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A

DISSERTATION

ON THE

ANTIQUITY, ORIGIN, AND DESIGN

OF THE PRINCIPAL

PYRAMIDS OF EGYPT,

PARTICULARLY OF THE

GREAT PYRAMID OF GHIZEEH,

WITH ITS MEASURES, AS REPORTED BY VARIOUS AUTHORS;

AND THE

PROBABLE DETERMINATION OF THE ANCIENT HEBREW AND EGYPTIAN CUBIT.

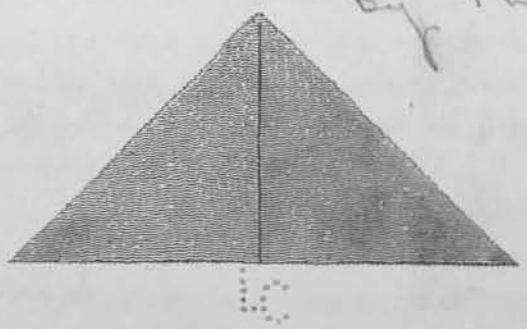
ALSO, ON THE

ORIGINAL FORM AND MEASURES OF THE ARK OF NOAH.

ILLUSTRATED WITH DRAWINGS AND SUITABLE DESCRIPTIONS.

ELIHU. אֲחַוֶּה דַעִי אַף־אָנִי׃

By Thomas Yeates.



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PREFACE.

It is the intention of the author, in the following pages, to collect together the several opinions, accounts, and descriptions given by Authors and Travellers respecting the origin and design of the Egyptian Pyramids; and more particularly, to discourse on their *relative* history, with a view to elicit something useful, and more interesting than considering them as mere piles of stone: and for this reason he begs to apologize for having introduced some notices respecting the Chronology of the First Ages after the Flood—the Ark of Noah—the ancient Hebrew and Egyptian Cubit, with the reduction of the modern measures to that ancient standard: which discussion has also promoted another subject for inquiry, Whether or not the Great Pyramid of *Ghizeeh* was designed as a monument of the discovery of the Egyptian Year? also, Whether it was not a copy of the original Tower of Babel? and moreover, Whether the dimensions of these structures were not originally taken from the Ark of Noah, which it is presumed covered an area of ground equal to the base of the Great Pyramid? And thus, at least, a field is open for a more enlarged view of a subject so dark and obscure, that may be hereafter improved upon by some able hand: for, to suppose that what is at present unknown shall never be known, and that what has not been discovered shall ever remain so, is to put a stop to all inquiry, and close for ever the prospect and hopes of future discoveries in these researches.

Among other authorities, the Sacred History is appealed to, as the most ancient, certain, and safe ground to proceed upon; which reckons ten generations from the Flood to Abraham: and allowing, as the author has previously done in his Chronology, eighty years for one generation in that early period, here will be found a space of time sufficient for all purposes and transactions on record, growth of the arts, and government, as far as can be required; and

all doubt and scruple be removed, to the great advantage of so ancient and important a history. Here then we find room for all the boasted antiquity of the Egyptians, Babylonians, Assyrians, and the most ancient nations in the world, not excepting even the Chinese; as shewn in the Notes and Appendix added to the Dissertation, wherein the inquiring reader may meet with several new expositions, founded on the Original Hebrew text, of much interest: and whatever may be the fate of presenting them to the notice of an enlightened public, the author assures his candid readers, that he has had truth for his sole object, and has not presumed to advance any opinion of his own, but on reasonable grounds and long reflection. Should he be found to have succeeded in developing the smallest portion of the hitherto-unexplained Egyptian and Sacred History, or should his humble attempt afford any useful hint for others pursuing this interesting subject, he shall not have offered his little work in vain. The deciphering of the Egyptian Hieroglyphical Writings and Inscriptions, now so ardently pursued by the Learned of our own and other countries, may, ultimately, find success; and then records and documents of the highest antiquity and importance may be discovered in the history of the world.

Among the ancient Authors referred to by the Compilers of Universal History, and other general works relative to Egypt, its history, antiquities, literature, &c. are these; *viz. Herodotus* (who has devoted his Second Book to this subject), *Diodorus Siculus, Aristotle, Manetho, Strabo, Flavius Josephus, Pliny, Proclus, Pomponius Mela, Ausonius, Cassiodorus, Marcellinus, Spondanus*:—and for the moderns, *Du Mont, Thevenot, Monconys, Lucas, Sandys, Bellonius, Dapper, Radzovil, Gemelli, Coppin, Le Bruyn, Ogilby*, &c.&c.; to which may be subjoined a list of others down to the present period.

1. Greaves (John) Pyramidographia; or, A Description of the Pyramids of Egypt. 8vo. *Lond.* 1646.
2. Kircher (Athan.) Œdipus Ægyptiacus: hoc est, Universalis Hieroglyphicæ Veterum Doctrinæ Instauratio. Fol. *Romæ.* 3 tom. 1652-54.
3. ——— Arca Noë. Fol. *Amst.* 1675.
4. ——— Turris Babel: sive Archontologia. Fol. *Amst.* 1679.

5. Murtadi. Merveilles d'Egypte selon les Arabes. Translated from the French of Vattier, by John Davies. 8vo. *Lond.* 1672.

6. Witsii (Herm.) Ægyptiaca; sive De Ægyptiacorum Sacrorum, cum Hebræis collatione. 4to. *Amstel.* 1683.

7. Vaillant (J. Foy) Historia Ptolemæorum Ægypti Regum. Fol. *Amstel.* 1701.

8. Perizonius (Jac.) Ægyptiarum Originum et Temporum Antiquissimorum Investigatio. 2 tom. 8vo. *Lugd. Batav.* 1711.

9. Nicolai (Joh.) de Synedrio Ægyptiorum Tractatus. 12mo. 1711.

10. An Account of the Sepulchres of the Ancients, by John Mack Gregory. *Lond.* 1712.

11. Atlas Geographicus; or, A Complete System of Geography, Ancient and Modern. 4 vols. 4to. *Lond.* 1714.

12. Brun (Corneille Le) Voyage au Levant, &c. de même que dans les plus considérables Villes d'Egypte, de Syrie, et de la Terre Sante. Fol. *Par.* 1714. 5 vols. 4to. *Par.* 1725.

13. Description de l'Egypte: composée sur les Mémoires de B. Maillet, par l'Abbé le Mascrier. 4to. *Par.* 1735.

14. Perizonius (Jacob) Origines Babelonicæ et Ægyptiacæ. Cura C. A. Duteri. 2 tom. 8vo. *Trag. ad Rhen.* 1736.

15. Greaves' (John) Miscellaneous Works; with an Account of his Life and Writings. By John Birch. 2 vols. 8vo. *Lond.* 1737.

16. Averani (Nic.) Dissertatio de Mensibus Ægyptiorum. 4to. *Florentiæ*, 1737.

17. Jablonski (Paul. Ern.) de Memnone Græcorum et Ægyptiorum, hujusque celeberrimi in Thebiade Statua Syntagma. 4to. *Franc.* 1753.

18. Description Historique et Géographique des Plaines de Heliopolis et de Memphis. 12mo. *Par.* 1755.

19. Travels in Egypt and Nubia. By Frederick Lewis Norden, F.R.S. Captain of the Danish Navy. 8vo. *Lond.* 1757.

20. Travels; or, Observations relating to several Parts of Barbary and the Levant. By Thomas Shaw, D.D. &c. 2d Edition. 4to. 1757.

21. L'Egypte Ancienne; ou, Mémoires Historiques et Critiques. Par D'Origny. 2 tom. *Par.* 1762.

22. Schmidt (Frid. Sam. De) Opuscula, quibus Res Antiquæ præcipuæ Egyptiacæ explanantur. 12mo. *Carolovhæ*, 1765.

22. D'Anville (M.D.) Mémoires sur l'Egypte, Ancienne et Moderne, suivis d'une Description du Golf Arabique, ou de la Mer Rouge. 4to. *Par.* 1766.

23. Schmidt (Frid. S. De) Dissertatio de Sacerdotibus et Sacrificiis Ægyptiorum. 12mo. 1768.

24. Description de l'Arabie &c. Par M. Niebuhr. 4to. *à Copenhague*, 1773. *Amst.* 1776.

25. Laughton's History of Ancient Egypt, from Mizraim to Cambyses. 8vo. *Lond.* 1774.

26. Ægyptiaca: seu Veterum Scriptorum de Rebus Ægypti Commentarii et Fragmenta. Collegit Fridricus Andreas Stroth. Pars I. Herodoti, lib. ii. Pars II. Diodor. lib. i. Gr. 12mo. *Gothæ*, 1782.

27. Letters sur Egypte. Par M. Savary. 3 tom. *à Paris*, 1786.

28. Voyage en Syrie et l'Egypte, pendant les Années 1783, 1784, et 1785. Par M. C. F. Volney. 8vo. 2 tom. 1787.
29. Vaillant (F. Le) Voyages dans l'Intérieur l'Afrique. 5 tom. 8vo. *Par.* 1790.
30. ——————— Second Voyage. 3 tom. *Par.* 1795.
31. Bouchard et Gravier. Monumens Egyptiens: le tot gravé sur Deux Cens Planches. 2 tom. Fol. *Rom.* 1791.
32. Sonnini's Travels in Upper and Lower Egypt. Translated from the French. 3 vols. 8vo. *Lond.* 1799.
33. Travels in Africa, Egypt, and Syria, from the Year 1792 to 1798. By W. G. Browne. 4to. *Lond.* 1799.
34. Description des Pyramides de Ghizée, de la Ville du Kaïré, et ses Environs. Par M. Grobert. 4to. *Par.* An. ix. [1801.]
35. Turner's Account of an Embassy to the Court of Teshoo Lama, in Tibet. 4to. *Lond.* 1801.
36. White (Dr. Joseph, Regius Professor of Hebrew, and Laudian Professor of Arabic, in the University of Oxford):—Ægyptiaca: Part I. The History of Pompey's Pillar illustrated. 4to. *Oxf.* 1801.
37. ——————— Part II. Abdollatif's Account of the Antiquities of Egypt. 4to. *Oxf.* 1802.
38. Denon (V.) Voyage dans la Basse et la Haute Egypte, pendant les Campagnes de Général Bonaparte. 2 tom. Fol. *Par.* 1802.
39. Journal of the late Campaign in Egypt &c. By Thomas Walsh. 4to. *Lond.* 1803.
40. Quatremère de Quincy de Architecture Egyptienne. 4to. *Par.* 1803.
41. History of the British Expedition to Egypt, &c. By Robert Thomas Wilson, Lieutenant-Colonel of Cavalry, &c. 2d Edition. 4to. *Lond.* 1803.
42. Mémoire Explanatif du Zodiaque de Dendera. Par M. Depuis. *Par.* 1806.
43. Recherches Critiques et Historiques sur la Langue et la Litérature de l'Egypte. Par Etienne Quatremère. 8vo. *Par.* 1808.
44. Mémoires Géographiques et Historiques sur l'Egypte. Par M. Quatremère. 2 vols. 8vo. *Par.* 1811.
45. La Décade Egyptienne. 3 vols. *Caïro*, 1811-12.
46. L'Egypte sous les Pharaons: ou, Recherches sur la Géographie, la Religion, la Langue, les Ecritures, et l'Histoire de l'Egypte avant l'Invasion de Cambyses. Par M. Champollion le jeune. 2 Tom. 8vo. à *Paris*, 1814.
47. Legh's Narrative of a Journey in Egypt, and the Country beyond the Cataracts. 4to. *Lond.* 1816.
48. Viaggio di Lionardo di Nicolo Frescobaldi Fiorestino in Egitto e in Terra Santo. 8vo. *Roma*, 1818.
49. Fitzclarence's (Lieut.-Colonel, Earl of Munster) Journal of a Route across India, through Egypt, and to England. 4to. *Lond.* 1819.
50. Nouvelles Recherches de la Pyramide Egyptienne. Par Mons. A. P. J. 8vo. *Par.* 1812.
51. Prichard's (J. C.) Analysis of the Egyptian Mythology. To which is subjoined a Critical Examination of the Remains of Egyptian Chronology. 8vo. *Lond.* 1819.

52. Waddington's Journal of a Visit to some Parts of Ethiopia. 4to. *Lond.* 1822.
53. Paravey (M. de) Nouvelles Considérations sur le Planisphere de Dendéra, ou on démontre que ce Monument n'offre chose que la Sphère d'Hipparque. 8vo. *Par.* 1822.
54. Lettres par M. Champollion le jeune, relative à l'Alphabet des Hiéroglyphics Phonetiques. 8vo. *Par.* 1822.
55. Young's (Dr. Thomas) Account of some Recent Discoveries in Hieroglyphical Literature and Egyptian Antiquities: including the Author's Original Alphabet, as extended by M. Champollion: with a Translation of Five unpublished Greek and Egyptian Manuscripts. 8vo. *Lond.* 1823.
56. Recherches pour servir à l'Histoire de l'Egypte pendant la Domination des Grecs et des Romains. Par M. Letronne. 8vo. *à Par.* 1823.
57. Belzoni's Narrative of the Operations and recent Discoveries within the Pyramids, Temples, and Excavations, in Egypt and Nubia. 4to. *Lond.* 1824.
58. ——— Appendix, containing an Explanation of some of the principal Hieroglyphics. 4to. *Lond.*
59. Salt's (Henry) Essay on Dr. Young's and M. Champollion's Phonetic System; with some additional Discoveries. 8vo. *Lond.* 1825.
60. Scenes and Impressions in Egypt and Italy. By the Author of "Sketches in India." 8vo. *Lond.* 1824.
61. Travels in Egypt and the Holy Land. By William Rae Wilson, F.R.S. Second Edition. 8vo. *Lond.* 1824.
62. Spohn (Frid. Aug. Guil.) de Lingua et Literis Veterum Ægyptiorum, cum permultis Tabulis Lithographis Literas Ægyptiorum tum Vulgari tum Sacerdotali ratione Scriptas explicantibus. 4to. *Lipsiæ*, 1825.
63. Catalogue Raisonnée et Historique des Antiquities découvertes en Egypte. Par M. Joseph. Passalacqua de Trieste. 8vo. *à Par.* 1826.
64. Recollections of Egypt. By the Baroness of Von Minutoli. 12mo. *Lond.* 1827.
65. Travels in Turkey, Egypt, Nubia, and Palestine, in 1824, 1825, 1826 and 1827. By R. R. Madden, Esq. 2 vols. 8vo. *Lond.* 1829.
66. Letters from the East. By John Carne, Esq. 8vo. *Lond.* 1826.
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68. Recollection of Travels in the East: being a Continuation of "Letters from the East." By John Carne, Esq. 8vo. *Lond.* 1830.
69. Lettres à M. Letronne sur les Papyrus Bilingues et Grecs, et sur quelques autres Monumens Greco-Egyptiens. Par C. J. C. Reuvens. 4to. *à Leide*, 1830.
70. Mure's (W.) Dissertation on the Calendar and Zodiac of Ancient Egypt. 8vo. *Edin.* 1832.
71. Travels in Egypt and Nubia, Syria and Asia Minor, during the years 1817-18. By the Hon. Charles Leonard Irby, and James Mangles, Commanders in the Royal Navy. 8vo. *Lond.* 1833.

CHRONOLOGY, &c.

72. Usher's (Archbishop) Annals of the World. Fol. *Lond.* 1658.
73. Vossii (Isaaci), de Septuaginta Interpretibus eorumque Tralatione, et Chronologiæ Dissertationes. 4to. *Hagæ-Comitum*, 1661.
74. Chronologie des Rois du Grand Empire des Egyptiennes. 12mo. 2 vols. 1675.
75. Index to the English Bible.
76. Petavii (Dionysii) Opus de Doctrina Temporum. 3 tom. fol. 1703.
77. Tabulæ Synchronismorum Historicorum in Rebus Ægyptiis, Hebræicis, aliisque: in qua Marshami Chronologiæ Funditus evertitur, tum illæ Usserii, Cappelli, Perizonii, aliorumque examinantur et confutantur. 2 tom. *Ludg. Batav.* 1711.
78. The Scripture Chronology; or, An Account of Time, from the Creation of the World to the Destruction of Jerusalem. By Arthur Bedford. Fol. *Lond.* 1730.
79. A Dissertation on the Chronology of the Septuagint; with an Appendix, shewing that the Chaldean and Egyptian Antiquities, hitherto esteemed fabulous, are perfectly consistent with the Computations of that most ancient Version of the Holy Scriptures. By the Author of *The Vindication of the History of the Septuagint* [Charles Hayes, Esq.]. 8vo. *Lond.* 1741.
80. Jackson's Chronological Antiquities. 3 vols. 4to. *Lond.* 1752.
81. Dr. Hales's New Analysis of Chronology. 4 vols. 4to. *Lond.* 1809.
82. Morrison's (Rev. R.) View of China, for Philological Purposes; containing a Sketch of the Chinese Chronology, Geography, Government, Religion, and Customs. 4to. *Macao*, 1817.
83. Yeates's (T.) Remarks on the Bible Chronology. Being an Essay towards reconciling the same with the Histories of the Eastern Nations. 8vo. *Lond.* 1830.

DISSERTATION

ON THE

PYRAMIDS OF EGYPT,

&c. &c.

THIS celebrated country obtained its original name from MIZRAIM the son of HAM (Gen. x. 6). The first notice of it as a country, we find in Gen. xii. 10. when the Patriarch Abraham, driven by famine, went down into MIZRAIM, *i.e.* EGYPT, to sojourn there; which is also the name of the people mentioned in the same chapter. The original is pointed in the dual form, מִצְרַיִם. Whether this may be understood of *twins* born, or from the natural division of the country by the Nile into East and West Egypt, or into Upper and Lower Egypt, History does not help us to determine: but the preferable opinion may be, that the first colonists, who peopled this and other countries, were sent out in pairs, *two* and *two*.

In Abraham's time, Egypt was peopled; had a king and princes; and the Pharaohs of Egypt could boast of their antiquity at least from this period. Such being the historical fact, it becomes a question how to reconcile the history with the very limited period allowed in the Hebrew Chronology from the Flood to the time of Abraham; at least but 292 years, and at most 352 years, for the growth of a kingdom: but, however difficult this may appear, it may not be absolutely insolveable, by admitting a defalcation of at least *three hundred and fifty years* in our vulgar Hebrew computation, according to calculations submitted in my Remarks on the Bible Chronology.

With respect to the antiquity, origin, and design of those stupendous monuments of human labour, called PYRAMIDS, it has been a subject of great interest among the Learned of most nations; and the diversity of opinions respecting them has only increased the difficulty of arriving at any satisfactory conclusion, or solution of the great question. Herodotus, the earliest and

most eminent of the ancient Greek Historians, who flourished about 480 years before the Christian æra, attests to the existence and antiquity of those vast piles extant in his own time, but leaves us in the dark as to their origin: in a word, their history seems lost in their antiquity, and every tradition of them perished*. Their number, local situation, form, and architecture have been fully reported on by Travellers; and this is all that is certainly known respecting them.

It may, however, be serviceable to collect the more current and plausible opinions that have been raised in the investigation. As,

I. Whether they were designed for Granaries for the storing of corn, in a country so famed for that produce; and, in the event of bad harvests, to provide for the public necessity.

II. Or, whether for retreats of safety, in the event of a second Flood, or of any sudden and extraordinary inundation in a country subject to the overflowing of the Nile.

III. Or, for Mausoleums or Tombs, for the interment of their Kings and other illustrious dead.

IV. Or, for Monuments of greatness, raised to immortalize their fame, or to memorialize any great achievements in wars, and other great national events.

V. Or, whether designed for consulting their Oracles, within their secret and impenetrable chambers, accessible only to their Priests.

VI. Or, whether designed for Astronomical purposes; or as *Gnomons*, whereby to mark and determine the places and positions of the heavenly bodies.

VII. Or, lastly, whether those great and costly piles were not raised for Altars devoted to their Gods; and afterwards became the Tombs and depositaries of their Kings.

(1) In regard to these several questions, or as we shall shape them as propositions;—the first appears to be the least entitled to notice; as hath been ably shewed by Du Mont and other Writers; for, certainly, those solid

* "Inter omnes eos, non constat à quibus factæ sint, justissimo casu obliteratis tantæ vanitatis authoribus."—*Plin.*

structures could not be the best designed for capacity; and this is sufficient to set at rest any doubt on the question.

(2) On the supposition that those structures were designed for retreats of safety, in the event of any second Deluge or of any vast land-floods, may appear plausible from their elevation, being capable of giving refuge to many thousands of persons: but hereupon arises another difficulty—that, in the event of such flood or inundations, the higher the rise, the less would be their utility in the preservation of life. The *adytum*, or entrance of the Great Pyramid, which is on the north side, is, by Mr. Greaves's account, elevated above the base some thirty or forty feet; so that it must be indeed a vast and almost universal flood to have admitted waters at this entrance; and therefore the greater the danger, the less the retreat could be for safety.

(3) The third proposition is the generally-received opinion of Authors; viz. that they were designed for Tombs and Mausoleums for the illustrious dead;—an opinion well founded on the internal structure of some of them, particularly of the chambers and galleries in the Great Pyramid at *Ghiza*, capable of receiving many bodies. But even the history of this Pyramid does not decisively settle the question; for the first gallery which is entered leads down, by an easy descent, to a well, now filled with rubbish; whence proceeds a long gallery upwards to the several chambers, where no trace of any human bodies is found to exist, nor the possible manner how such bodies could be conveyed there at any time, except when first built. Mr. Greaves and his company found the extreme parts of the upper gallery, leading into the great chamber, so straight and difficult, that, as he says, they were obliged to creep upon their bellies to enter it. Besides, what have the dead to do with wells of water? Water is not for the dead, but the living.†

(4) The fourth proposition regards these piles as having been erected in memory of some great events or achievements, or raised to perpetuate the fame of the projectors to posterity. And here may come into consideration the founder of the kingdom of Egypt, and the projection of the Tower of Babel, dedicated to their God Bel; and as an everlasting monument of their

† *Qu.?* Whether this pit may not lead to some other unexplored part of the Pyramid. It would be a costly experiment; but it might be worth while to ascertain the fact, whether so, or not.

fame, in establishing the first of empires; of which the Egyptians seem to have had their copy;—an idea not altogether to be passed over; for, as those colonists travelled with the sun, they might have built the first Pyramid soon after the dispersion at Babel, and assign to it some certain antiquity beyond what any Heathen Writers are able to afford us.

(5) The fifth proposition supposes them to have been designed for Cavern Oracles: and, in support of this hypothesis, their secret chambers, and intricate and dark approaches, are urged as best fitted for such resort. But with regard to such opinion, we must allow that the Egyptian Temples were everywhere the most appropriate places, and most easy of access for their secret consultations of their Oracles.

(6) The sixth proposition considers them to have been built for Astronomical purposes; or, at least, that their chief use was for the observation of the stars; or for *gnomons*, the better to determine the motions of the heavenly bodies. The same opinion has obtained in regard of the Tower of Babel: but both seem without any foundation; for those Pyramids, and the greatest of them, could certainly not be the most conveniently formed for the accommodation of astronomers and their instruments, the summit of the Great Pyramid not being of a dimension even to admit of an apartment suited for observation, day or night.

(7) Seventhly: Whether they were not designed for Sacred purposes; or as Altars, of whose FIRE they were a just imitation. The summit of the Great Pyramid, which is, by report, about sixteen feet square, admits the supposition that here was the High Altar; either for sacrifice, on any great occasions; or for their Chief Idol, thereupon placed, in former ages.

Mr. Greaves, who made surveys of these Pyramids, or the three principal ones, in the years 1638 and 1639, reports of the Great Pyramid, as follows:—That "it stands upon an elevation of rocks in the sandy desert of Libya, extending about a quarter of a mile from the plains of Egypt; with a gentle and easy ascent, rising to a height of about a hundred feet." He, having measured this Pyramid by triangles and a ten-foot radius, found it to be 693 feet English at the base; the perimeter, or four sides, equal to 2772 feet; and its altitude, 481 feet: the same being ascended, in his time, by 207

degrees or steps, terminating with a square surface at the top: which being allowed for, its true conical measure will be found about 500 feet from the base. "From the four sides," says this author, "you ascend, on the outside, by degrees or great steps: the lowermost degree is nearly four feet in height, and three in breadth: this runs about the Pyramid, on a level; and at the first, when the stones were entire, which are now somewhat decayed, made on every side a long narrow walk. The second degree is like the first; such stone amounting to almost four feet in height, and three in breadth: it retires inward from the first nearly three feet; and this runs about the Pyramid, like the first, on a level: in the same manner is the third now placed upon the second; and so, in order thereto, like so many stairs rising one above another to the top, which terminates in a square flat surface." He observes, that the dimensions given of the lower parts of the structure do not equally extend to the superior parts of it, but that the degrees gradually decrease towards the top; so that probably these piles have been stripped of many layers of stone since they were first built. This accords with the Ancient Writers, in their descriptions; for that the steps were more in number in their times than found since: and whereas the surfaces are said to have been covered with marble, they shew themselves to have been stripped and dismantled of their ancient splendor.

If we examine the description given of the second Pyramid, we shall find the remains of cloisters or lodgments for the priests, and a spacious walk on two of the sides cut in the rock; which may be described the court of the building, separated from common ground: there does not appear the same buildings about the first Pyramid, but time may have destroyed them. Thus does the external form and appearance of these edifices, duly considered, present to us some idea of the altars and temples of the first ages after the Flood.

Mr. Greaves calls the steps, "degrees." The first place where this word is used in the Bible is in the Book of Exodus, where, for the abolition of profane rites, and to restore the primitive simplicity in public worship, the Almighty was pleased to enjoin how He would be served by His people, Israel; and gave special directions concerning altars and sacrifices: for thus are the words, Exod. xx. 24—26.

"An altar of earth thou shalt make unto me, and shalt sacrifice thereon "thy burnt-offerings, and thy peace-offerings, thy sheep, and thine oxen. . . .

"And if thou wilt make me an altar of stone, thou shalt not build it of hewn "stone: for if thou lift up thy tool upon it, thou hast polluted it. Neither "shalt thou go up by steps unto mine altar," &c.

The Hebrew word is מַעֲלוֹת "*Mahaloth,*" *gradus*, degrees, stairs, steps; from עָלָה "to ascend." The prohibition seems to have reference to a practice then in use, among the Egyptians at least; and their altars of wrought stone, consisting of many steps, of which the Pyramids seem to have been the originals. The precept, however, must not be understood to the exclusion of a base, which was allowable both for ornament and use; as may be understood from that of the Tabernacle, and afterwards of the Temple: the former was three cubits high, at which no priest could officiate without standing upon the base, raised one or two steps high: the prohibition is, therefore, against a plurality of steps, and against mounting the Altar of God; as the Heathen Priests did, to the discovery of their nakedness*. The Hebrew institutes were decidedly opposed to all such obscenities and Pagan inventions.

It must be acknowledged, that we are utterly at a loss, from the want of ancient prophane histories, to know what were the Egyptian rites, as to altars and sacrifices, in the ages immediately subsequent to the Flood; but it does nevertheless appear, from the Sacred accounts, that idols of gold and of silver, altars and hill-altars, were in early use, and extensively used among mankind, long before the time of Moses; or, why do we read of the prohibitions in question?—I shall now offer a few notices respecting the Altars of the Ancients.

The Hebrew name for "Altar" is מִזְבֵּחַ *Mizbeah;* from זָבַח *zabah,* "to sacrifice:" hence the word denotes "the place of sacrifice." Another word is בָּמָה *Bamah, i.e.* "a high-place:" *Lat.* Excelsum, Sacellum, Ara Idolorum: and in the plural, בָּמוֹת *Bamoth,* a very popular word in the Bible History connected with the Heathen Religion; from whence is derived the Greek words Βᾶμα and Βωμὸς, also Βῆμα "tribunal," from the elevation; as "*Alta,*" or "Altar," for the same reason.

Altars were used, for the worship of God, by Adam, Noah, and all the Patriarchs from the beginning of the world, and long before Temples. The Heathens took the use of Altars from them; whereof they had three sorts:

* Exod. xx. 26.

1. Those to the Celestial Gods, which were breast high, and erected upon hills, and the highways, and in groves;—that of the Olympian Jupiter was twenty-two feet high. 2. Those to the Infernal Gods were placed in a trench below ground. And, 3. Those for the Terrestrial Deities, which were erected upon the ground, but low, flagged with sod, and covered with the sacred vervain. Altars were esteemed most sacred; for upon them they made their most solemn vows and oaths, by laying their hands upon them in a solemn manner; as in the instance of Hannibal; of which see *Corn. Nepos*, &c.

The High Altars and Hill Altars of the Canaanites, Moabites, Ammonites, and other nations, were but copies and puny imitations of their originals; which may be traceable in the examples of the grand structures of the Egyptian Pyramids, and of the Tower of Babel: for, so far as tradition enables us to judge of their structure and design, they were sacred edifices, and raised in honour to the Majesty of Heaven: but the Great Deceiver of Mankind beguiled them, and transferred the glory to himself: they substituted the image of a man for their god, and the creature instead of the Creator; which error soon overflowed the world with idolatry.

The progress of idolatry seems to have kept equal pace with the population of the earth, since the time of the building of the Tower of Babel. It is necessary to introduce some notices and traditions respecting the Tower of Babel; as from such premises some parallel may be drawn respecting the origin of the Pyramids.

Concerning this famous city and tower, the Sacred History informs us, that the people, having journeyed from the East, settled in the Plains of Shinaar, and there commenced their grand project of forming an universal empire:—"Go to (said they one to another), let us make brick, and burn "them throughly. And they had brick for stone*, and slime had they for "mortar." The materials being prepared, they resolved on the building. "And they said, Go to, let us build us a City and a Tower, (Hebrew, מִגְדָּל "*Migdal*,) whose top may reach unto heaven; and let us make us a name, "lest we be scattered abroad upon the face of the whole earth." The hyperbolical expression here employed by the Sacred Historian seems to refer to

* Instead of stone in the country from which they came, where stone probably was in plenty: and hence we may suppose that the people migrated from the hills not the plains, or from the North and North-east, in a southerly direction, to Shinaar.

the extraordinary and boundless ambition of those builders, as if intended to scale Heaven itself.

If it be true what Historians relate, this *Migdal*, or Tower, was no other than a vast and lofty Pyramid, of a square form, and ascended by steps on the four sides. Now this account, which hath its foundation in the Sacred History, seems to be a key to both the age and design of the Pyramids of Egypt, or, at least, of the most famous of them; namely, as monuments of their name and fame, to posterity. And, finally, the Temple of Bel, in Babel, bespeaks it dedicated to their god, or "the Lord of Heaven:" and, in imitation hereof, and if possible to outvie them, we may conjecture that the Egyptians built their Great Pyramid with like intent.

Herodotus, the Greek Historian, who is said to have flourished about a hundred years before Alexander the Great, attests that the remains of the City and Tower of Babel were to be seen in his time, and that he himself had seen them; and gives the following description:—"In the city of Babylon there is a temple with brazen gates, consecrated to Jupiter Belus, being four-square; and each side being two furlongs in length. In the midst of this holy place," as he calls it, "there is a solid tower (this is that which we call the Tower of Babel), of the thickness and height of a furlong; upon which there is another tower placed, and upon that another; and so on, one upon another, insomuch that there are eight in all. On the outside of these there are steps or stairs placed, by which men go up from one tower to another. In the middle of these steps there are resting-places; and rooms were made for the purpose, that they who go to the top may have conveniences to sit down and rest themselves."

The admirable and minute descriptions of the Grecian Author, both of the City and Tower of Babylon, display a masterly hand, and afford a valuable testimony to the Sacred History. These descriptions, in so ancient an author, require, nevertheless, some elucidation, to render them intelligible and interesting. The most conclusive account of the Tower appears to be this;—that it was four-square; that it was built in the centre of an area whose side was equal to two stadia or furlongs, which formed the Court, called the Temple or Holy Place, inclosed by walls and brazen gates, within which altars were placed, and sacrifices offered. This Court so exactly accords with the descriptions of the Tabernacle and Temple in Sacred History, that we cannot but

notice it. The Tower or Temple itself is described, in length and breadth one stadium or furlong, and the same in height; which, if we were enabled to determine, corresponds with the base of the Great Egyptian Pyramid. It is reported to have consisted of several stories, in each of which was a chapel. The drawings and description of this building, published in the *Universal History*, and copied in Mr. Bedford's Chronology, present eight stories from the ground; but the lowermost being accounted for the base, the superstructure consisted of seven stories, raised one upon another, and retiring inwards, to the very top.

Herodotus relates, from the tradition of the Chaldean Priests, that the temple or place of sacrifice stood below, *i.e.* in the Great Court; wherein was placed a large image of gold, represented in a sitting posture, on a throne, at a table of the same metal; altogether weighing eight hundred talents: without this chapel was an altar of gold; and another of greater size, used when cattle of full growth were sacrificed; for on the golden altar no other than sucking victims were offered;—that, on the great altar, the Chaldeans consumed yearly the weight of a thousand talents of incense, when they celebrated the festival of their god. Besides these things, a statue of solid gold, twelve cubits high, stood formerly in this temple, &c.

Others place this idol in the upper room or chapel; describing him as holding a large sword in his hand, whom they worshipped by the name of *Belus* or *Bel*, supposed to represent *Ham*, or Jupiter Hammon. The Chaldee Paraphrase of Jonathan favours this opinion; and also the Jerusalem Targum, on the passage—"Go to, and let us build us a city, and a Tower whose top "may reach up to heaven; and let us make for us an idol for worship on the "top thereof, and put a sword in his hand, that he may defend us against war, "before we be scattered abroad upon the face of all the earth." Thus it appears, that whilst this Tower was designed as a monument for fame, it was also raised to the honour of their God Bel, and made a sanctuary.

Josephus, and almost all writers, make Nimrod the head of this project and conspiracy against the command of Noah, who had ordered them to settle in distinct colonies, and not to fix themselves in one place. The time of the building of this city and tower, and of the confusion of tongues, is involved in the greatest historical obscurity; and little credit can be given to any conjecture formed on it, only as a matter of fact. In my humble opinion, the Great

Egyptian Pyramid soon followed the Tower of Babel, and both had the same common design; and therefore I consider it worth while to submit an observation or two from writers of reputation. Cedrenus, who follows the Septuagint, places the event in the 494th year after the Flood, as I have quoted already, in my Remarks on the Bible Chronology, page 8. Syncellus, a more ancient writer*, remarks on this part of the history, that the project at Babel could not well be placed earlier than 500 years after the Flood: whose words I shall here quote, as follows:—" No one is any where read of to have usurped the " government immediately after the Flood. They ascribe to Noah only the " exercise of the government over his own sons and the rest of mankind, the " whole of his life, namely, 350 years after the Flood: his son Shem suc- " ceeded him in ruling over a small number of men during the residue of his " life, 150 years; of whose power Arphaxad became heir, and governed men " 33 years: and so by these three was the government of mankind held " 533 years after the Flood. But in the time of Arphaxad, and before he had " reigned seven years—that is, in the year of Shem 594; of Arphaxad 493; of " Cainan, omitted by Eusebius, 358; of Salah 228; of Heber 98; and of Peleg 4 " —the grandsons of Noah, lest they should again perish by a flood, took a " pernicious counsel to construct a Tower that should even reach unto the " heavens; and so having departed to the land of Shinar, and now having " Nimrod the son of Cush, the son of Ham, the son of Noah, the head of whose " kingdom was Babylon, they began the building, as the Scripture attests; and " continued to persevere in the work forty years from the commencement, " Nimrod chiefly instigating them in this act of rebellion, until at length they " fell into confusion." *Chronogr.* pag. 42. *Ed. Par.* 1652.

Thus far it appears, from the consent of these Byzantine authors, that the building of the Tower of Babel cannot well be placed within at least 350 years after the Flood; nor later than 500 years after, at most, when those colonists left the plains of Babylon for new seats westward; where, we may reasonably conjecture, among other transactions, the Egyptians began to commemorate themselves in building their Great Pyramid;—for great it was, occupying a space of ground equal to twelve English acres! as computed by Mr. Greaves. The four sides, considering its height little under 500 feet, were sufficient

* *Syncellus* is reckoned among the Ecclesiastical Writers in the latter part of the eighth century, by Dr. Cave, in his *Chartophylax Ecclesiasticus*. *Cedrenus* lived about An. Dom. 1057.

to give standing to many thousands of persons, and for all the Priests of Egypt, in the celebration of any great anniversary sacrifices to their God Apis; to which, by the testimony of Herodotus, they offered bulls in sacrifice: for of some such custom the Arabian historians have a tradition, that when the Egyptian devotees performed their pilgrimages to the Pyramids, they offered incense, and sacrificed a black calf: which leads to the opinion, that the original Pyramids were sacred edifices and altars, consecrated to the Gods; and that this interpretation gives some force to the prohibitions respecting altars, given by Moses at the command of God, already mentioned*.

Not only in Egypt and India, but also in America, were such pyramidical altars built, being raised on high, and ascended by many steps; as related by the Spanish historian, Antonio de Solis, in his description of the Great Temple of Mexico:—"The site of that temple devoted to the worship of the Sun, "and its altar for human sacrifices, was a large square, environed by walls, "cloisters, and gates: in the centre was raised a high tower of a pyramidical "form, broad at the base, and narrowed towards the top, having four equal "sides in a sloping direction; in one of which was a flight of 150 steps to the "top, covered with the finest marble, with a square marble pavement, guarded "with a ballustrade: in the centre stood a large black stone, in manner of an "altar, placed near the idol. In the front of this tower, and at a convenient "distance from its base, stood a high altar of solid masonry, ascended by thirty "steps: in the middle of it was placed a large stone, on which they slaughtered "the numerous human victims devoted for sacrifice; the outside being set "with stakes and bars, on which were fixed human sculls†."

This account of the Mexican Temples, of which there were no less than eight in that city, affords some ground to infer that these execrable customs had their origin in the equally horrid rites of the ancient Canaanites, Ammonites, Moabites, and other Eastern nations, and their sacrifices to Moloch. Mexico was taken, plundered, and burnt, by the cruel Hernando Cortez, August 13th, A.D. 1521, in the 140th year from the foundation of the royal seat there; who murdered above a million of persons. God punished them by this cruel scourge, for their abominable idolatry: for they had two

* Page 6.

† See the History of the Conquest of Mexico by the Spaniards, written by Don Antonio de Solis, and translated into English by Thomas Townsend, Esq. Fol. *London*, 1724. Book iii. 72.

thousand gods, to whom they offered human sacrifices; one time, five thousand. They sacrificed 20,000 men a year; so that, in the Great Temple, human blood, dashed upon the walls, lay congealed, above a foot thick." It is related, that they sacrificed to their idols five and six thousand children every year; and that one of their kings sacrificed 64,080 men in the space of four days, A.D. 1486.

The Temple of Moloch, the idol of the Ammonites, tradition describes as follows:—The idol Moloch was a hollow statue of brass, with the head of an ox and the arms of a man, with seven chapels. It was made red hot; when the priests threw the sacrifices into it, where they were burnt to death in a dreadful manner. He that offered his first-born kissed the idol, Hos. V. 2. These horrid abominations were proscribed by the Jewish Law; and many ages afterward by a decree of Darius, who, as Justin relates, sent ambassadors to Carthage, forbidding them to eat dog's flesh and to offer human sacrifices*—the Carthaginians having offered 200 of the children of their nobility at one time, and 300 at another; which gave occasion to this his humane interference. Constantine the Great abolished the heathen sacrifices all over the Roman Empire;—a grand evidence of the vanity of Paganism, and of the power of the Christian Religion, which shed abroad its benign influence over the then dark regions of the earth, dislodged Satan of his strong-holds, and now ceases not to triumph over the Powers of Darkness from the rising to the setting sun.

If we consider the construction of the Step-altars, High-places, or Hill-altars of the Heathens, recorded in Sacred and Profane History, it seems not difficult to decide on them as having a common origin, and, consequently, their transmission from age to age, and from nation to nation. The Babylonian Tower; the Great Egyptian Pyramids; the Hill-altars of the ancient Canaanites, Tyrians, and Carthaginians; and the Temples and Pagodas of Persia, India, China, and America, plainly shew it.

The Rev. Mr. Maurice, author of Indian Antiquities, in his learned Observations on the Ruins of Babylon†, is of opinion that the Temple of

* Lib. xix. ch. 1.

† Observations connected with Astronomy and Ancient History, Sacred and Prophane, on the Ruins of Babylon; as visited and described by Claudius Rich, Esq. By the Rev. T. Maurice. *London*, 4to. 1816.

Mexico, dedicated to the Sun and Moon, was formed on the model of the Tower of Babel; of which he gives a drawing (p. 97) similar to that published in the Universal History; being of a square form, and consisting of five stories, ascended by steps to the top, whereon stand two chapels. In the same work, Mr. Maurice has given a drawing (p. 49) of the great Pagoda at Tanjore, built of hewn stone, in form of a Pyramid; consisting of twelve stories, the lowermost being built on huge blocks of stone forming the pedestal, raised on four steps from the ground. On the top is a sort of temple or chapel.

It is remarked, that in China they have no Pyramids, but Pagodas, raised by galleries, one above another, to the top: the most celebrated of these is that called the Porcelain Tower, in Nankin, said to be 200 feet high, and forty feet at the base, built in an octagonal form. These Pagodas seem to have been designed for altars of incense, raised to their aërial deities, with which to appease them; and their hanging bells, with their tintillations to drive away the demons, lest they should, by noxious and malignant winds and tempests, disturb their serene atmosphere, and afflict their country. All these structures appear to have had their origin in DEMON-WORSHIP; whose real promoter was SATAN himself, who is emphatically called the "Prince and Power of the Air," and "the God of this World;" who drew mankind into open rebellion against the Sovereign Creator of the world, and enslaved them to himself. Our Poet, Milton, admirably describes this MOLOCH and Prince of Devils, usurping the dominion of God, until the moment he was cast down from the heavenly places by the power of Christ:—

> "High on a throne of royal state, which far
> Outshone the wealth of Ormus or of Ind',
> Or where the gorgeous East with richest hand
> Showers on her kings barbaric pearl and gold,
> SATAN exalted sat."—— *Par. Lost. Book* II.

This is he, who, in the garb of an Angel of Light, said to the Saviour of the world, "*All the kingdoms of the world are mine, and the power thereof; and to whomsoever I will, I give it.*" At this moment began those words of the Saviour of Mankind to be fulfilled, "I saw Satan as lightning fall from heaven;"—a presage of the triumph of the Gospel about to be promulgated among all nations.

And here I must digress, and submit to my reader the luminous and masterly exposition of Dr. Bray*, who, in his age and time, seems to have been peculiarly qualified to set forth the stratagems of Satan, and advance the interests of Christianity.

"Nothing," says this learned and pious writer, "does so much speak the excellency of any institution, as the greatness of its end and design: and, according to this measure, nothing can appear more noble and august in itself, and more useful for us to be acquainted with, than the grand design of the Gospel; since, when considered in the full and adequate design thereof, its intent and tendency will appear to be this—to advance the greatest things in the world, The right and sovereignty of God, and the well-being and happiness of man. As for the Scripture in this case, this vein of doctrine runs throughout the whole, That some of the Chiefs among the Angels, having themselves rebelled against God, they did, after the manner of heads in all revolts, induce mankind to side with them in the same; and, out of a most bitter and envenomed enmity against the Divine Glory, Satan, and his wicked angels, did solicitate the greatest part of all the world to break so far through all the ties of allegiance to the Sovereign Majesty of Heaven and Earth, as to transfer their homage, worship, and service from God to himself, and at best to the creature, by worshipping and serving the creature more than the Creator, who is God. Holy Writ does therefore inform us, that the Great God did separate to Himself a Church out of the wicked world; and, to secure the obedience of that part of mankind to Himself, He did not only hedge and mound it in by peculiar rites, and those the most opposite to Idolatrous and Dæmon worship, but, that He did at sundry times, and in divers manners, in times past, first speak unto it by His Prophets; and did at last speak unto it by His Son, whom He sent among us, the more effectually to destroy the dominion and power of Satan, and the works of the Devil, Idolatry, and Sin. And then, moreover, the Scriptures do inform us, that, in consequence to this, our state here on earth is a state of warfare; and a warfare too, not against flesh and blood only, but against principalities, against powers, against the rulers of the darkness of this world, against spiritual wickedness in High-places, that is, against the devils themselves, who did much affect, and were wont to be worshipped in the High-places. Thus it appears, from the tenour of the whole Scripture, that the design of Christianity was to dispossess Satan of his usurped dominion over mankind, which, before our Saviour's coming into the world, was almost universally enslaved to him, by idolatry, superstition, and filthy lusts."

I leave these just and pious remarks to the reflection of my reader, and proceed.—Those who may please to think with me, that the most ancient and

* *Bibliotheca Parochialis*, &c. Second Edition, 8vo. *London*, 1707. p. 68.

largest of the Pyramids were the original Temples raised to the Worship of the Deity, and afterwards devoted to the gods, will excuse me for introducing the quotation I have above made; especially when the great and irresistible fact is considered, that the darkness of the human mind in those idolaters became more dense in proportion to the multiplication of their idols and altars devoted to them, insomuch that they became adorers of the Devil himself, and, being abominable in their idolatries, filled the world with bloodshed and every species of crime and misery.

With respect to the time when the Egyptians began building Pyramids, we are utterly at a loss to know: not the least trace was to be found of any manner of writing or record in the interior of the Great Pyramid, when Mr. Greaves and his company examined it, with great labour and difficulty, by torches; nor any, the least remains of bodies found in it. Our English traveller, however, did find opportunity, for the honour of his country, to leave a memorial of his visit in the interior of that vast pile; and, in his own words, having made his researches in the chamber or hall in the middle of the Great Pyramid, judged it a convenient time and place to make a record of the measures of different nations, for the use of posterity, should future ages discover it; and in the margin of his book, *Pyramidographia*, p. 94, gives the quantity of the several *foot measures* as follows, compared with the English standard*.

The curious in these inquiries go to the Bible, to Josephus, and to the

* " The English foot	1000 parts.	The Braccio at Florence . . .	1913 parts.
The Paris foot	1068 ..	The Braccio at Naples . . .	2100 ..
The Spanish foot	920 ..	The Derab at Cairo	1824 ..
The Venetian foot	1062 ..	The Greater Turkish Pike . .	2200 ..
The Rhinland foot	1033 ..		

" *Mr. Auzout*, by examining the wideness of the Gate of the *Pantheon*, and the length of the " Brass of *Florence*, concludes that the *English* foot, *Mr. Greaves* made use of in measuring, was less " than the Standard, that is, contained only 1348 instead of 1351, which he affirms to be the true " proportion.

" *Mr. Cassini*, the father, is astonished at *Greaves* having found the base of the Greater Pyramid, " measured by triangles as he relates in his *Pyramidographia*, 693 *London* feet, that is, 650 *Paris* " feet; whereas all others agree to make it 680 or 682 *Paris* feet. From hence, says that author, " one may see what a difference there is in measures of the same magnitude, when taken by different " persons, and reduced to the same feet."—See " *Geography Reformed; or, A New System of General Geography, p.* 127. *Printed by E. Cave*, 1739."

Versions and Commentaries on both. In the Bible they indeed read, that after the death of Joseph, not more than 145 years before the Exodus, "There arose a new king in Egypt, who knew not Joseph." To which the more luminous expositors assign as a reason, a change of the government, and the commencement of a new dynasty; when the hitherto-favoured Hebrews were driven from all their former liberties and privileges, and compelled to undergo a life of slavery; working in brick and in mortar, and in all manner of servile work: "and they built for Pharaoh, treasure-cities, Pithom and Raamses." Here is no mention of Pyramids, nor of the materials by which the shadow of an argument can be maintained that the Israelites were employed upon these works: many of the most able writers are of this opinion, among which is Mr. Greaves *.

The next resource is Josephus: to him most Bible Students refer, in subjects connected with the Old Testament: I give his own words:—"When "time had obliterated the benefits of Joseph, and the kingdom of Egypt "had passed into another family, they inhumanely treated the Israelites, and "wore them down in various labours: for they ordered them to divert the "course of the river (Nile) into many ditches, and to build walls, and raise "mounds, by which to confine the inundations of the river (Nile); and more-"over vexed our nation in constructing FOOLISH PYRAMIDS, forced them to "learn various arts, and inured them to undergo great labours; and after "this manner did they, for 400 years, endure bondage; the Egyptians doing "that to destroy the Israelites by overmuch labour, whilst we ourselves "endeavoured to struggle against all our difficulties."

The next resource is to the Targums, and the Greek Version. The Chaldee Targums do not in the least support Josephus in any thing relating to Pyramids built by the Israelites when in Egypt, but only to high-walled cities: and the Greek Translators convey no more satisfaction on this point, than that to *Pithom* and *Raamses* they add the city called *On*.

The treasure-cities built for Pharaoh were *Pithom* and *Raamses*, and, by the exposition of the learned Buxtorf, were either "*urbes thesaurorum vel armamentariorum*"—depots for arms, war-stores, chariots, &c.; or store-cities

* This argument extends only to the stone Pyramids; but there are many others of other material, as of brick, of lesser magnitude and various forms; and on these the Israelites might have been employed, for aught we know; and their history supports that opinion.

for corn, which is the most probable, where the grain of all kinds was received in, and meted out, in the strictest and most economical manner, under the vigilance of proper officers of the Government; for this appears to be the meaning of the Hebrew original, עָרֵי מִסְכְּנוֹת i.e. *areè mischenoth,* scil. "Provision-cities." The word is applied in another form Deut. viii. 11. rendered *scarceness,* i.e. 'just enough, and nothing to spare,' 'nothing more than was meet:' "A land wherein thou shalt eat bread without scarceness;" where they should eat bread to the full; not meted and measured out unto them, as in Egypt, by stint and excision. The names of these cities in the Hebrew are רַעַמְסֵס and פִּתֹם *Pithom* and *Raamses:* the Chaldee Targum expounds them טָאנִיס וְיַת פִּילוּסִין *Tanis,* and *Pilusin,* Lat. *Pelusium;* from פָּלַס *Palas,* and פֶּלֶס *Peles, Statera, Bilanx, à Librando,* and פִּלֵּס *Pilles, Libravit, appendit,* i.e. to weigh or weigh out, as I have explained; and is, I presume, a fair explanation of them, as store-cities, and granaries. Hence it appears, that neither from the Bible history, nor from the Targums, can we find the Israelites to have been employed in building of Pyramids, as Josephus insinuates, at least those built of stone: not that we may altogether deny the probability of their labours in building those of brick, or some of them; since we read expressly of the making of brick, and of the Israelites being scattered all over the country to find straw: and even if this be admitted, in erecting these "foolish things," as Josephus calls them, then may we look upon them as monuments of their labours there, and of the truth of the history. And that the antiquity and manner of making bricks in the East, and the utility of the straw, may be better understood, I shall here insert, from an author just put into my hand, a long and valuable extract on the Temple or Tower of Nimrod; which will also serve as a supplement to the description given in page 8 above.

THE TOWER OF NIMROD, ACCORDING TO MARK GREGORY.†

ITS SITUATION.

"'Tis to be seen not far from the ruins of Babylon, originally Babel (the first and greatest of those towns which Moses says Nimrod built), in Chaldea, in the middle of

† An Account of the Sepulchres of the Ancients, and a Description of their Monuments from the Creation of the World to the Building of the Pyramids, &c. 8vo. *London,* 1712. pp. 28—41.

a large plain, between the Euphrates and Tigris; on the west side of the one, and the east of the other; twenty miles from the first, towards the north-east; twenty-five from the second, towards the west; and thirty above, where the two rivers join, towards the north-west; nine miles from the ruins of Babylon, upon the Euphrates, towards the east; twenty-seven from the town of Bagdad, upon the Tigris, towards the south-west; and twenty-nine from the Castle of Corn, upon the junction of those rivers towards the north-west.

"'Tis a Tower exactly square; that is, having four sides, and as many angles, or inclinations of the sides, equal, in form of an Obelisk or Pyramid; that is, a figure whose sides are equal, and oblique; or, in ascending from the base or bottom to the height or top, incline towards one another, so as to meet and end in a point, and whose angles or inclinations of the sides are acute or sharp, that is, less than 90 degrees, or the fourth part of the circumference of a circle; the root of the square, or the length of one of the sides, at the base, being 243 feet; which quadrupled, or multiplied by 4 (there being so many of them), makes the circumference, or way going round, 972 feet, or 1134 London feet; that is, 226 geometrical paces and four feet, or some more than the fifth part of an English mile: the height perpendicular, or straight, likewise 243 feet, equal to the root of the square; the height oblique or inclining, 271 feet and a half; the angle, or inclination of the sides at the base, 60 degrees, or the sixth part of the circumference of a circle; and the angle at the height, or at the top, 30 degrees, or the twelfth part of a circle: the whole being a mass or heap of brick and bitumen work, enclosing a hill or rock in its solidity or thickness, and amounting to 4,782,969 cube or solid feet, upon 59,049 square or broad, that is, 7,595,154 London cubic feet, upon 80,372 square, or 271,255 English tun and a half, upon some more than an acre and three quarters.

"The execution of the design is in this manner: it is divided into nine parts, which are, as it were, so many towers square, in form of parallelopipeds, or flat cubes; that is, figures whose sides are equal, perpendicular, or straight; and parallel to, or equidistant from one another; and whose angles of the sides are right, that is, just 90 degrees, or the fourth part of the circumference of a circle, raised obelisk-wise, or pyramidically, one above another; the root of the square in the one above diminishing from that in the other below by an equal number of feet, which is 27, so as to make a corridor or gallery, an estrade or walk, betwixt the two, upon the top of the one below, and along the sides of the other above, all around 13½ broad, the height of them all being equal to 27 feet; the same with the difference between the roots of the squares, and perpendicular, not oblique, and the angles of the sides right, that is, 90 degrees, or the fourth part of a circle; so that the first and lowest upon the plain is 243 feet square, and 27 high; the second, 216 feet square, and high as

before, the third, 189 feet square; the fourth, 162 feet; the fifth, 135; the sixth, 108; the seventh, 81; the eighth, 54; the last and highest, 27 feet square: and the height being the same, it is an exact cube, or figure having six sides, and eight angles, all equal; the whole being so many masses of brick and bitumen work, built of bricks of earth hardened by fire, each of which is nine inches square and three thick, pos'd, or laid beside and above one another, and bitumen, mixt with reeds or straw, to the thickness sometimes of nine lines or three quarters of an inch, and sometimes of thirty-six or three inches, and disposed each as follows. First, there is a bed of bitumen, mixt with reeds, to the thickness of three inches; then, a row of so many bricks as make up the square, pos'd aside one another, likewise three inches thick; next is another bed of bitumen, mixt with straw, to the thickness of three quarters of an inch; then a row of bricks as before; next, bitumen again, with straw as before; then another row of bricks: which bed of bitumen, with straw and row of bricks, are repeated alternately, or the one after the other, six times more, so as to make up, in all, from the base, the height of three feet: then the whole (that is, a bed of bitumen mixt with reeds, and a row of bricks as before, and bitumen with straw, and bricks alternately, so many times as above) is repeated consecutively, or immediately, eight times more, so as to make up in all, from the base, twenty-seven feet, which is just a ninth part of the perpendicular height of the tower. This is a description of the first and original design, with an account of its execution, manner, and disposition, as it was built by Nimrod; who dying before it was completed, the further execution of it was then given over, when the work was raised to the height of 162 feet, and just six-ninth parts of the whole were finished; so that it ended with a square flat of 108 feet. It continued so till the latter days of Ninus Belus, who, after having cut out the sepulchre at the bottom of the tower, continued the building of it upon a second and different design; the description of which is thus:—'Tis a Tower exactly round, in form of a cone, or round pyramid; the diameter, or thickness at the base, being 81 feet; the circumference, or way round, 254½ feet; the height perpendicular likewise 81 feet, equal to the diameter; the height likewise, oblique, 90½ feet; and the angles of the sides equal to those of the former design: the whole likewise a mass of brick and bitumen work, amounting to 140,589 cubic feet, upon 5207 square. The execution of this design is as follows:—'Tis divided into three parts, which are so many round towers or cylinders, and flat, raised pyramidically, one above another; the diameter of the one above diminishing from that of the other below by 27 feet, so as to make a corridor, or estrade, betwixt the two, all around, 13½ feet broad; the height of them all being likewise 27 feet; the same, with the difference between the diameters and perpendicular, and the angles of the sides, as those of the former: so that the first and lowest, upon the square flat of 108 feet, as above, is 81 feet diameter and 27 high; the second, 54 feet diameter, and high as before; the last and highest 27 feet diameter;

and the height being the same, 'tis a cylinder, or round tower cube; having an entry door on the side of Babylon, 9 feet square, and 13½ feet long, and an overture or opening, or as it were a window, at the top round, 9 feet diameter; the floor, both of the temple and entry, being plain, the sides perpendicular, and the roof arched, the arching practised in the uppermost third part of the height; the whole of brick and bitumen, as before."

This interesting traveller continues his description, and closes with a remark on the incomplete state of the work; which accords so much with the original history, that it is necessary, in justice to his remarks, to quote the passage, Gen. xi. 8: "And they left off to build the city." But the Greek Version adds, "And they left off to build the city and the tower." The author of the Description of the Tower of Nimrod, pag. 40, observes, that "It wanted the "ninth story for its completion; and terminated with a round flat of fifty-four "feet diameter; having an overture or hole of nine feet, being the window "of the temple, as above, in the middle: and it continues so to this day." He further adds, "That it is a question among architects or builders who "understand antiquities and history, whether it was designed so by Ninus the "builder, or happened so by the chance of the tower being left incomplete; "and wanting the last ninth part, which, according to the first and original "design of the edifice, was to terminate or end it; and if so, would have "stopped, or covered that overture;—which question is hard to answer."

Josephus appears to have committed himself in a gross error, when he asserts the bondage of the Israelites to have been prolonged to 400 years; whereas it is demonstrably proved, that from the death of Joseph to the Exodus, or departure out of Egypt, there elapsed not more than 145 years, or 150 years at most: and also it is to be noticed, that this bondage, or slavery of the Israelites, did not commence until long after the death of Joseph, or of the generation which followed him. The same allowance must be made in the interpretation of Gen. xv. 13: "And he said unto Abram, Know of a surety, "that thy seed shall be a stranger, in a land that is not theirs; and shall serve "them; and they shall afflict them four hundred years." These *four hundred years* are to be understood of the years of sojourning, and not of the years of slavery; as may be inferred from the 12th chap. of Exodus, ver. 40, during all which time they dwelled not in their own land, but were strangers, and sojourners in other countries.

From the Flood to the Exodus there was a long period, for the accomplishment of these transactions, and the building of cities, and of pyramids of every description. If we may credit the Septuagint account, there elapsed no less than 1500 years; but by my reformed chronology of the Old Testament, not more than 1200 years; during which time the state of the Arts had so far arrived to maturity, that they could devise to make unto themselves gods of silver and gold, and to cast a golden calf. Masonry was so far advanced, that Moses forbad the Israelites to build high altars; and expressly forbad them to build them of *hewen stone;* an evident proof of these arts being known in Egypt at that period *.

Having submitted these remarks to my intelligent reader, I shall now immediately return to the Pyramids, and renew the scene which there presents itself, in the further curious descriptions we have of them; and shall, moreover, shew that their Great Pyramid was designed on geometrical principles, and raised on the rule of the right-angled triangle.

FURTHER CONSIDERATIONS PROPOSED.

In all works of magnitude, cost, and labour, men have some design; work upon some plan; fix their measures, numbers, and proportions, according to that plan, as in buildings of all descriptions; that is to say, they do not work at random, but have their reasons for what they do, and the work that is done: and whether we know, or know not, at this vast distance of time, we may presume that the Egyptians built their Great Pyramid in the form and manner they did, and after such proportions and measures as they saw good.

Now, on a close investigation, it is found that the measures of the Great Pyramid at the base do so approximate to the measures of the Ark of Noah in ancient cubit measure, that I cannot scruple, however novel the idea, to draw a comparison. The form of the Ark was quadrangular; and consisted of four equal sides or parallelograms, of which the measures of one is given in three

* גָּזִית מְגֹרָרוֹת בַּמְּגֵרָה "Hewed stones, sawed with saws," 1 Kings, vii. 9.; and in the plural, אַבְנֵי גָזִית "hewed stones," chap. v. 17. גָזִית *Gazith*, "hewn stone," Exod. xx. 25. signifies such "wrought stone."

numbers, 300, 50, and 30 cubits: Gen. vi. The cubit over and above, ver. 16, I take to signify the outside measure, being the thickness of the sides. The drawings and descriptions given of this building are all erroneous: the painter and the commentator are equally misled, in supposing the Ark to have been in form of a long chest: the coffin of Joseph is called an *ark;* and the sacred chest of the Law is called an *ark;* and the money-chest of the Temple is called an *ark*, in Hebrew אָרוֹן *aron:* but the Ark of Noah is called, in the Hebrew, תֵּבָה *Tebah;* and such a vessel, or square basket, was Moses saved in (Ex. ii. 3).

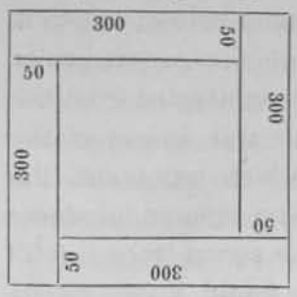
The Greek Translators do not seem to have known the distinction between תֵּבָה *tebah* and אָרוֹן *aron;* for they read κιβωτὸς in both places; and understood the directions given to speak of *square beams,* not of the whole body of it, which was no other than tetragonal or four-sided, as I have explained.

The idea that the Ark was constructed for sailing is equally groundless: it was indeed made for floating; and it moved or floated *upon the face of the waters*—so to speak in the Bible language, and as the Hebrew word signifies, "*to float about*"—hither and thither, as the waters carried it. And, moreover, a four-sided vessel, equally long and broad, was the best and safest that could be designed for the preservation of the persons and creatures contained in it. Bishop Wilkins, and other mathematicians who have published their speculations on this subject, concluded the content of the Ark, according to its prescribed measures, equally sufficient for all its cargo and stores: but all this falls vastly short of the truth, it having a capacity four times greater than their estimate, and much more by the measure of the ancient cubit.

As concerning the measures we are now upon, they must be reduced to the *cubit* of the Ancients. The learned compiler of the Tables of Weights and Measures in the Appendix to the English Bible determines the Hebrew *cubit* at twenty-one inches of our measure, which is the shorter or common cubit; but the builder's cubit was one hand-breadth longer, or about twenty-five inches of ours. Now, according to the description of the Ark as above given, these are its measures, in English feet, for one side:

Length in cubits	300	=	625 Eng. feet.
Breadth, ditto	50	=	104
Height, ditto	30	=	62

The ground-plan gives the four sides in the following manner:



Thus the four sides include four rectangular parts of one dimension in length and breadth; and the whole equal a square of 350 cubits inside measure, and four more for the outside; making, in all, 354 cubits, or about 737½ English feet. Compare this with the measure of the Great Pyramid.

" In the Miscellaneous Observations upon Authors, " Ancient and Modern*, vol. I. there are inserted some " observations on the dimensions of the greatest Egyptian Pyramid; the author " of which tells us, that upon reading the accounts of the measure of the " Great Egyptian Pyramid, as related in the Universal History (pp.186—192), " and remarking the great difference between the authors there mentioned, " and especially concerning the perpendicular height in proportion to the " base, he was desirous to see how these accounts would severally come out, " upon a true mathematical calculation; supposing the base to be a perfect " square, upon which are placed four equilateral triangles, as is generally " allowed by authors; and to shew, if possible, how the differences of the " ancient authors from one another might probably happen; and at the same " time, to offer a conjecture, in order to reconcile the dimensions given of this " Pyramid by Mr. Greaves and M. Chazelles. As to the proportion which the " perpendicular height bears to the base, Mr. Greaves tells us that the altitude, " if measured by its perpendicular, is 481 feet; but if taken as the Pyramid " ascends, inclining, then it is equal, in respect of the lines subtending the " several angles, to the latitude of the base.

" Now, to prove whether this height (481 feet) be justly calculated, accord- " ing to the foregoing supposition, the following rule must be observed; viz. " the perpendicular height of any equilateral Pyramid will be equal to the " square root of half the square number of one of its sides. Mr. Greaves " says, that the base of this Pyramid is 693 feet; which being squared, makes " 480,249 feet; the half of which sum is 240,124.5 feet; whose square root " being extracted, is 490 feet, which is the true perpendicular height, supposing

* *Miscellaneous Observations*, &c. pag. 119, et seq. *London*, 1731. 8vo.; quoted by Dr. Birch in his Life of Mr. John Greaves, pag. 18.—See Miscellaneous Works of Mr. John Greaves, Professor of Astronomy in the University of Oxford. 2 vols. 8vo. Published by Thomas Birch. *London*, 1737

" it to end in a point. But, as Mr. Greaves rightly observes, it does not end " in a point, but only seems to do so, to those that stand below; which is " owing to its great distance from the eye. Therefore the perpendicular " height of the upper triangle, which is wanting, must be subtracted from the " height already found, and the remainder will be the true height of the " Pyramid. Now Mr. Greaves says, the flat stone, which terminates the " Pyramid, is about 13.28 feet square; which number being squared, produces " 176.3584 feet, the half of which is 88.1792 feet, whose square root is 9.39 " feet; which subtracted from 490, the height already found, leaves 480.61 " feet for the true height of the Pyramid: which shews that Mr. Greaves's " height is exactly calculated in proportion to the base*.

" Thevenot says the base is 682 feet, and its height 520 feet; but as these " dimensions are given us in French measure, they must be reduced to English, " that they may be more easily compared with Mr. Greaves's. So then the " base, according to Thevenot, will be 728 feet, and the height 555 feet; " whereas it ought not to be more than 514.74 feet, upon the foregoing sup- " position, and ending in a point, which is about 40 feet more than the true " height in proportion to the base.

" Gyllius's height, computed from his number and height of steps, is cer- " tainly a great deal too much, being no less than 937.5 feet, which is consi- " derably more than the base; for he supposes 250 steps in all, of equal height, " of about three feet nine inches each; but it is much more probable that " they are not all of equal height, but rather diminish as the Pyramid.

" Le Bruyn makes his base 128 fathoms, or about 704 feet, and its height " 112 fathoms or 616 feet, which should not be above 498 feet; so that his " height is too much by 118 feet, in proportion to his base, upon the foregoing " supposition; except he means the perpendicular height of the triangle, and " then it is not above 11 feet too high. This base of 704 feet exactly agrees " with the number quoted from M. Chazelles by Rollin, in his History of the " Egyptians, but does not suit with the dimensions quoted from the same " author (Chazelles), in the Memoirs of the French Academy, for the years " 1702 and 1708; for they make it 682 French feet, which corresponds to " 728 English feet; and the height of 77.3 toises, or 498 English feet, as

* Miscellaneous Works of Mr. John Greaves. Published by Thomas Birch, 2 vols. *London.* 8vo. 1737.

" Rollin quotes it, is the true height upon Rollin's base of 704 feet; but by " Chazelles' base of 728 feet, as quoted by the Memoirs of the French " Academy, it ought to be 514.77 feet high to the point. The Arabic writers " say, that the base is 460 cubits, and the height 317 cubits; which is but " 8 cubits less than the true height, in proportion to the base.

" Now, by comparing the measures of the aforesaid authors together, we " may easily observe which of them seems to have taken the most care " in measuring the Pyramid, and whose perpendicular height approaches the " nearest in proportion to their bases. For instance, Mr. Greaves's perpen- " dicular is exactly in proportion to his base, and so is that of Chazelles." The learned author proceeds to shew, that the difference subsisting between Mr. Greaves's number and M. Chazelles is 35 feet at the base; and which difference, in a length of 728 feet, would scarce be perceptible, if it were laid down upon paper, though viewed upon a plane.—" Besides," continues the author, " Chazelles' measures are confirmed by several other authors: as Gmelli, who " made a voyage round the world in 1693, gives us the measures of this " Pyramid as he received them from Fulgentius of Tours, a Capuchin mathe- " matician, who found the breadth of the base of this Pyramid 682 French feet; " which answers to 728 English feet, exactly the same as Thevenot found it, " in his Voyage to the Levant. These measures also agree with M. Jeaugeon, " received from M. de Nointel, the French ambassador to the Porte, which he " communicated to the French Academy. All these authors agreeing in the " same measure, one cannot account for Greaves's dimensions, except from the " reason mentioned above, of the sides being something different in length*."

Thus far these extracts shew what different measurements have been made of the very same Pyramid, not altogether from want of careful and diligent observation, but, in the most, from the want of proper instruments, and the difficulty of using them with accuracy; and this may be an apology in favour of the several authors, among whom Mr. Greaves may be considered. Dr. Shaw observes, that none of the sides of the Pyramid are exactly upon a level, so that it is difficult to find a true horizontal base; besides, it is impossible to say how much the drifts of sand, to which it is exposed, may have been accumulated above the foundation of it; and, therefore, all calculations depending upon the time and circumstances when they were made, must be precarious.

* See the Life of Mr. John Greaves, by Dr. Thomas Birch, vol. I. pp. 18—25.

The modern state of the building, about its base, presents the obstruction of rubbish, fallen stones, and sand, shewed in the View, Plate II.

Sir Isaac Newton, in "*A Dissertation upon the Sacred Cubit of the Jews, "and the Cubits of the several Nations; in which, from the Dimensions of the "greatest Egyptian Pyramid, as taken by Mr. John Greaves, the ancient Cubit "of Memphis is determined: translated from the Latin, and published with "Mr. Greaves's Works:*" Vol. II. pp. 405—433. calculates the ancient cubit of Memphis at $1\frac{789}{1000}$ of the English, and the modern at $1\frac{824}{1000}$ of the English foot, p. 418; and infers that the sacred cubit of Moses was equal to 25 *unciæ* of the Roman foot, and $\frac{6}{10}$ of an *uncia*, or, what is equivalent, that it had the same proportion to two Roman feet as 16 to 15.

"*Mersennus*," says this great man, in his Treatise *de Mensuris*, Prop. 1. Cor. 4, "writes thus:—*I find that the cubit (upon which a learned* Jewish *Writer, which "I received by the favour of the illustrious Hugenius, Knight of the Order of St. "Michael, supposes the dimensions of the Temple were formed) answers to* $23\frac{1}{4}$ "*of our inches; so that it wants* $\frac{3}{4}$ *of an inch of two of our feet, and contains two "Roman feet and two digits, and a grain, which is* $\frac{1}{4}$ *of a digit.*—The Paris foot, "with which *Mersennus* compared this cubit, is equal to $1\frac{68}{1000}$ of the English "foot, according to Mr. Greaves; and consequently is to the Roman foot as "1068 to 967. In the same proportion, reciprocally, are $23\frac{1}{4}$ and $25\frac{68}{100}$. That "cubit therefore is equal to $25\frac{68}{100}$ *unciæ* of the Roman foot, and consequently "falls within the middle of the limits $25\frac{57}{100}$ and $\frac{79}{100}$, with which we have just "circumscribed the sacred cubit; so that I suspect this cubit was taken from "some authentic model, preserved in a secret manner from the knowledge of "the Christians."

The cubit of Mersennus, upon which Sir Isaac Newton has calculated, I presume to be the larger cubit, and the same called "the great cubit" in Ezekiel, chap. xl. ver. 5. and xli. ver. 8. "The cubit is a cubit and a hand-breadth," xliii. ver. 13. and six of these cubits was the length of the reed: so that the cubit of Mersennus being reduced a hand-breadth, we obtain the measure of the lesser or common cubit, equal to $19\frac{1}{4}$ inches, allowing 4 inches for the hand-breadth, or perhaps $3\frac{3}{4}$; and then it will be $19\frac{1}{2}$ inches.

Dr. Cumberland computes the Jewish cubit at 21,888 inches, and the hand-breadth 3.684; which measures being added, give the larger cubit at 25.572 inches. Now I have assumed the larger or builder's cubit at 25 inches

in the measures of the Ark, in (p. 22) above; and hope to be excused for assigning that measure, as having computed on Dr. Cumberland's principles; on which I shall now compute the Hebrew measures of length according to the common and larger cubit.

	Inch. Dec.
The lesser or common cubit	21.888
The longer or great cubit	25.572
A span, the longer	10.944
A span, the less	7.296
A hand's-breadth	3.684
A finger's-breadth	0.912
	Feet. Dec.
A fathom, equal to 4 cubits	7.296
A reed, equal to 6 cubits	10.944
Ezekiel's reed of six great cubits	11.952

Compare this statement with Dr. Cumberland's Essay*, or with the Appendix published in the Bible Index: the result is, that the common cubit as computed by Dr. Cumberland is greater than that of Mersennus, and consequently the larger measures in proportion.

If the measure taken from Mersennus of the sacred cubit be correct, and that cubit be the larger cubit, as I have inferred, the hand-breadth being subtracted gives the common cubit at 19 inches and $\frac{3}{8}$ of an inch of our measure; for $3\frac{7}{8}$ inches subtracted from $23\frac{1}{4}$ inches leaves that quantity for the common cubit, viz. 19 inches and $\frac{3}{8}$, which is less than Dr. Cumberland's estimate.

Dr. Cumberland makes the Jewish fathom equal to four cubits, or 7 feet 296 parts, and the reed 10 feet 944 parts; but if we adjust these measures by Mersennus, and take $19\frac{3}{8}$ inches for the common cubit, the fathom will turn out much nearer the truth, viz. $77\frac{1}{2}$ inches or 6 feet $5\frac{1}{2}$ inches, and the reed of six great cubits equal to 11 feet $7\frac{1}{2}$ inches. This learned author having adjusted his calculations on the basis of *Egyptian* measures, particularly the *Schœnus* and the *Aroura*, I shall, in this investigation, take the liberty to propose for consideration the measures of the Holy Land, as stated in the book of Ezekiel, chap. xlviii. The whole extent of land from North to South being about 180 English miles, is divided into thirteen portions, and altogether making 145,000 measures or fathoms. Now, by calculating the

* See "Essay towards the Recovery of the Jewish Measures and Weights, &c. By R. Cumberland, D.D. Lord Bishop of Peterborough. 2d ed. 12mo. *London*, 1669." chap. 2. p. 12.

English feet in one mile, viz. 5280, and the whole for 180 miles, we shall find these 145,000 measures, or fathoms, to give the measure of the Hebrew fathom, or *Middah*, to be $6\frac{1}{2}$ feet, or very nearly: divide this measure by 4, and we obtain, at this rude estimate, the measure of the common cubit at $19\frac{1}{2}$ inches, which I must presume to come nearer to the truth than that stated by Dr. Cumberland from the Egyptian measures.

Whoever considers the disparity of measurements of the same Pyramid cannot wonder at the various and dissentient measures given of the Jewish cubit, on which so much depends in the exposition of Holy Scripture.

Mr. Dalton, who took Views in Egypt in the year 1749, which he published in folio in 1751 and in 1781, gives an accurate drawing of the Great Pyramid, on a scale of $\frac{1}{4}$ inch to 30 feet, which he made on the spot in presence of several competent and distinguished persons. This drawing is accompanied by numerical measures, in English yards: he found the length of the base equal to 257 yards, or 771 feet; and computed the height at 455 feet, which in his Remarks on those Views and Prints, published in 8vo. in 1790, p. 57, he reduces to 443 feet; so that his first number gives the geometrical measure to the point at the top: but as the top is a flat surface, the difference of these numbers allows for the cone being wanting about 11 feet. This gentleman excelled the former mathematicians in the exactness of his survey; as the recent French mathematicians have proved in their surveys in Egypt, in the *Description de l'Egypte* published by the French Government, where the dimensions of this Pyramid are given in metres and parts*:

	Metr.
Length of the Base . . .	227.25
Height	139.117

which measures, reduced to the English foot, are as follow, nearly:

	Feet
Length of the base†.	752
Height	460

Mr. Carne reports, in his Letters, p. 102, ‡ that the height of the Great Pyramid is 500 feet; its base, above 700 feet in length at each square; making

* Antique Descript. Vol. II. Ch. 18. Sec. 3. p. 63. Fol. *Par.* 1818.

† Dr. Young reduces the French Metre to English measure in inches and parts; equal to 39.37100, or 1 yard $1\frac{1}{2}$ nail, or 3 feet $3\frac{3}{4}$ inches.

‡ See "Letters from the East, by John Carne, Esq. of Queen's College, Cambridge," 8vo. *Lond.* 1826.

a circumference of about 3000 feet, and its summit 28 feet square. But 3000 feet for the four sides, give 750 feet for the length of the base; which is very near the truth. The building must have been carried upward by the triangle, and worked from the corner-stone, according to art; the interior chambers and galleries being formed, we may conjecture, as it advanced, when it received the body of the founder of Egypt, or some one of their ancient Kings, as a sacred place and mausoleum.

A Gentleman, to whom I have the honour to be known, having taken Drawings from the summit of the Pyramid, has been pleased to furnish the accompanying Views; which afford an additional description of the site and position of this famous edifice. Their accuracy may be depended on.

To conclude:—I have not the least doubt but the Ancient Egyptians measured by the cubit, whatever it then was; that the number of cubits was designedly fixed upon by them in laying the base of the Pyramid; and that if we divide the ascertained sum of 752 feet by 2, the quotient will be 376, which is a number exceeding 365 by 11: consequently, if we estimate their ancient cubit at 2 feet $\frac{1}{10}$ of an inch, that measure will be ascertained, and found to approximate nearly to the longer Hebrew cubit; and so will the measures of the Pyramid be found to agree with the number of days in the Solar year. Moreover, admitting my exposition of the Ark of Noah to be correct, then will its measures of length and breadth be found to correspond in cubits with the number of days in the Lunar year, viz. 354: and both will be grounded on sacred and astronomical numbers.

PLATE I.

VIEW FROM THE TOP OF THE PYRAMID OF GHEEZA.

TAKEN AT DAY-BREAK.

The East Side.

A. B. The apparent base line.

1. Elevation formed from stones that have fallen down, and sand.

2, 3. Two ditches, apparently parallel to the base line.

4. A ditch apparently rectangular, but not perpendicular to the base.

5, 6, 7. Three small Pyramids: 5. being very much destroyed; and 7, the most perfect.

8, 9, 10. The boundary line of the elevated rock upon which the buildings stand. It appears to have been in some parts levelled by art; and is covered with many ruins, apparently all or most of them tombs; and most of them in parallel columns.

11, 12, 13. A road from the Pyramid to the cultivated land, and which is built and forms a mole or wall from the point of intersection with the line Nos. 8, 9, 10.

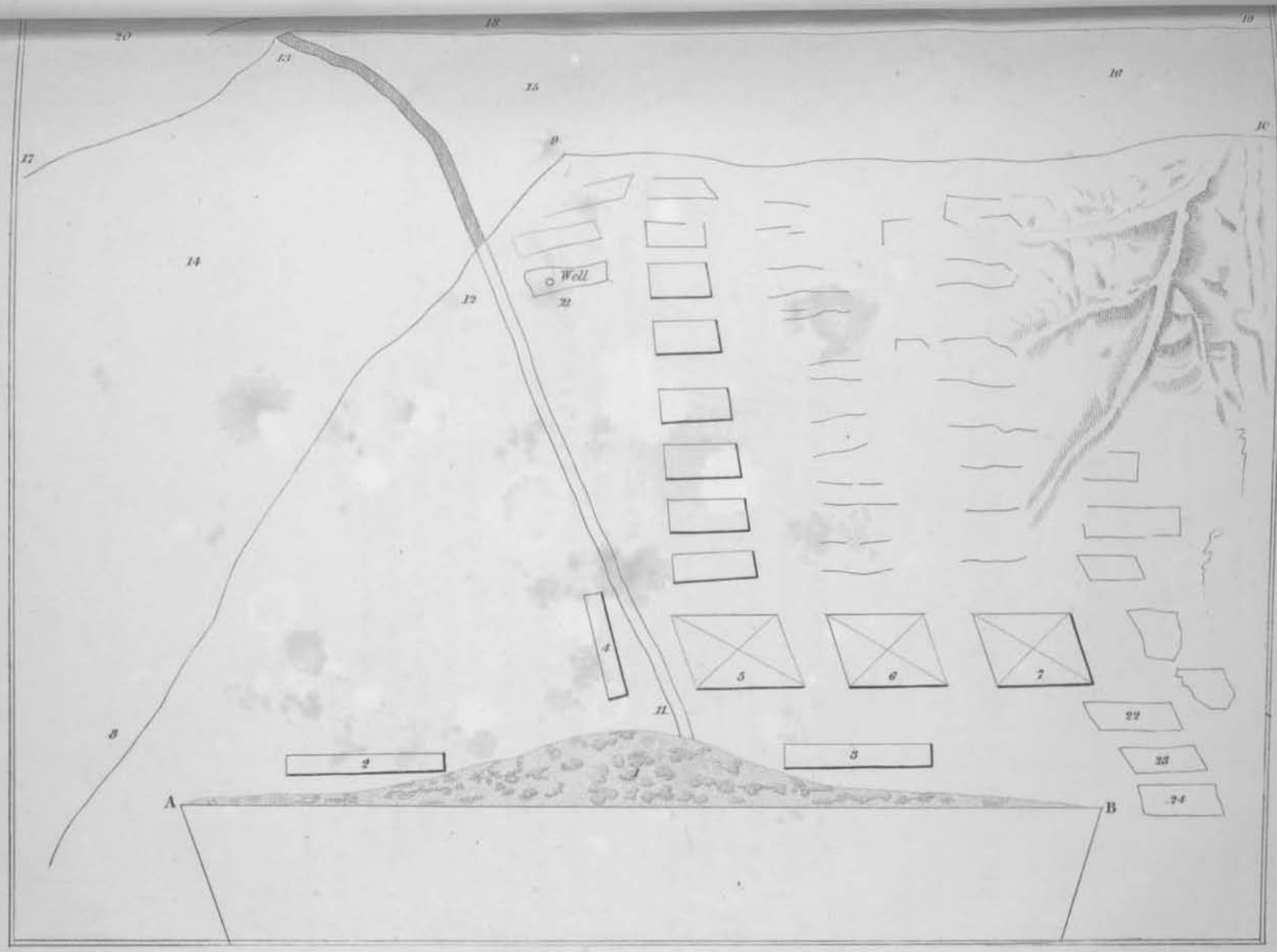
14, 15, 16. A part of the Desert, but on a lower level than that contained within the line 8, 9, 10.

17, 18, 19. The boundary line between the sandy Desert and the cultivated land.

20. The cultivated land. At the time of high water in the Nile, probably boats came by water to the end of the Mole No. 13, and the materials brought from Upper Egypt for making the chambers &c. &c. were landed there. The point No. 10, as seen from the top, was in one with the angle B of the Pyramid; although, from the incorrectness of the drawing, it is not represented to be so.

21. A well or hole made in the building.

22, 23, 24. Tombs at the angle, but rather on the other side.



View from the top of the Pyramid of Gheeza, taken at Day-break, the East side.

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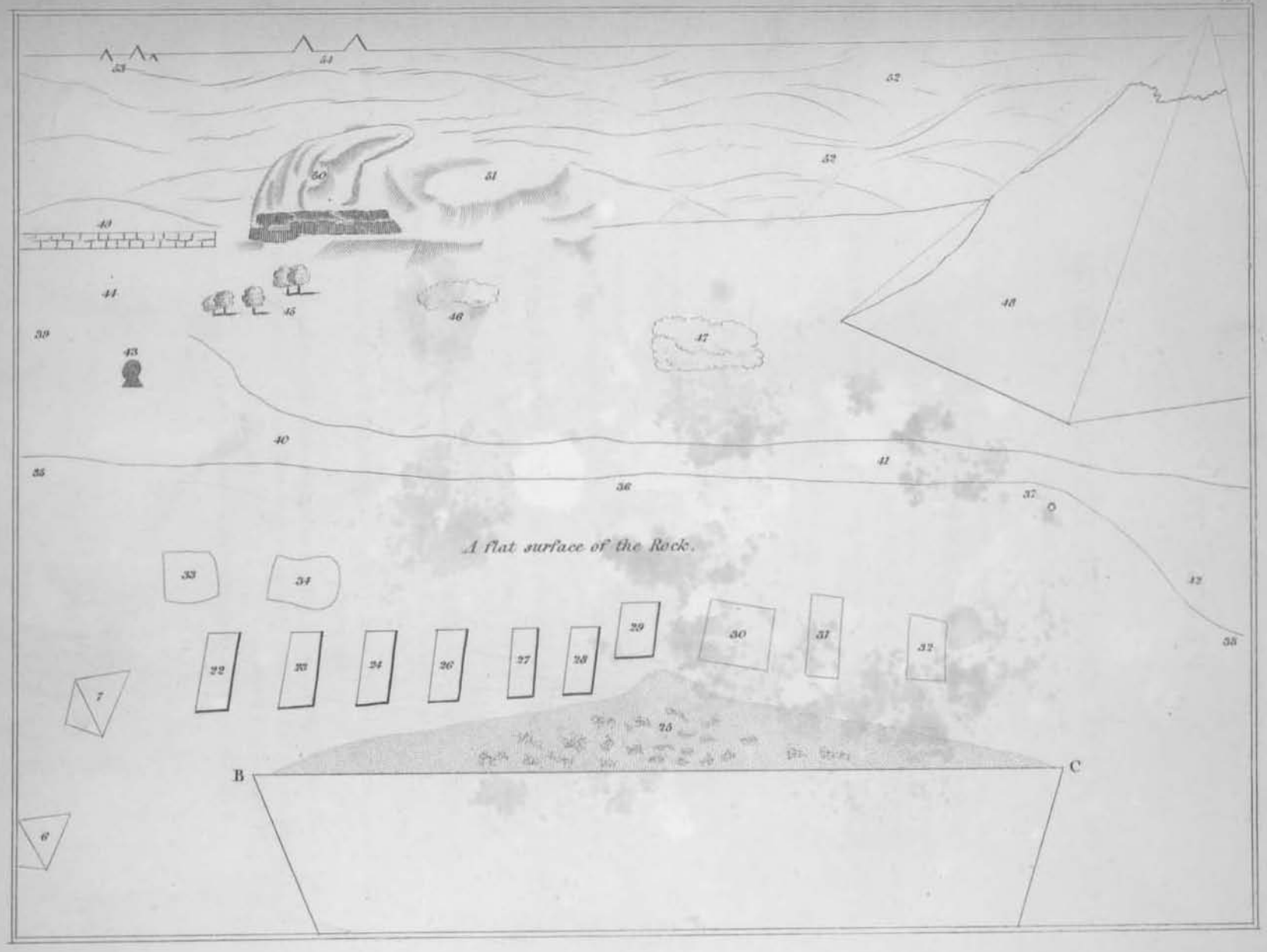


View from the top of the Pyramid of Gheeza, taken at Day-break, the South side.

PLATE II.

VIEW FROM THE TOP OF THE PYRAMID AT GHEEZA.

TAKEN AT DAY-BREAK.

The South Side.

25. Rubbish which has fallen from the top of the Pyramid, and sand.

6, 7. See the former View.

22, 23, 24. Tombs, represented in the former View; and,

26, 27, 28. A continuation of the series in the same row, apparently parallel to each other.

29. Is out of the row: also,

30, 31, 32. And they are not so complete, or more damaged.

33, 34. Ruins, probably of tombs.

35, 36, 37, 38. The boundary of the elevated plain, and which is a continuation of the line 8, 9, 10 of the former View. The point 35 is very near to No. 10; and if this drawing had been correctly done, and the line at No. 35 was continued a little, the point No. 35 ought to be the same as No. 10.

39, 40, 41, 42. A hollow or lower part of the rock, from whence stone may have been cut for building the Pyramids, Tombs, &c. This space slopes gradually towards the Sphinx, and beyond it.

43. The Sphinx. It has been formed by cutting away the sand-stone around it.

44. Lowering ground. 45. Five trees. 46. A mass of ruins. 47. A mass of ruins, perhaps a temple.

48. The second Pyramid. The ground from 48, in the direction of 47, 46, 45, towards No. 45, gradually declines; but between 48, 47, and 46, it is higher than between 40, 41, and 42.

49. A large and long straight mole, running east, apparently from the cultivable land of the Valley of the Nile, towards

50. A rude and indigested mass of ruins, of an irregular form in appearance. 51. High ground. 52. The Desert, as far as the sight can go. 53. Pyramids of Abousir. 54. Pyramids of Saccara.

N. B. The top of No. 48 shewed itself above the horizon.

PLATE III.

VIEW FROM THE TOP OF THE PYRAMID AT GHEEZA,

AT SUN-RISE.

The West Side.

55. Broken stones, and sand.

56, 57, 58, 59, 60, 61. Ruins of a larger size than those on the other sides of the Pyramids, and probably Tombs.

62, 63. Tombs in regular parallel columns.

64. Tombs out of order.

65, 66. A wall of the natural rock, formed by cutting away the surface on each side probably. It is of small height.

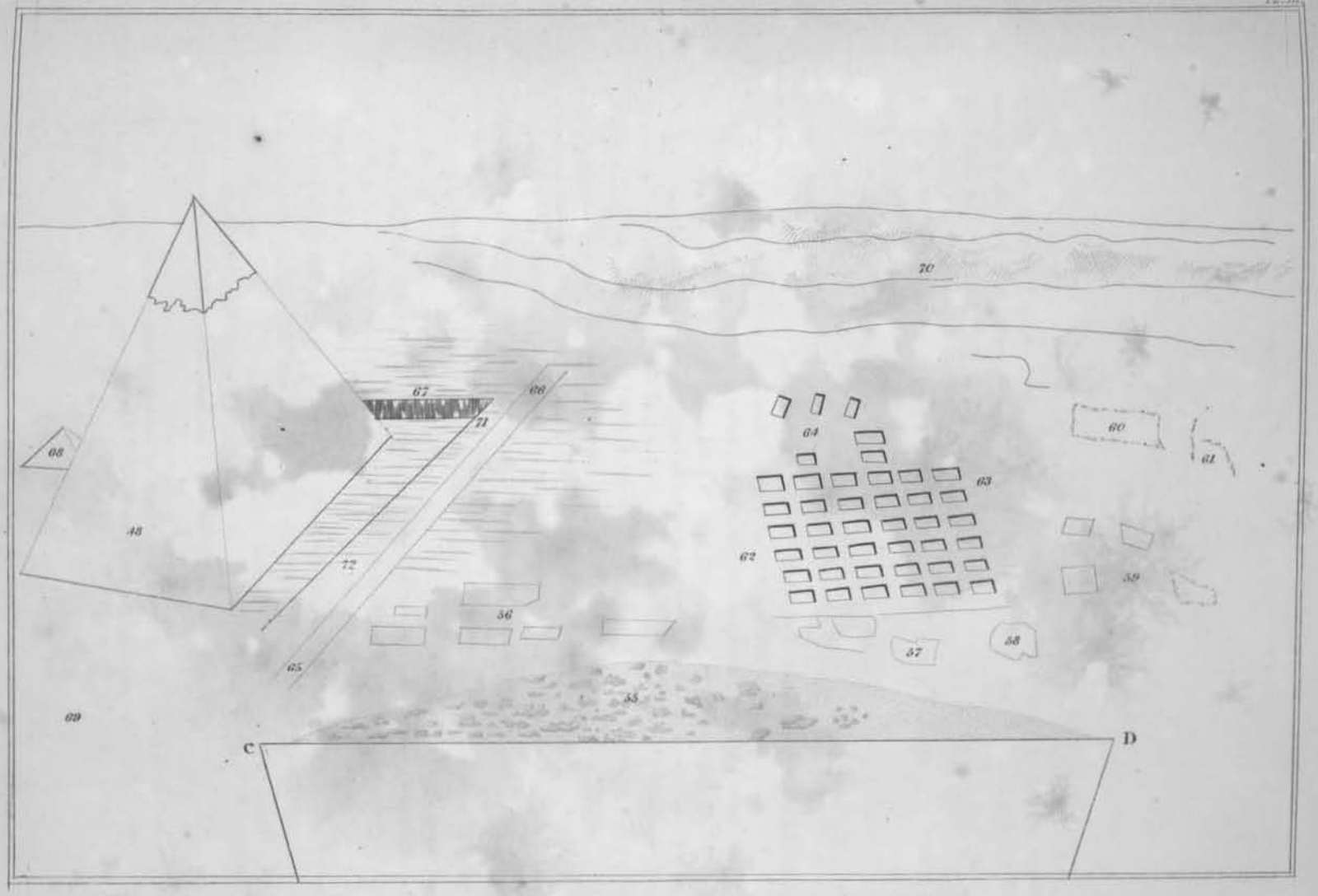
67. Excavation in the natural rock on the west side of the second Pyramid; and made, no doubt, in order to have the foundation of the Pyramid level.

68. The third Pyramid.

67, 69. The ground slopes from 67 to 69.

70. Hilly undulating ground. An horizon of desert.

71, 72. Sloping ground.



View from the top of the Pyramid of Gheeza, at Sun rise, the West side.

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NOTES.

Page 1. Remarks on the Bible Chronology.]—This Chronology is re-calculated on the ancient numbers, and produces a happy mean between the Vulgar Hebrew computation and the Greek; and in 2289 years from the Creation of the World, reckoned to the 70th year of Terah, differs from the Samaritan only in 49 years.

Pages 2, 4.—This Seventh Proposition considers the Pyramids as altars and temples, dedicated to the Sun or Solar Fire, as the emblem of the Deity, to which so many temples and cities in Egypt were devoted.

Page 12.—Among the pyramidical temples of the East, the Great Temple of *Gaudoma*, in Pegu, may be mentioned; and of which Mr. Symes, in his account of the "Embassy to Ava," gives a minute description, with its ground-plan and elevation. This is represented as situated in the centre of a large square of 1391 feet: the base of the pagoda is octagonal, each side measuring 162 feet, from which it terminates with a lofty spire at top. The whole is of brick.

Page 22.—In my exposition given of the Ark, I have understood its original form to have been four-square, consisting of four equal sides of three dimensions, given in length and breadth and height; that the length of the one side, added to the breadth of the other, equal 350 cubits inside measure; and to these adding the thickness of one cubit for each of the sides within and without, the whole will be found equal to 354 cubits, Hebrew measure; for so I understand the original to mean, which says, ואל־אמה תכלנה מלמעלה "And unto a cubit shalt thou finish it above," or, over above, as the word מלמעלה *milmahlah* means, "over and above;" so that the Ark should have its measures clear withinside, not regarding the thickness of its sides without. I am aware that some authors refer this to the window of the Ark, as a given dimension; and if so, I should explain it of the coving over it, projecting a cubit outwards, to throw off the rain; and this is very probable. Others explain it of the roof, or elevation at top; but an elevation of one cubit in fifty is too trifling to be admissible. I have, however, assigned this cubit to mean the thickness of the sides of the Ark, and also of the projection of its roof and covings. The Lexiconsdo not shew us the difference between תבה *tebah*, the Ark of Noah, and ארון *aron*, the Ark of the Covenant, or any other chest or coffer; and therefore I beg to submit to the learned reader, as an apology, that I find in the name of the Ark of Noah, the meaning of a *house*, or, as it is written in the Chaldee, תיבותא *tebutha;* and in some Hebrew MSS. תיבה *tibah* and תיבת *tibath**; so it has the letters of בַּיִת *baith*, and בֵּית *beth*, "a house," also ביתן *bithan*, "a large house," or "palace," Esth. vii. 7. such as are the houses of the nobility of some countries of the East, described by Dr. Shaw in his Travels, who has also given a curious and exact ground-plan of them, being built four-square,

* Dr. Kennicott notes several such, where the word is written with a *jod*: see No. Codd. 5, 6, 17, 18, 69, 80, 125, 152, 193, 601. The great countries of Tibet and Bootan memorialise the Ark in their very names. *See* Appendix.

with an open square court within; exactly on the same principle as I have exhibited in the ground-plan of the Ark, with the common dimensions of the sides, p. 23.

The Greek Translators, not having any word equivalent with the Hebrew, have rendered it κιβωτὸς, and transferred the form of the Ark to that of the wood of which it was made:—Ποίησον οὖν σεαυτὸν κιβωτὸν ἐκ ξύλων τετραγώνων, "Make thee an ark of four-square wood, &c." Here, we observe, the species of the wood is left out, and its form expressed by the adjective "four-square;" whereas, I presume, the adjective did originally refer, not to the wood, but to the form of the ark itself: "Make thee an ark of wood, four-square, &c.;"—and this gives the passage a distinguishing sense, worthy the majesty of the speaker, and the wisdom of the patriarch, who needed not to be told to make the building of square timber, nor afterward to caulk it, and pitch it within and without with pitch, to make it proof and water-tight; for certainly his own good sense would have taught him so to do: and therefore I submit a more important sense to this part of the instruction given to Noah, viz. that he should cover it within and without with cypress, or some such species of wood, fit for planks to cover this great building in a most finished and complete manner.

The Chaldee Version reads nearly with the Hebrew, as near as the words כפר *copher*, and כופרא *cuphera*, which the paraphrast has expounded *pix*, "pitch;" as in the place of Exod. ii. 3: "And when she could no longer hide him, she took for him an ark of bulrushes, and daubed it with slime and with pitch." Now, the word rendered *pitch* in this place is not כפר *copher*, but זפת *zepheth*, "pix," as in Isaiah xxxiv. 9: "And the land thereof shall become burning pitch." A very learned author, *Joh. Forsterus*, Professor of Divinity and of the Hebrew Tongue at Witteburgh, and who compiled a Hebrew Lexicon, perhaps the best now extant, printed in folio, 1557, expounds the word כפר, as others have done before and after him, "*Primò, significat picem, bitumen, materia scilicet glutinosa, qua aliquid oblinitur tegiturque.*" Gen. vi.: "*Et oblinas eam bitumine.*" But in the sixth place, he gives the same word another sense: "*Sexto, est nomen arboris ferentis botrum: et Latinis Cyperus dicitur.*" Buxtorf expounds the same word *pix*, also, *Cyprus, arbor adorata:* Can. i. 14. Jerome, whom Taylor follows in his Hebrew Concordance, expounds it a species of the Cyprus, *Cyprus arbor.* S. Pagninus explains it as a derivative of כפר *cipper*, as it certainly is, in the conjugation Pihel: "*Removere iram, removere iniquitatem et peccatum: Expiare:*" Exod. xxx. 10. "*Expiationem facere,*" Lev. iv. 20. and xvi. 17*. Hence the covering of the sacred Ark in the Tabernacle is called כפרת *capporeth, Propitiatorium,* "the Mercy-seat," Exod. xxv. 17—xxxvii. 6., whereon were the Cherubim of Glory, with expanded wings, beautifully and significantly expressive of that great covenant union which is the foundation of the divine grace towards mankind. The very introduction of the word כפר in the history of the Ark, connected as it stands with atonement and propitiation for sin, and so often and repeatedly used in the sacrificial rites of the Levitical institution, necessarily and unquestionably points to that *covering of sin within and without,* whereby alone salvation could be extended to the human race. And thus we may see the great doctrine of atonement shadowed forth in the structure of the Ark, and in the divine instructions given to Noah, what he was to do, what materials he was to use, and what measures he was to go by; all precisely defined, and mysteriously

* *See* Appendix, last page.

significant of that grace which should be manifested to the world. The doctrine of atonement by sacrifice is as old as the days of Adam; but, strange to say, is lost in our English translation of Gen. iv. 9: "Sin lieth at the door." At what door? The text implies, At the door of the sheep-fold. But how could sin be said to lay at this door? The answer is, A *sin-offering* is at the door; *i.e.* close by, at hand, to make an atonement, and pacify the divine wrath. Cain, the once heir of the world, having trespassed in offering not according to just rites, is indignant, and lost his birth-right. The very same word that is here rendered "sin," is, in the Book of Leviticus, rendered "a sin-offering," "an offering for sin;" and so ought to be noted in the margin of our Bibles. I only mention this to shew the importance of a correct translation, in order to a correct exposition of the Sacred Text; and although this has been known a hundred years ago, and approved by some of our best divines, yet it is left still in obscurity, to convince us how slow is the progress of divine knowledge.

Page 27.—With respect to the magnitude of the Ark, I have computed it by the larger cubit. Those who may consider it too much, may prefer the lesser: the former, however, appears to have been the building cubit used in the building of the Temple. The cubit of Mersennus is a curious document, and may be useful to consult in any future revision of the Hebrew measures of length. The measures of the Holy Land, and location of the Tribes, being prospective, and having in view the future restoration of the Jews, must be regarded with increasing interest: and these measures and allotments are so clearly and perspicuously described by Ezekiel, and answer so well with the boundaries of that once happy land, that it appeared desirable to call it into present notice; and in particular as it regards the measure of the Hebrew fathom, or *Middah*, which, on a rude calculation, is computed about 6½ feet English. A meridian line, supposed to be drawn from the parallel of Great Zidon and Damascus on the north, situated about lat. 33° 40′ north, and extending to 31° southward on or near the parallel of the south bay of the Salt Sea, will give this measure exact enough for present inquiry.

If this exposition of the Ark be thought extragavant, let the reader be aware of what has been advanced on the subject long ago, and much more extravagant, by Origen, who, in order to repel the objections of the philosophers of his time, gave to the Ark an enormous magnitude. When Celsus objected, that the Ark was a monster with all things in its belly, Origen answered, that the Ark was like a great city, whose base was 90,000 cubits long and 25,000 cubits broad; and which Kircher, in his *Arca Noë*, calculates more than equal to the whole territory of Rome: cap. 28. page 28. But Origen corrected one error by another, when he enlarged the Hebrew cubit six-fold, in order to defeat the subtle philosophers; among whom Apelles, the disciple of Marcian, and leader of a sect of heretics, was a bitter adversary to the Mosaic history. I only observe, that these are the resorts when men are at a loss to find out the truth: either they make the Ark to be what it never was, or represent it such as it never could have been, if we go by the Scripture: and so it is with those who place the ark in a boat, as the Dutch painters have done, to shew that such a form as they gave it was not safe, unless put into a boat to secure it from the boisterous waves. Diodati, an Italian divine, in his Annotations, Gen. vi. 14, says: "The Ark was a great vessel, in the inside like a great "chest, of a long and slender form, with divers partitions and inclosures. The briefness of the "relation," says he, "leaves it doubtful, whether this body was not contained in some other, of form "more apt to float upon the waters, and preserve that which it contained within." The Scripture

account makes no mention of any such additional vessel; it is a merely human invention: neither was it required, if we give to the Ark its due form. Bishop Wilkins, in his "Real Character," has given his estimates of the Ark; and Mr. Arthur Bedford his, in his "Chronology," which may be consulted; but as for the species of the animal world, their estimates fall short, in proportion as the discoveries in Natural History increase, and new species appear.

The number of persons saved in the ark is said to be few, that is, eight souls, 1 Pet. iii. 20; and Noah is called the eighth person, Ib. ch. ii. 5: but these eight were the principals, namely, Noah and his wife, and his three sons, Shem, Ham, and Japheth, and their three wives, in all "eight persons." But it is a maxim in Theology, that one part of Scripture does not contradict another; and the supposition that more persons were saved in the ark than those "eight" specially recorded, apparently contradicts such conclusion as groundless and unwarrantable: but of two scriptures put into the balance, a third comes in, and weighs them both down in the *vis verborum* of Gen. vii. 1. God says unto Noah, "Come thou, and all thy house, into the Ark." A most welcome and gracious command was here! Noah had an unlimited privilege to bring in with him all his household, all his family, his sons, and his sons' sons, with their wives and children; or what is the meaning of this word "all." It is said in the genealogical register of the Divine History, that the "Children of Shem *were* Elam, and Ashur, and Arphaxad, and Lud, and Aram:" Gen. x. 22., and repeated in Chron. i. 17. Therefore Elam and Ashur were born before the Flood, and therefore, also, saved in the Ark. Arphaxad was born soon after the Flood; and after him Lud, and Aram, and others. Noah's sons and grandsons are named, in Gen. x., in the order of their birth. "Now these are the generations of the sons of Noah, Shem, Ham, and Japheth; and unto them were sons born after the Flood;" therefore these were all born before the Flood, and were saved in the Ark, and these constituted the whole house of Noah;" but their minority excluded them from the dignity of principals in this important history. I shall here quote an opinion on that subject, much to the purpose.

Dr. S. Harris, a learned Hebræist, and King's Professor of Modern History in the University of Cambridge, in his Commentary on the Fifty-third Chapter of Isaiah, a posthumous work *, discoursing on the ancient registers and enrolments, observes, page 73, "that though only eight "persons were said to enter into Noah's Arc (whereof four only were men, and fit for labour), it "may not be impossible, that as these were *heads* of families, and so consequently only *named*, that "some *servants* might be taken into the Arc with him; for some such were doubtless assistant to "*Noah* in the building of the vessel, who, by being long with him engaged in this work, must be "informed by him (a preacher of righteousness) of the judgment God was bringing upon the "world; and therefore very likely concurred with him in his *faith*, and were equally *objects* of the "divine mercy; and therefore, I say, it is not impossible that some of these might be taken into the "Arc with him; their hands probably being necessary for the management of it, during so great "a storm, and for taking a proper care of so many living creatures as were preserved in it for so "long a time, which doubtless must have been a work of great fatigue and labour. This will "more easily account for the speedy peopling of the world after the Deluge: and I find the very "learned Bishop of Cumberland was of this opinion."

Page 27.—This account of the summit of the Pyramid, given at 28 feet, differs from other

* 4to. *Lond.* 1735.

accounts, and particularly Mr. Greaves's, who made it $13\frac{1}{6}$ feet at the top; but an honoured friend, mentioned at the close of this work, explains this difference in the several accounts, to have arisen from the mutilations to which it is subject by the barbarous Arabs and travellers, who wantonly and mischievously take up the slabs and roll them down the Pyramid; so that a heap of such fallen fragments are seen at the bottom, to its great disfigurement.

Page 28.—The regular pyramid is a section of the cube, whose altitude is equal to half the diameter of the base, and is contained within a semicircle. The Great Pyramid is not of this precise order; its height or altitude being found more than half the diameter of its base. A second order is that whose altitude is equal to half the diagonal of the base, and is also bounded and contained within a semicircle; and consequently, if the diagonal be given at 1000, the altitude will be 500: but the true height of the Egyptian Pyramid being determined at less than half its diagonal, is therefore found to be not exactly of this order, but nearly approaching to it; and probably aimed at in the original design, though failing in the execution; for, as I have noticed above, page 21, works of magnitude and cost are designed on some fixed plan; and, as far as practicable, the building is conformed to the plan and design determined on: and that the design at which they aimed was strictly geometrical, there can be no doubt; yet the Egyptians failed in the execution in raising so vast a pile, if the survey be correct.

Mr. Greaves's diagonal, in proportion to his base of 694 feet, is 991 feet nearly; the half of which is $495\frac{1}{2}$ feet, for the height of the Pyramid; for as the radius is to the tangent of 45°, so is half the diameter to half the diagonal, or as 7 to 10, or 706 to 1000. Say $7 : 10 :: 694 : \frac{991}{2} = 495\frac{1}{2}$.

Page 29.—Astronomy began very early to be cultivated among the Egyptians; and to them is attributed the discovery of the magnitude of the solar year, or, as it is distinguished, *the Egyptian year* of 365 days; which discovery appears to be noticeable, and memorialised in the construction of their Great Pyramid, if it may be allowed to pursue the investigation. The ancient measure of length being the cubit, and that measure being determined common with the Hebrews and Egyptians, as nearly as Dr. Cumberland could determine it, and reduced to English measure, a certain standard is obtained: but we find also another, called the longer cubit, to have obtained, on which we may with equal propriety calculate the measures of the Egyptian Pyramid, on which to infer the number of days contained in the solar year; the measures of the base of the Great Pyramid being found, if not exactly, yet nearly approximating to it.

APPENDIX.

As an apology to the reader for introducing to notice a new and restored Chronology of the Patriarchal Ages, I request to say, that it seemed necessary, at the very threshold of my subject, so to do, in regard of the most ancient history concerned with it; and trust to be excused, if I present

a few particulars which induced me to pursue these inquiries, and the result of them. In the first place, the hitherto discordant systems of the Hebrew and Samaritan Chronology are hereby harmonised, and restored to one entire and uniform line of time. The Samaritan Chronology reckons 2754 years from the Creation to the Departure of the Israelites out of Egypt; and, by a further correction, 2814 years: and therefore, if we subtract the sum of 1656 years for the period before the Flood, according to the Hebrew, there will remain 1158 years for the period from the Flood to the Exodus; and thus the aid of the Samaritan Chronology is importantly great, in restoring to us between *three or four hundred years*, supposed to have been lost in the Hebrew. Thus I hope to have reconciled the two systems, on principles of their own, in ballancing the original numbers amongst themselves by a process the most simple and easy that could be, at least until some other, and more easy, simple, and demonstrative method be discovered. It being understood that the Samaritan is a duplicate of the Hebrew, the supposition of any really existing variance is shewn to be groundless, as well in its chronology as in its history: if we go the right way about it, and allow the original numbers, as I have just remarked, to correct themselves, their whole and particular differences immediately vanish. Among the untenable positions of the present Hebrew Chronology, as stated in the Index to the Holy Bible, is that of the patriarchal successions, which are almost wholly lost: for example, Shem, the undoubted successor of Noah, who lived 600 years, died 75 years after the Calling of Abraham, which is utterly irreconcileable with his rank and character, as *the Blessed of the Lord;*—that Abraham, his remote descendant, should be preferred before him, and made the heir of Promise; and, moreover, that Heber, another eminent patriarch, should have outlived Abraham, and not have had a rank in the succession to which he was entitled; these are points that must be replied to, in all attempts to support the present defective system of the Hebrew Chronology. But, again, to recover between *three and four hundred years*, in the age between the Flood and the Vocation of Abraham, is a matter of no small importance in the history of the ancient world—the re-peopling of the earth after the Flood; the forming of the first great associations of mankind; the building of cities; the growth of the Arts; and rise of the first empires, among which we have early notice of the Assyrians, Babylonians, Egyptians, Medes, Persians, &c.; and, alas! their monuments, to tell succeeding generations that they once existed. And what are these monuuments? Babylon is perished, and its mighty tower laid with the dust; and perhaps the Egyptian Pyramids may be, or the earliest of them, the only wreck left behind! These rocks of ages seem to have been spared, as eternal monuments of that singular and extraordinary country wherein they are situate; as if to certify to the latest posterity, "This is the land of Egypt!" Again, three or four hundred years for the extension of this post-diluvian period allows for the much greater population and multiplication of animals than could be produced in a much less time; so that the historian, the geologist, the naturalist of every class, finds more room for the growth of the species of all animal, vegetative, and mineral substances. But especially will the historian find his accommodation in the adjustment of those fragments of ancient history, whose authenticity has been questioned on the principles of the undoubted verity of the Hebrew Chronology, and particularly the high antiquity of the Assyrian and Babylonian empires; not excepting even the Chinese, concerning whose antiquity their annals contend far above any nation existing in the world; their empire having been held through a succession of one hundred kings, during

the vast period of 2697 years, according to the most authentic histories that country produces, and from the most studied researches of the European writers; among whom, Couplet, Duhalde, Martinai, Dr. Morrison, and many other authors, may be consulted. Thus their history goes beyond the Flood, according to the vulgar Hebrew account, which reckons 2357 years from the Flood to the commencement of the Christian æra; whereas, by the proposed correction, there is time sufficient for their history, supposing it to be proved authentic, and which exactly measures this period, viz. 2697 years. If to the Usherian computation of the age of the world, 4004, be added 350 years, the year of the world at the Birth of Christ will be 4354; and if to this be added the current year 1832, the present year of the world will be 6286. According to the present position of the fixed stars, and the precession of the equinoxes, as computed from the Tables of Tycho Brahe, the eminent Danish astronomer, and the modern Astronomy, there remains not many years to accomplish a period when the stars shall have moved three whole signs, or 90 degrees of the equinoctial, at the end of 6353 years; about which time, also, the Moon will have completed seven great periods of 912 years, or 354 Chaldean cycles, equal to 6384 solar years; which numbers have been taken from Dr. Halley's Tables, published by Mr. Whiston, Ferguson, and other authors. Mr. Moxon computes that the present Pole-star, which hath an increasing declination, will continue to increase until A.D. 2091; when the said star will decrease in declination for a great number of years, if the world shall so long continue. These examples are adduced to shew that the chronology of the heavens is a subject for the most sublime speculations, and seems to accord with that of the Earth.

The late Baron Cuvier rejects not the proofs and testimonies of antiquity; and, in his Theory of the Earth, acknowledges the Creation and the Deluge, and assents to the high antiquity of the Book of Genesis. He, however, considers the chronology of the Earth is to be found in its geology, and its several epochs and revolutions to be ascertained thereby; and thus concludes his Preliminary Observations, page 23*:—"Thus we have a collection of facts, a series of epochs "anterior to the present time, and of which the successive steps may be ascertained with perfect "certainty, although the periods which intervened cannot be determined with any degree of pre-"cision. These epochs form so many fixed points, answering as rules for directing our inquiries "respecting this ancient chronology of the Earth." Hence we may conclude, from the sentiments of this great philosopher, that a line must be drawn between the chronology of the Earth and that of the human race; an opinion that seems popular with the geologists of the present day. But whatever may be the issue of such researches, the history of the Deluge being admitted, and attested by the present remains discovered in various parts of the Earth, both upon its surface and within its bowels, is itself a universal testimony of the antiquity and genuinenes of the Mosaic writings: and in consideration of the singular brevity of that history of the world, this enlargement of the account of the Flood, in all its progress and particulars, shews what a mighty revolution it must have produced on our globe, by the retiring waters: not that its internal parts could be so disturbed and disorganized thereby in its whole substance, for then had its very foundations been destroyed; but only upon, and somewhat below, its surface: for that vast sphere of waters which enveloped the whole Earth and covered the highest mountains was, comparatively speaking, no

* Kerr's Edition, with Mineralogical Notes by Professor Jameson. 8vo. *Edinburgh*, 1815.

more than the paper that covers any common globe. If, indeed, geologists could explore the regions below, in depth equal to the bottom of the unfathomable seas, or equal to the height of the highest mountains, then might some solid conclusions be drawn from their subterranean researches: but as it is, the case is far otherwise; and all that is known of the internal strata and irruptions are, at most, superficial; and therefore, to antedate the origin of the Earth beyond the limits of human existence, otherwise than as recorded in the Mosaic history, seems wholly unwarrantable and fabulous: and moreover, to suppose an animal and vegetable creation to have been in existence ages before the human race had being, is to dispute the order and end of their design, as subservient to mankind.

Mr. Bellamy, in a Prospectus of his New Translation of the Bible, published in March 1818, and who pretends to have followed the Masoretic Text, has rendered the verse in question strangely different:—"Make for thee an ark of the wood of Gopher: apartments shalt thou make in the ark; "and thou shalt expiate within and without, by atonement." Now, as Mr. Bellamy professes to abide by the Hebrew punctuation, how is it that he reads the word in one conjugation and interprets by another; for every Hebrew scholar must know, that the word וכפרת *vecapharta*, which he has rendered "*to expiate*," is in the conjugation Kal, "to cover," "to cover over," "to overlay;" and our English word *to cover* seems a derivation of it: but the translator has rendered it in Pihel, "*to expiate*," or "*to make atonement*," as if giving the passage rather a mystical than a literal sense.—*Vid.* Notes.

In the Archæologia, published by the Society of Antiquaries, Vol. XVIII. pp. 302—305, the idea that the country of *Tibet* was the land of the Ark is supported. I quote the passage:—"That it is "in the Taurus of the Ancients that we are to look for one of the mountains of Ararat, and not in "Armenia; and we shall find the country where the Ark rested, and to which it left its name, the "country of THIBET. In the sixth chapter of Genesis, ver. 14, it it said, 'Make thee an ark,' "תבת. *Thibet* is a word only applied to Noah's Ark, and to that which Moses' mother pre-"pared for his preservation: *see* Exod. chap. ii. 3. '*an ark of bulrushes.*' (תבת *Thibet*). In "this place it is written with a *jod*, and has all the letters that compose the word used to represent "the country of Thibet, as the *Tau* in Hebrew is both *T* and *Th*. There is also another good and "indisputable reason for making Thibet the resting-place, or where the Ark first touched land; "because its mountains are the highest on the earth—nine thousand feet above Mont Blanc, which "is fifteen thousand feet above the level of the sea, and four thousand above Chimborazo in South "America, which is twenty thousand." *Art.* XXXV. *A View of the Opinions of various Writers on the identical Place where the Ark of Noah rested. By the Rev. Stephen Weston, B.D. F.R.S. in a Letter to the Right Hon. the Earl of Aberdeen, K.T. F.R.S. President, &c. &c. &c. Read before the Royal Society, 16th May,* 1816.

It is to M. Mary Anne Schimmelpenninck, a lady of considerable talent, and well skilled in the Hebrew, that I am indebted for the above extract: her opinion is, that "the Himmalaya Range is the Mount Ararat where the Ark of Noah rested." *Biblical Fragments*, p.115. 8vo. *Lond.* 1821.

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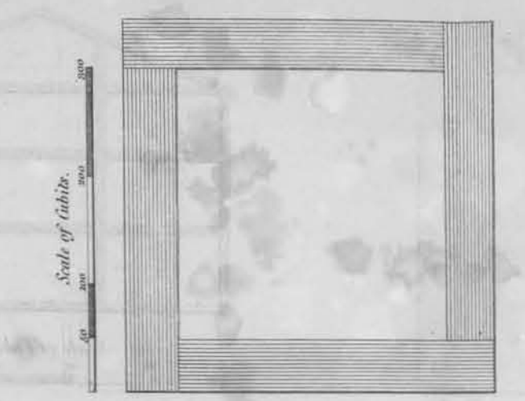
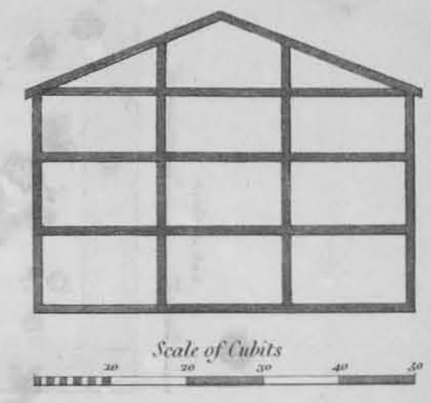
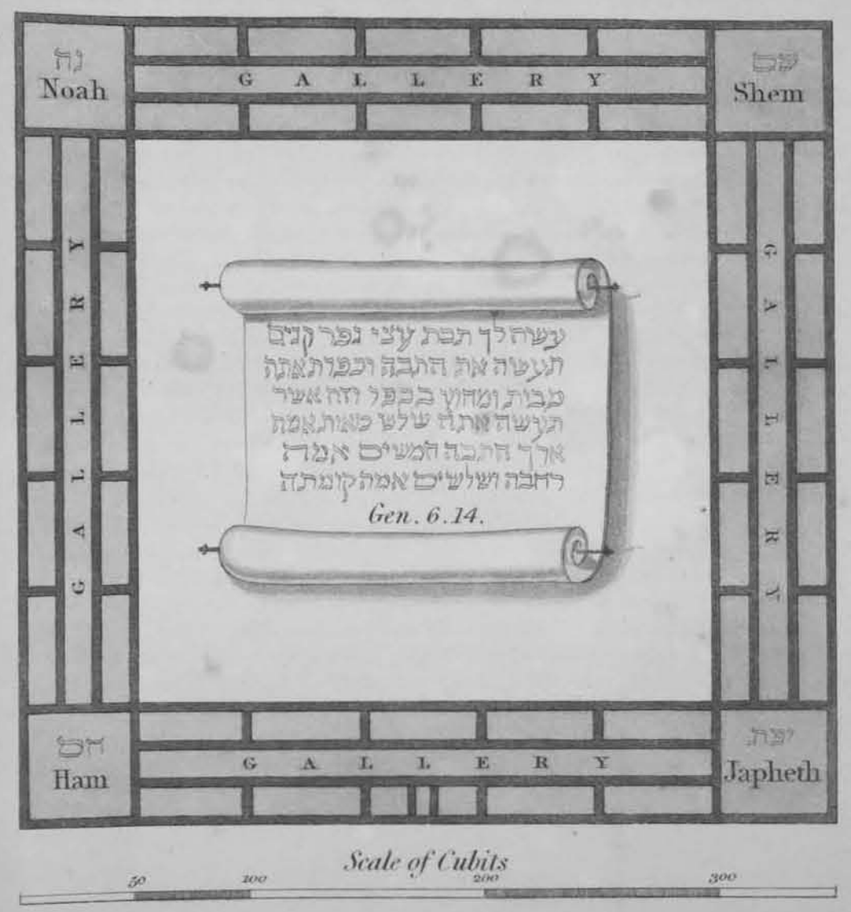
Ground Plan of the Ark.



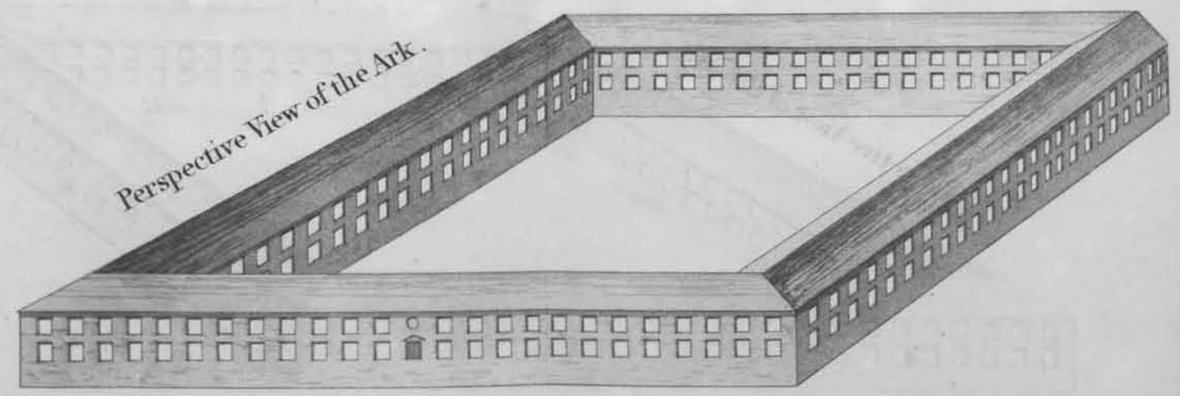
Section of the Ark with its Stories and Roof.



Plan of the Middle Story of the Ark with its Rooms and Galleries.



Perspective View of the Ark.



DESIGNED to explain the original name, form, and dimensions of the Ark of NOAH.

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