πλέουσι φοίνικες;"^e the Greeks merely looked to the larger and more brilliant image. As Ulysses by advice of Calypso :

Τὴν γὰρ δὴ μιν ἄνω γε Καλυψὸς δία θεάων,
Ποντοπορευέμεναι ἐπ' ἀριστερὰ χειρὸς ἔχοντα.^f

Hence Ovid—

Magna minorque feræ quarum regis altera Graias,
Altera Sidonias utraque sicca rates.^g

No. XXIII.—PAGE 165.

I allude here to the Theogony and Works and days alone, to which may, in as far as the present subject is concerned, be added the Shield of Hercules; all these poems, whether by the same author or no, being unquestionably of considerable antiquity. As for the Poetical Astronomy, which, with a multitude of other works now lost, by obscure or doubtful authors, was vulgarly attributed to Hesiod, there is no reason, from the internal evidence of the fragments, to suppose it of much earlier date than the days of Pindar or Æschylus. For instance, we find Hesiod quoted as mentioning the fall of Phaeton into the Eridanus or Po, and his adventures with a king of Liguria called Cycnus, which are clearly recent fables of greco-italian or etruscan character, and no way connected with heroic greek mythology.^h

^e Callim. ap. Diog. Laert. vit. Thaletis. Achill. Tat. Isag. c. 1. cf. Arat. Phæn. v. 37, sqq.

^f Od. ε. 276.

^g Trist. iv. 3.

^h Schol. German. v. 366. Hesiodus autem dicit eum inter astra collocatum propter Phaetonta solis et Clymenes filium, qui dicitur currum patris ascendisse; cumque a terra altius levaretur, præ timore in Eri-

The history of the constellations Orion and Scorpio afford apposite illustration of the changes made by the introduction of the signs of the zodiac on the primitive mythology of Greece. The former, as already observed, was a hero celebrated for his beauty and love of the chase; who having, in consequence of an amour with the rosy fingered Aurora, incurred the displeasure of the deities, and, among others, of the chaste Diana, was slain by the arrows of the virgin goddess in her own island of Ortygia.

...ὅτ' Ὀρίων ἔλετο ῥοδοδάκτυλος Ἥως,.....
 "Ἐως μιν ἐν Ὀρτυγίῃ, χρυσόβροντος Ἀρτεμις ἀγνή,
 Οἷς ἀγανοῖς βελέεσσιν ἐποιχομένη κατέπεφνεν.

This may allude to the sudden death, or mysterious disappearance of the hero; since an important office of the twin archer deities, in the primitive greek mythology, was that of angels or ministers of fate; sudden death, without disease or apparent cause, being assigned to their influence, or to their arrows, as might be shown by a multitude of passages of Homer. Probably Orion was in the habit of going forth to the chase at daybreak, and having one fatal morning disappeared, and never more been heard of, it might be fabled, that in consequence of his love for Aurora, he had been slain by the arrows

danum fluvium, qui et Padus dicitur, cecidisse, &c. This the real Hesiod contradicts in the following verses:

Τιθωνῷ δ' Ἥως τέκε Μέμνονα χαλκοκορυστήν,
 Αἰθιοπῶν βασιλῆα, καὶ Ἡμαθίωνα ἀνακτα.....
 Αὐτὰρ τοι Κεφάλῳ φιλύσατο Φαίδιμον υἱόν,
 Ἴφθιμον Φαέτοντα, θεοῖς ἐπιείκελον ἄνδρα·
 Τόν γὰ νέον τέρεν ἄνθος ἔχοντ' ἐρικυδέος ἥϊος,
 Παῖδ' ἀπαλὰ φρονέοντα, φιλομμειδῆς Ἀφροδίτη,
 Ὄρετ' ἀνερεψαμένη, καὶ μιν ζαθέοις ἐνὶ νηοῖς,
 Νηοπόλον νύχιον ποιήσατο δαίμονα δῖον. (Theog. 984.)

Such are all the adventures of this hero mentioned by Hesiod. As he is here made son of Cephalus and Aurora, and not of Sol and Clymene, it is clear that Ovid's whole fable of his fatal accident in the chariot of his father was unknown to the author of the Theogony.

of Artemis. The homeric tradition is followed by Apollodorusⁱ and Horace.^k But, in the later mythology of the orphic hymns, Eratosthenes, and others,^l who appear to quote one of these Pseudo-hesiods, (whose accounts must have been very contradictory, as Diodorus,^m on similar authority, tells quite a different story), we find that Orion having been guilty in the island of Crete, Chios, or any other which suited the fancy of the fabulist, of an attempt to ravish Diana, or of some such impiety, Terra enraged sent forth a scorpion from her bosom, which stung him on the heel; and the wound having caused his death, both the hero and his executioner were transferred by Jupiter to the skies. Aratusⁿ and others assure us that the mysterious signification of all this was, that Orion sets when Scorpio rises, hence the death of the one was attributed to the birth of the other; which is very likely; but the sting of a scorpion is a very different thing from the gentle darts of Homer's Diana, and the new version of the fable is as lame and unmeaning as the old heroic tradition is simple, elegant, and poetical.

The question, where or what this island of Ortygia may have been, where Diana slew Orion, is very obscure; and has been treated in a very unsatisfactory manner by the commentators. The name is much celebrated in the early mythology, although it does not appear to have been the ordinary appellation of any island of the greek seas in historical ages. Homer mentions it in one other place, as situated in the Ægean not far from Syros:^o

Νῆσός τις Συρίη κικλήσκειται ἔπου ἀκούεις,
 Ὀρτυγίης καθύπερθεν.

ⁱ Biblioth. lib. i. c. 4. § 5. Ed. Heyn. p. 24.

^k Lib. iii. od. iv. v. 71.

^l Orph. Lithic. 13. Eratosth. Catast. 32. Arat. Phœnom. v. 636. Schol. ad German. v. 327. Palæphat. De incredib. 5, &c. Conf. Heyn. not. ad loc. Apollod. sup. cit.

^m Lib. iv. c. 85.

ⁿ Phœnom. v. 645. Serv. ad Virg. Æn. i. 539.

^o Odys. α. 402.

These verses prove at least that Homer's Ortygia was one of the Cyclades. Later mythologists, from its being connected by the poet with the twin deities, have supposed it to be the same as Delos, which opinion has been adopted by the greater number of modern commentators; but that they are in error appears, as well from Homer himself, who distinguishes Delos elsewhere by its proper name, as from the two next most ancient testimonies concerning both islands; that of the author of the hymn to Apollo ascribed to Homer, in the following passage :^p

Χαῖρε μάκαρι' ὦ Δητοῖ, ἐπεὶ τέκες ἀγλαὰ τέκνα,
 Ἀπόλλωνά τ' ἄνακτα καὶ Ἄρτεμιν ἰοχέαιραν,
 Τὴν μὲν ἐν Ὀρτυγίῃ τὸν δὲ κρاناῖ ἔνι Δήλῳ.

and the orphic hymn :^q

Δητῶ κυανόπεπλε, θεὰ διδυματόκε σεμνή,
 Γειν ἀμῆνη Φοῖβόν τε καὶ Ἄρτεμιν ἰοχέαιραν,
 Τὴν μὲν ἐν Ὀρτυγίῃ τὸν δὲ κραναῖ ἔνι Δήλῳ.

Here we have the express distinction, that Apollo was born in Delos, Artemis in Ortygia; Delos then and Ortygia cannot be the same; but the two localities, being so closely connected as the birth-places of twin deities, cannot be far distant. This suggests the probability, that the Ortygia of Homer and of the ancient poets, being evidently one of the Cyclades, may have been Rhenæa, an island situated so close to Delos, as to be in fact the twin isle of that celebrated sanctuary of Apollo, to whom, as to his sister Diana, it was, with its more celebrated neighbour, jointly consecrated. Hence both are called now-a-days, by the modern greeks, Dili, or the two Delos;^r being separated by a channel of scarcely half a mile in breadth, and in ancient times connected by a bridge. In fact, Strabo, the oldest and most authentic writer who identi-

^p v. 14, sqq.

^q xxxiv. vv. 1. 4. 5.

^r Spon. Voyage du levant. 12^o 1678, tom. i. p. 172, sqq. Tournefort, Voyage au levant, Ed. Amst. 4to. 1718, vol. i. p. 110.

fics Ortygia as one of the Cyclades, and who had made the poems of Homer his peculiar study, expressly informs us that Rhenæa was anciently called Ortygia. The following is the description of the island given by him :^s 'Ρήνεια δ' ἔρημον νησιδίον ἔστιν, ἐν τέτρασι τῆς Δήλου σταδίοις, ὅπου τὰ μνήματα τοῖς Δηλίοις ἔστιν· οὐ γὰρ ἔξεστιν ἐν αὐτῇ τῇ Δήλῳ θάπτειν, οὐδὲ καίειν νεκρὸν, οὐκ ἔξεστιν δὲ οὐδὲ κύναι ἐν Δήλῳ τρέφειν· ὠνομάζετο δὲ καὶ Ὀρτυγία πρότερον. " Rhenæa is a desert island, about four stadia from Delos, where are the delian cemeteries ; since in Delos itself it is not permitted to bury, or to burn a corpse, nor so much as to keep a dog ; but it was formerly called also Ortygia." This text has been misunderstood by the commentators, who under the influence of the old prejudice that Delos and Ortygia were the same, have supposed the latter part of the passage to relate to the first of these islands. But those who consider it impartially will see, that the geographer, having finished his description of Delos, had proceeded in his circuit of the Cyclades to the neighbouring island of Rhenæa, and that to Rhenæa alone can the words ὠνομάζετο δὲ καὶ Ὀρτυγία πρότερον apply ; the mention of Delos having been introduced only incidentally, to account for the circumstance of its burying ground being in Rhenæa. Add to this that Pliny asserts Rhenæa to have been anciently named Artemitis, or the island of Diana, and no doubt can remain that this is really the original Ortygia of Homer, and of the goddess, where she slew Orion. The only modern author who seems to have had a suspicion of this, among many who have devoted pages to the illustration of this obscure name, is the learned and accurate Tournefort ;^t who, after stating that both islands were called Delos by the modern Greeks, adds : " Les cailles avaient fait donner le nom d'Ortygia aux deux Delos."

In later times this name seems to have been common to several sanctuaries of Diana, as to a grove near her temple of Ephesus,^u and to the famous Syracusan citadel^v sacred to

^s P. 709, Ed. Falcon.

^t Lib. cit. p. 119.

^u Strab. Ed. Falc. vol. ii. p. 916, sq.

^v Pindar, Nem. i. 1. Diod. lib. v. c. 3. Pindar, in the passage quoted, by a natural figure, calls the Sicilian Ortygia, Δάλου κασιγνήτα ;

that goddess, where the ruins of her temple still exist. To these the title was doubtless transferred by the greek colonists, from her more ancient *τέμενος* among the Cyclades; and the superior celebrity of these new Ortygias in after ages, may have been among the causes, why so little trace of the appellation as applied to the twin islet of Delos remained.

Delos seems afterwards to have engrossed the worship of both Apollo and Diana to itself, as well as the honours and emoluments accruing from their patronage; while Rhenæa was degraded to be the cemetery of its more holy neighbour, whose soil it was not permitted to pollute with the corruption of a dead body. Rhenæa, however, though called by Strabo *ἔρημο νησιδίον*, probably from its being completely occupied as a burying ground before his time, is yet much the best island of the two, and many times larger than its neighbour.^w The name Ortygia was no doubt applied to it from the number of quails that frequented it. Rhenæa may be from *ῥήν*, cattle; hence *ῥήνεα*, the island of pasturing, from the nature of its soil, as opposed to that of Delos, which was in spite of its sanctity but a dreary rock. Accordingly, Tournefort states, that in his time the inhabitants of the neighbouring isles used Rhenæa as a sheepwalk, while Delos was quite barren and deserted.

But to return from this digression. That the fundamental claims of the hero Orion to distinction, in the primitive greek mythology, were, as we have hitherto assumed, partly his surpassing beauty of person, which even attracted the love of Aurora, but chiefly his skill in the chase and fondness for that diversion, appears from the testimony of Homer, which in these matters must be admitted as superior to all others; and who describes him as alone among the heroes in the realms of Pluto, engaged in his favourite occupation; pursuing, even on the asphodel meadow of that dreary land, the *εἶδωλα* of the same wild animals, which he himself had slain on the mountains of the upper earth:

whence, it is not very probable, that the name Ortygia was also known to him as an appellation of Delos itself.

^w Tournef. p. 120, sq.

Τὸν δὲ μέτ' Ὀρίωνα πελώριον εἰσενήσα,
 Θῆρας ὁμοῦ εἰλεῦντα κατ' ἀσφοδελὸν λειμῶνα,
 Τοὺς αὐτὸς κατέπεφνεν ἐν οἰοπόλοισιν ὄρεσσιν,^x

a remarkable passage in several respects, and proving, at least, how vitally and essentially the character of Orion in the ancient mythology was that of Hunter. Hence the bright star Sirius, which rises immediately behind his own constellation in the heavens, was considered as his dog, following at his heels. And with respect to his personal advantages, the poet, speaking of the twin giants Otus and Ephialtes, says :

Οὓς δὴ μηκίστους θρέψε Ζεῖδαρος ἄρουρα,
 Καὶ πολὺ καλλίστους μετὰ γε κλυτὸν Ὀρίωνα.^y

Such is the description of Homer ; and, taken in connexion with the account of his death in the island, and by the hand of Diana, is consistent and characteristic. Ideler,^z however, who would have the appellation *Dogstar* to be of egyptian origin, assumes in conformity with that opinion, that the character of Orion, while on earth, was that of a mere warlike adventurer, remarkable for strength, violence and ferocity, (a capacity in which, strictly speaking, he does not appear even in the later mythology) ; and that his celebrity as a hunter was altogether adventitious, derived from the neighbourhood of the constellation which bore his name to the egyptian *Dogstar*. Of this interpretation, all that can be said is, that being contrary to reasonable analogy, and the most ancient authorities, it is as inadmissible as we have already shewn the basis to be on which it rests, namely, the supposed signification *dog* of the egyptian word *Sothis*.

^x Odyss. λ. 571.

^y Odyss. λ. 308.

^z Unters. üb. den Urspr. &c. der Sternn. s. 219.

No. XXIV.—PAGE 169.

As for the invention of the zodiac by the centaur Chiron, of which Sir Isaac Newton (followed by Whiston and others) speaks with as much confidence, as we can do of his own discovery of the true system of the world; great as is the weight of his name, it may safely be classed among those paradoxes, which will hardly be seriously maintained by either astronomer or antiquary of the present day. The whole hypothesis rests on the evidence of an obscure and nameless poet, who, as quoted by Clemens Alexandrinus,^a states, that Chiron delineated σχήματα Ὀλύμπου; whence our great mathematician concludes,^b that the centaur was a practical astronomer, and constructed a sphere for the use of the Argonauts in their voyage. Σχήματα Ὀλύμπου have however very little to do with the δωδεκατημόρια of the ecliptic; Homer and Hesiod also speak familiarly of certain constellations and their forms, but that they were totally ignorant of the signs of the zodiac is perfectly clear. But even admitting that this expression necessarily referred to the constellations of the zodiac, what faith is due to so vague and unauthentic a fragment? Precisely the same astronomical discoveries, which Sir Isaac's author ascribes to Chiron, are attributed by Sophocles to Palamedes, by Euripides to Atreus, &c.;^c each fabulist selecting as the author of popular inventions, such of the early national heroes, as in his opinion were most distinguished for wisdom or ingenuity; but are we hence to conclude that these were all practical astronomers and constructors of spheres?

Achilles Tatius,^d after recapitulating the various contradic-

^a Strom. i. p. 306. καὶ ὁ τὴν Τιτανομαχίαν γράψας φησὶν ὡς πρῶτος οὗτος,

εἰς τε δικαιοσύνην θνητῶν γένος ἤγαγε, δίδξας
ὄρκον καὶ θυσίας ἰλαρὰς καὶ σχήματ' Ὀλύμπου.

^b Chronol. p. 83.

^c Ap. Achil. Tat. c. i. p. 73, 74.

^d Loc. cit.

tory statements of mythologists on this point, very wisely concludes that none of them are entitled to much credit; and having observed that Apion, the celebrated critic, maintained, that so sublime a genius as Homer could not fail to be an astronomer, he adds the following remark; which is worthy of notice, as well on account of its great beauty and simplicity, as because it contains, in a few words, nearly the sum total of the astronomical science, which can reasonably be attributed to the sages of barbarous antiquity. “Nor need it be matter of wonder, that the human mind should by nature be strongly bent on this species of contemplation; for as every soul, being immortal, came down originally from heaven, looking up wistfully to the skies, it beholds nought but kindred and congenial objects, and feels attracted toward that place, whither it is destined ultimately to return.” Οὐδὲν δὲ παράδοξον ὑπ’ ἀνθρώπων τοσαύτην εὐρεθῆναι θεωρίαν· ψυχὴ γὰρ πᾶσα ἀθάνατος κατελήθοῦσα ἐξ οὐρανοῦ, ἀνανεύουσα ἐς συγγενῆ τὸν οὐρανόν, πάντα τὰ συνήθη θεωρεῖ· καὶ ἐπισπᾶται πρὸς ὃν καὶ ἀναχθῆναι ἐπιίγεται.

No. XXV.—PAGE 197.

Fréret, in his elaborate dissertation^e on the rustic calendars of the ancients, has no doubt shown, in a satisfactory manner, that there was a vast deal of prejudice and bigotry among the lower orders of both Greece and Italy, as of all other parts of the world, in all ages; and that the constructors of almanacks for vulgar use, as well as the popular writers on agriculture, were not unfrequently under the influence of these prejudices themselves, or willing to humour them in others; but, that the most celebrated astronomers of Greece, in those great works on which their future fame was to rest, permitted their calculations to be influenced by such motives, he has altogether failed to show, as, with regard to Meton, he himself seems to

^e Défense de la Chron. p. 469.

have admitted. It must be acknowledged, however, that he has carried his system to an extravagant extent. Many of his illustrations are derived from confused accounts of the observations of old astronomers, of various ages and countries, contained in occasional passages of careless or ignorant authors, or in certain fragments, some of them ascertained to be spurious, and most of them of very questionable authenticity; and in each of these statements the slightest variation which he detects from what ought to be the exact reckoning for the age of the author with whose name the observation is connected, he accounts for at once, by assuming the observation itself to have been derived from some ancient rustic calendar, constructed for the true period to which it ought to relate, as the age of Chiron, Hesiod, Thales, or others as it happens; all these calendars of the barbarous ages being supposed to be correct to a year, while those of the first philosophers of civilized Greece are assumed to be wrong. It is asserted by modern experimental astronomers, and, indeed, must be self-evident, that the precise period of the heliacal rising of a star, owing to the vicissitudes of climate, or the refraction of the atmosphere, can seldom be ascertained exactly to a few degrees; and yet a discrepancy of a few days between two recorded statements of this nature is sufficient, with the french academician, to establish an interval of several centuries between the epochs of the construction of the imaginary rustic calendars, whence they are supposed respectively to be derived. In the adjustment of his system, he takes in a range of climate from the tropic to the Danube; he flies from Syene to Thebes, from Thebes to Alexandria, from Egypt to Greece, Italy, Thrace, Scythia, in quest of these calendars and their authors. All this sounds very learned and ingenious, and has passed current with many persons of both learning and ingenuity, and exercised a very considerable influence on chronological criticism; but to those who take the trouble carefully to analyze the proofs, it will also appear very fallacious and inconsistent. Were it not more reasonable to account for many of these discrepancies and self-contradictions by real errors in the observations,—by the oversights of quoters, who have misunderstood the sense of

their authors,—or by the carelessness of transcribers and copyists, than to accuse the first men of science of antiquity of such puerile inconsistencies? In one instance^f he has created an egyptian calendar for the fifteenth century B. C. out of a statement contained in a latin fragment, which has passed under the name of a translation from Ptolemy, but was admitted by its editor, Petavius,^g and has been still farther shown by succeeding critics to be sadly corrupt, if not altogether spurious.^h Idelerⁱ has pointed out the fallacy, but cites Bailly as its author, who has^k, however, in this instance, as in several others, merely copied Fréret. As he was not, apparently, much of a scholar himself, many of those illustrations contained in his history of ancient astronomy, which involve to a certain extent classical criticism, are borrowed from the works of the learned secretary of the Academy of Inscriptions, a great part of whose argument rests on the authority of this very fragment, where he has mistaken for observations made at widely remote periods, certain varieties of data, which, in as far as they are intelligible at all, really refer to different climates. Once or twice, however, he has found observations attributed to greek philosophers which would be inexact as to the latitude of Greece for a period of not less than five hundred years *after the age* in which they flourished; as where Euctemon places the rising of Sirius thirty-two days after the solstice.^l Ought we not, on Fréret's own principle, to conclude, that Euctemon followed a calendar constructed as many centuries *after* he was in his grave? The difficulty he escapes at once, by supposing the observation to relate to the latitude of Scythia; les pays septentrionaux du pont Euxin, où les Grecs avaient alors un grand commerce. In another place,^m Eudoxus makes the Pleiads set fifteen days after their true time for his own latitude. Here, again, Fréret makes the observation refer to the

^f Lib. cit. p. 487.

^g Uranol. in vol. iii. de Doct. temp. Præf. ad lect.

^h Usser. de Maced. anno solar. c. vi. Dodwell, append. ad Diss. cypr. § 16. Fab. Bib. gr. lib. iv. c. xiv. § 7. tom. iii. p. 421.

ⁱ Untersuch. s. 91.

^k Hist. de l'Astr. anc. lib. i. § 7, p. 11.

^l Défense de la Chron. p. 487.

^m p. 493.

extreme north of Greece. Why not have applied the same method to reconcile other discrepancies in the statements of Eudoxus, many of which might be accounted for in an equally simple way by supposing observations made in the various countries in which he studied, from southern Egypt to the Hellespont, instead of an appeal to the spheres of Chiron or of Hesiod? But then, as Delambre says, On n'aurait pu bâtir aucun système.

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THE END.

The first of these is the
 fact that the
 government has
 been successful in
 its efforts to
 reduce the
 deficit. This is
 a significant
 achievement, and
 it shows that the
 government is
 committed to
 fiscal responsibility.
 The second point
 is that the
 economy has
 shown signs of
 recovery. This is
 a positive
 development, and
 it suggests that
 the government's
 policies are
 having a positive
 impact on the
 economy.

The third point is
 that the
 government has
 been successful in
 its efforts to
 improve the
 quality of
 education. This
 is a significant
 achievement, and
 it shows that the
 government is
 committed to
 providing a
 high quality
 education for
 all children.
 The fourth point
 is that the
 government has
 been successful in
 its efforts to
 improve the
 quality of
 health care. This
 is a significant
 achievement, and
 it shows that the
 government is
 committed to
 providing a
 high quality
 health care for
 all citizens.

PLATE I.



Tempeſtas I.



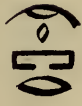
Tempeſtas II.



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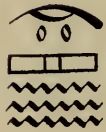
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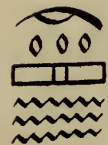
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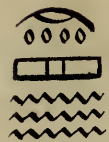
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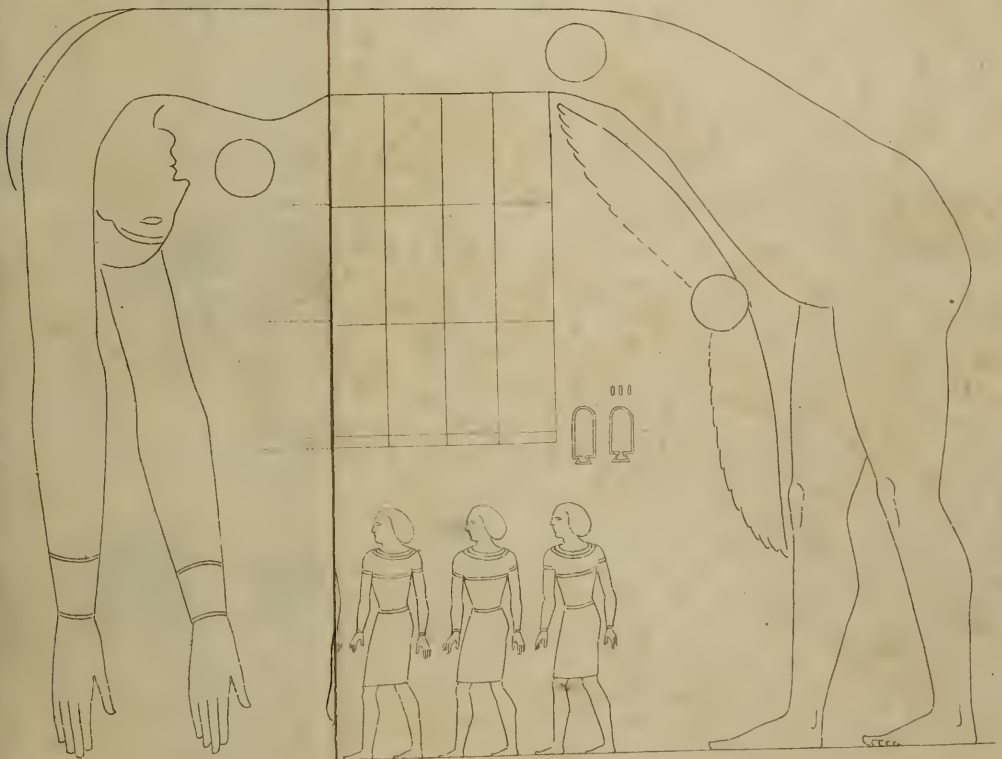
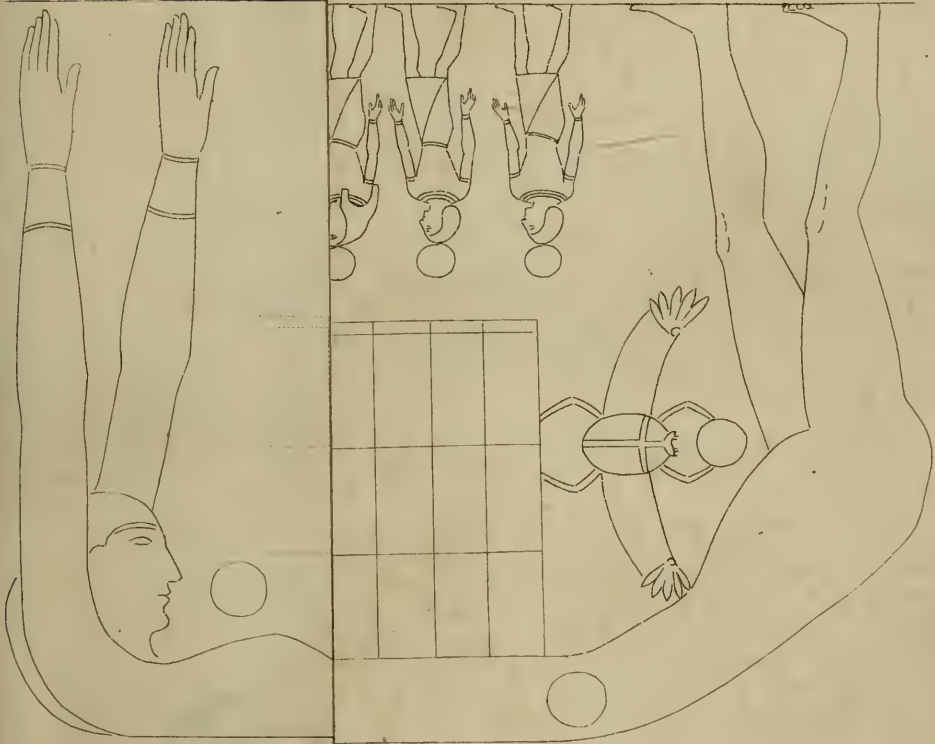


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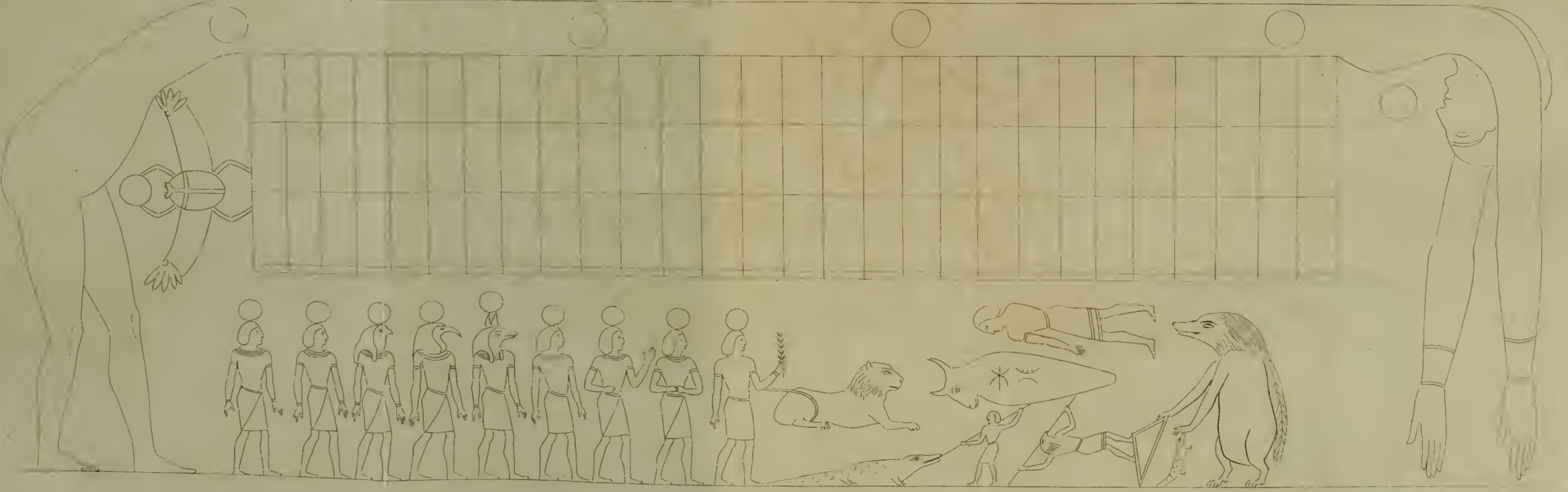
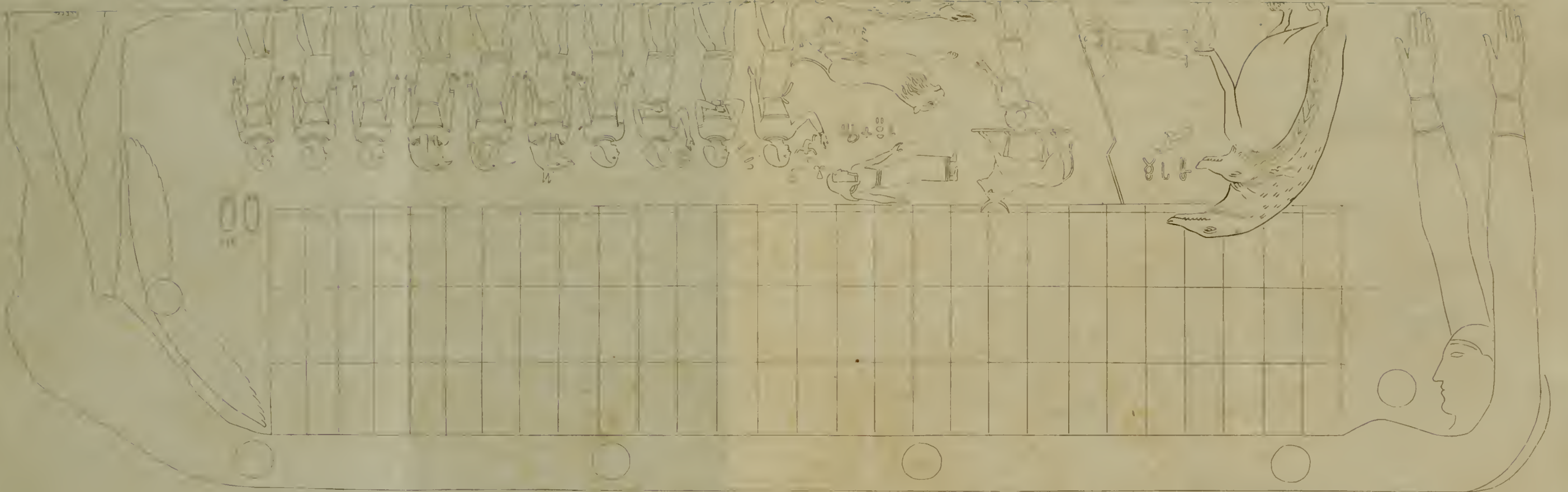
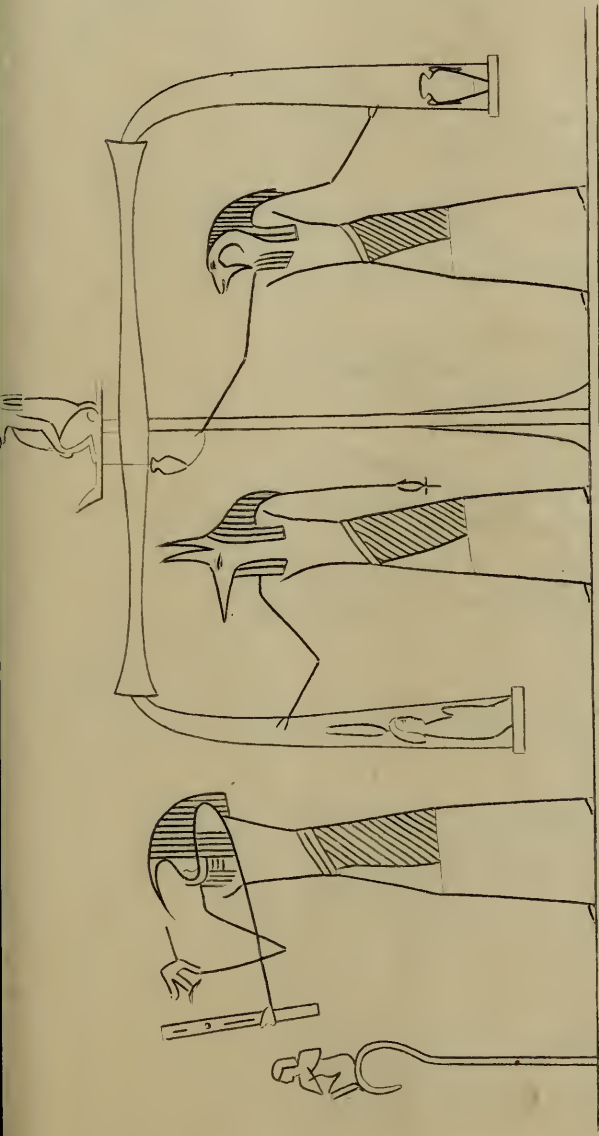
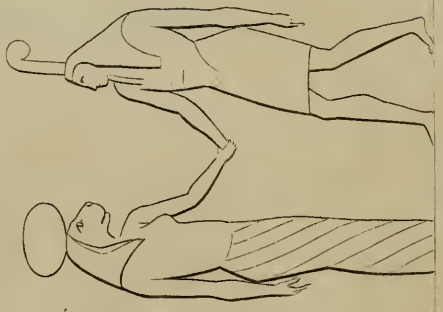


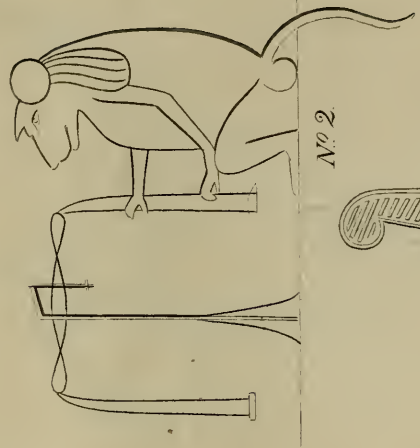
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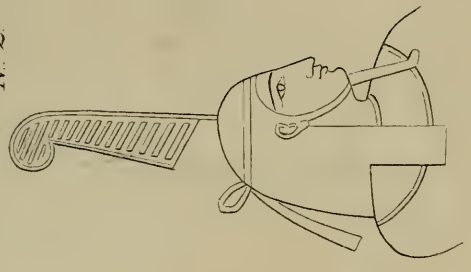
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N^o 4.



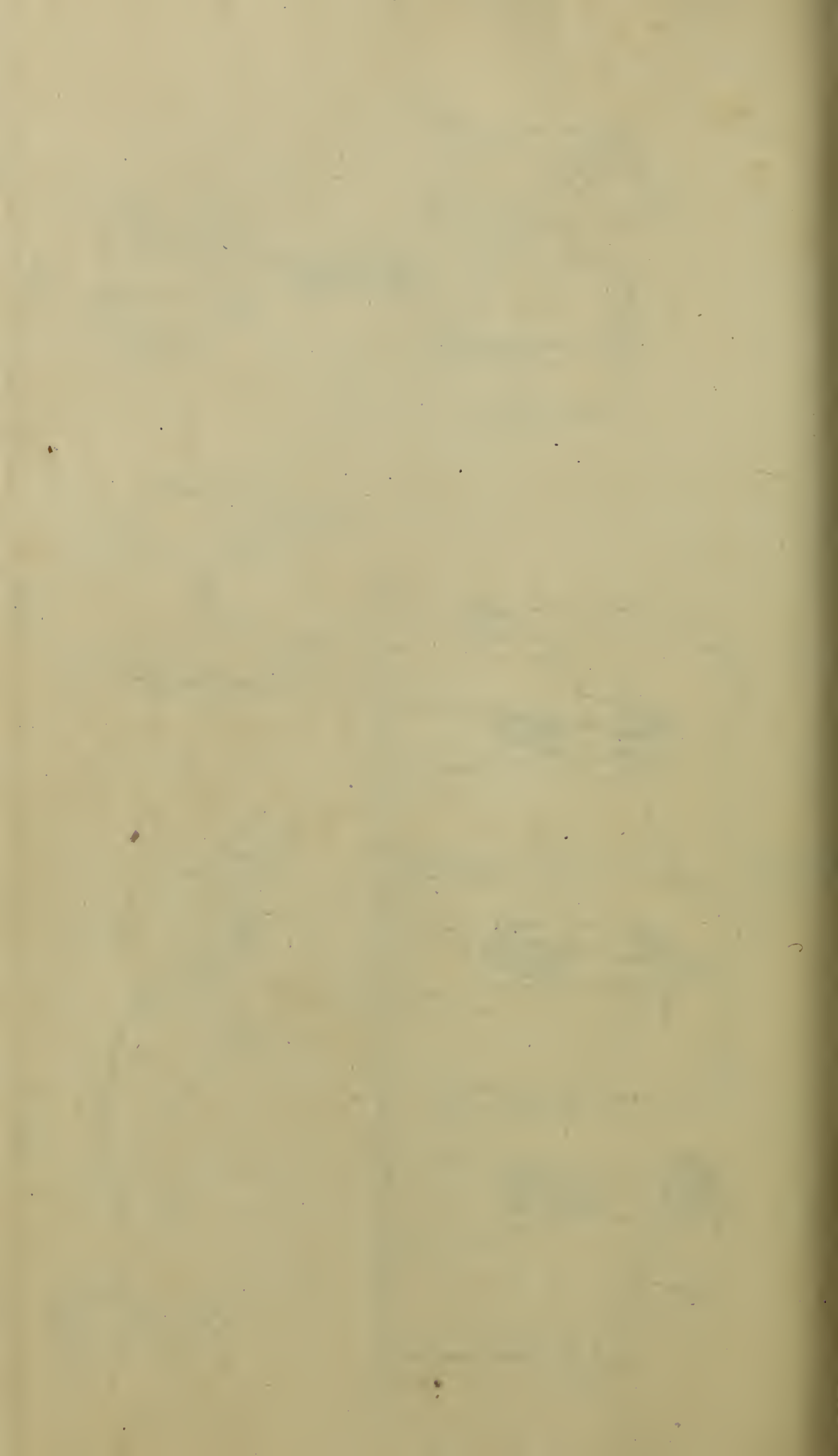
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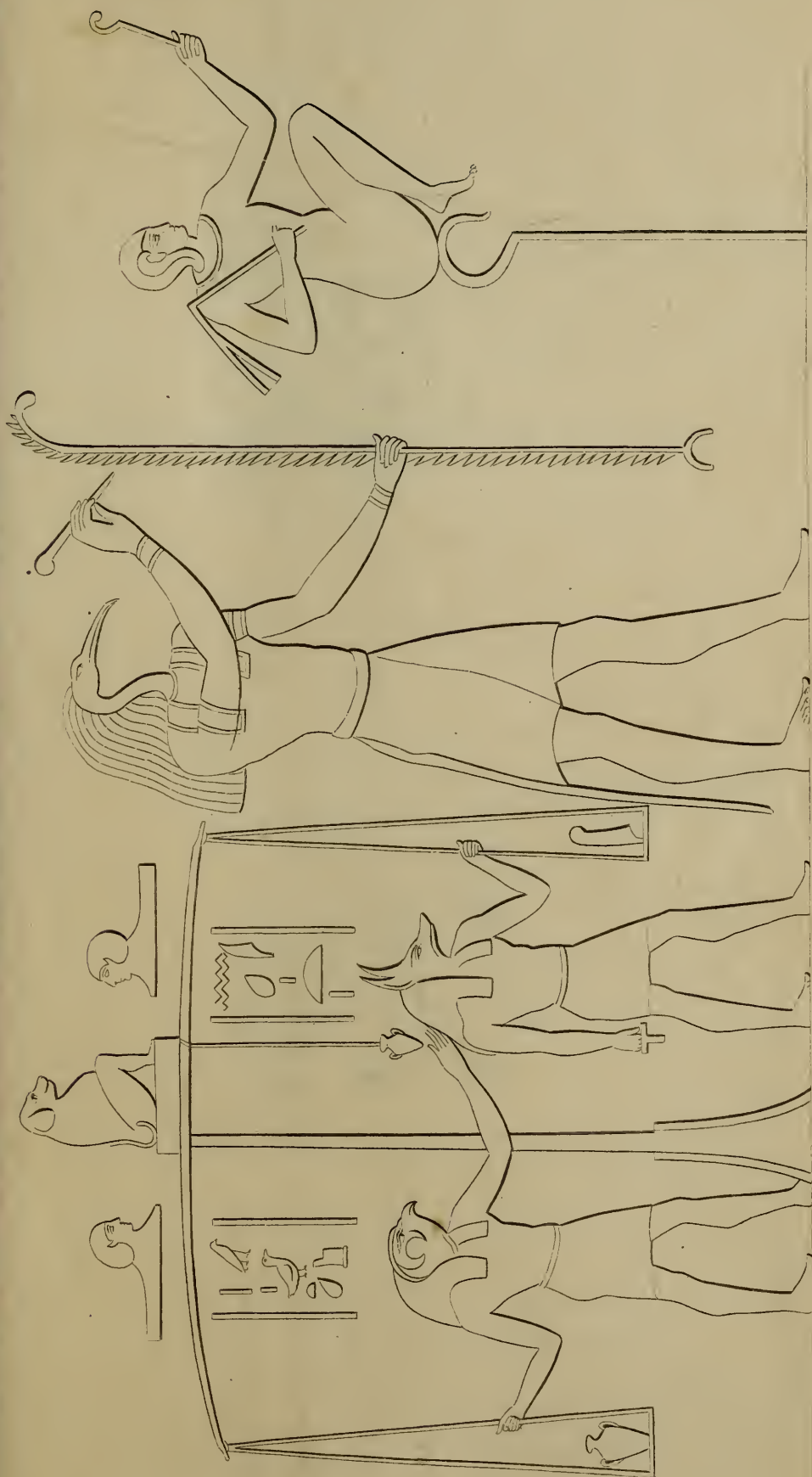


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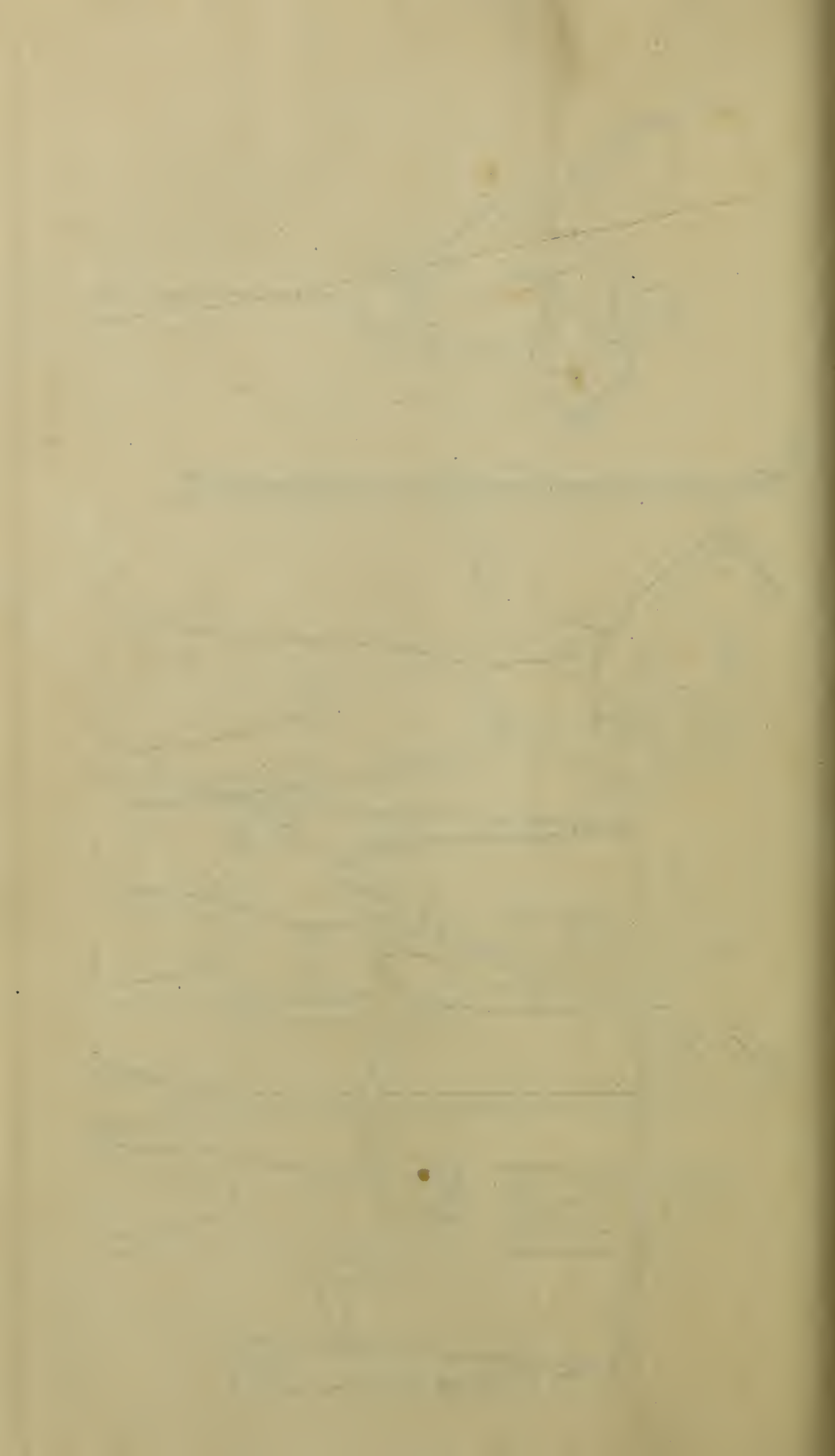


PLATE V.



N° 3.



N° 4.

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N^o 5



N^o 1.



N^o 2.



N^o 3



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N^o 4.

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