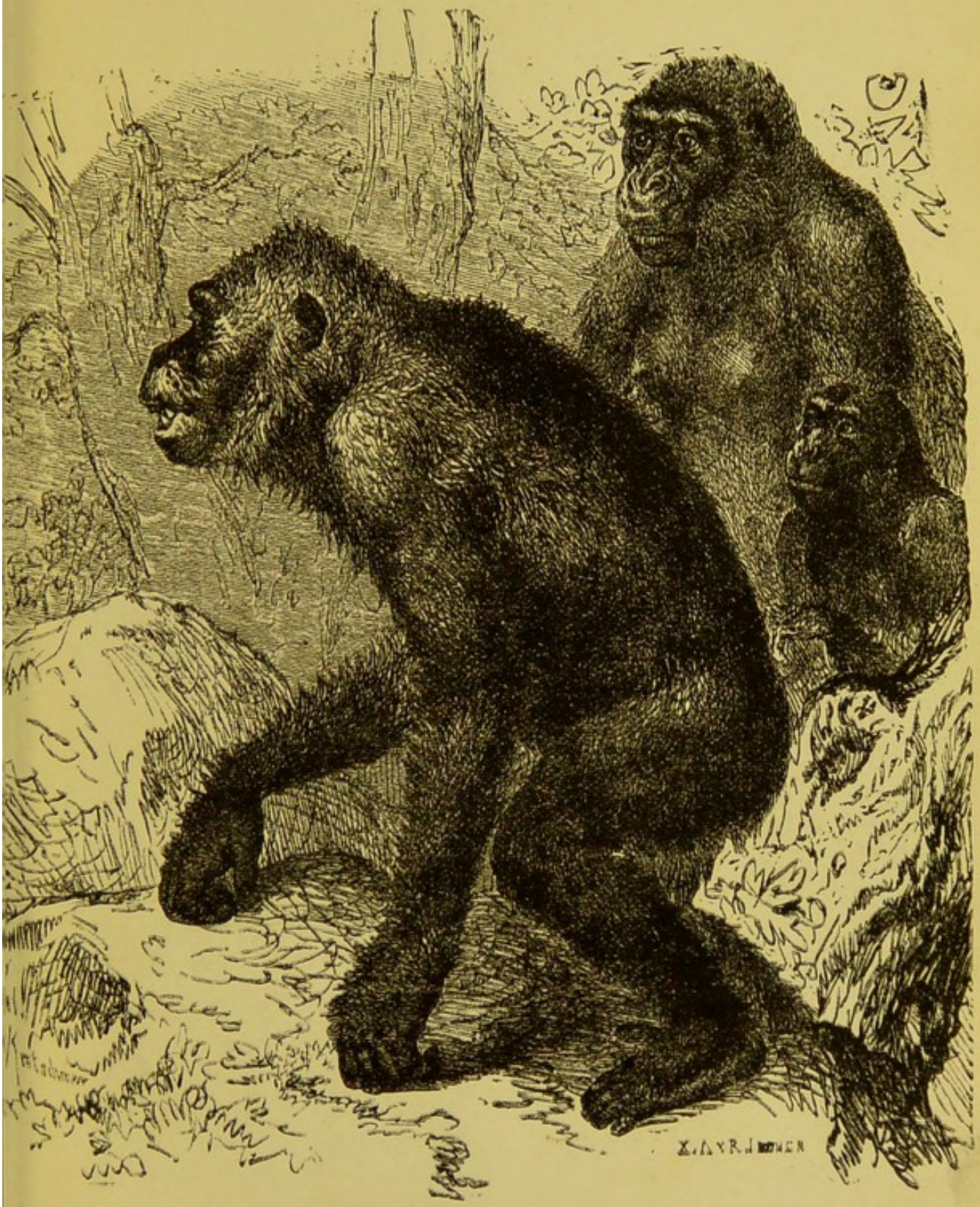
EVOLUTION AND CREATION.

CHIMPANZEES (Troglodytes).



GORILLAS (Troglodytes).

PREFACE.

Many imperfections, as I anticipated, have been discovered in my "Popular Faith Unveiled," some of importance and others of little consequence; and many suggestions have been offered in all kindness by those who have done me the honour of reading my work, for consideration in case I should issue another edition. The strongest of all the arguments urged in favour of the real necessity for a second and revised edition is that that part of the subject treated upon which related more particularly to the true origin of man was not dealt with in a sufficiently exhaustive manner in the last work. This, of course, is a true charge: but it should be borne in mind that the main object of the book was to expose the real nature of the popular superstition, and not to trace out the pedigree of man; and, moreover, to have entered fully into such subjects as the evolution of mind and matter would have considerably augmented the bulk of the work, and consequently have necessitated such an increase in the price as to have made it prohibitory to a large number of thinkers, who have not too much spare cash to throw away. I therefore determined not to re-issue the work in an amplified form, but to supplement it with a number of published lectures (delivered here and in various other large towns) and articles, which should be ultimately brought out as an illustrated volume.

These lectures, etc., some of which are re-prints from journals and some of which I have myself printed in my leisure moments, I now offer to the public in book form, together with a number of figures, maps, etc., illustrative of the subjects treated upon. "Man—Whence and Whither" and "Evolution of the God-idea" are re-printed from *The Agnostic*; "Man's Antiquity," "Evolution of Mind," "Zodiacal Mythology," "Intellectual Progress in Europe" and "The Annals of Tacitus" from the *Secular Review*; and "The Special Senses" and "The Bible" from *The Agnostic Annual*: the remainder of the text, as before stated, has been printed by myself.

I must acknowledge with gratitude my indebtedness to Mr. John Bennett, of Prince's Buildings, Dronfield, who has been kind enough to assist me by drawing the zodiacal signs, the Bacchanalian insiguia, the oriental and Egyptian zodiacs, Amen-Ra, Mafuca, Aidanill and the negro head, the two hands, the Fuegans, the Australian (2), African and European skulls, and Boötes, Virgo, Cetus, Aquarius and Sagittarius; and also to Mr. Wm. Gill Hall, of 66 Cecil Road, Sheffield, who has kindly drawn for me the single chimpanzee, the orang, the lemur, the face of the proboscis monkey, the moor monkey, the hairy couple from Burmah, the genealogy of man, the earth's section, and the ascent of mind. The remainder of the illustrations, with the exception of the two zincographs of the gorillas and chimpanzees (the frontispiece), have been drawn by myself; and I must trust to the generosity of my readers to overlook the amateur style of my productions, which, it is hoped, will be found sufficiently well done to serve the purpose for which they are intended. However amateur the illustrations may be in appearance, this I can truthfully say, that every sketch in the book is a faithful reproduction of the original. Some of the illustrations, however, have been derived from such gross originals that it has not been considered advisable, for many reasons, to reproduce the figures in their entirety; but wherever part of a figure has been modified by the substitution of a symbolical or other device the fact has been notified to the reader at the foot of the illustration.

In the course of the following lectures the opportunity has been seized to rectify some of the mistakes inadvertently committed in my "Popular Faith Unveiled;" but there are two errors in printing that have not yet been set right, and to which, therefore, I should now like

to call attention. The first occurs on page 102, lines 9 & 10 from the bottom, where אלהי—*A L.E.I.* should have been written אלה—*A.L.Y (or.I.)E.* (*El Yah*), *or* אלוה—*A.L.OU.E.* (*Eloh*), etc. The next occurs on page 109, line 6 from bottom, where *millions* should read *thousands*.

I have only now to frankly admit that during the last few years my views as regards the theories of ultimate causation and the future state have undergone some modification; that consequently I now regard the line of argument adopted in support of the theory of a future state of consciousness on pages 5 & 6 of my above named work as a false one and the conclusions arrived at as consequently false also; and that respecting the existence of a ruling power in the universe, I neither affirm nor deny such a condition, being contented with the knowledge that I neither know nor apparently can ever know anything at all about the matter, and recognizing, with Moleschott, the incontrovertible truth that "there is nothing in our intellect which has not entered by the gate of the senses."

H. J. H.

Purton Lodge, Sheffield.
January 1887.

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EXPLANATORY NOTES.

The illustration of Brahm, the androgynous creator of the Hindus, "is a copy of an original drawing made by a learned Hindu pundit for Wm. Simpson, Esq., of London, whilst he was in India studying its mythology. It represents Brahm supreme, who in the act of creation made himself double, *i. e.*, male and female. In the original the central part of the figure is occupied by the triad and the unit, but far too grossly shown for reproduction here. They are replaced by the *Crux Ansata* [a cross and circle representing the male and female elements in nature]. The reader will notice the triad and the serpent in the male hand, whilst in the female is to be seen a germinating seed, indicative of the relative duties of father and mother. The whole stands upon a lotus, the symbol of androgyneity. The technical word for this incarnation is *Arddha Nari.*" (Inman's "Ancient Faiths.")

The illustration of the god Siva, nursed by his virgin-wife-mother, Parvati, requires some explanation. The right hand of the virgin makes the symbol of the yoni (female principle) with the forefinger and thumb, the rest of the fingers typifying the triad. In the palm and on the navel is a lozenge, emblematic of woman. In the infant's hand is one of the many emblems of the linga (male principle), whilst under his feet a lotus supports his body. The monkey is emblematic of the carnal desire. The relationship existing between the mother and child was of a twofold nature. The deities of the ancients were usually androgynous, and thus each of the members of the Hindu triad possessed two parts, a male half and a female half, which he inherited from his androgynous parent Brahm, whose female principle brought forth the three essences, Brahma, Vishnu and Siva. Thus each god became the husband as well as the son of the divine female principle, just as *Virgo* of the zodiac was both mother and wife of the sun-god of the annual revolution, mother at his birth at the winter solstice and wife at his ascension at the summer solstice. The female part or wife-mother of Siva was the virgin goddess Parvati; of Vishnu, Lakshmi; of Krishna, Devaki; of Indra, Indranee; of Horus, Isis; etc.

The illustration of the amulet of the double *Crux Ansata*, represents the female principle at the top in the shape of a ring (which has the same meaning as the winged disc, cup, and shell, or *Concha Veneris*); the male principle in full vigour on the right side in the shape of a cross (male organ of generation in the original); the unprolific male principle of infancy on the underneath side, also in the shape of a cross (infantine male organ in the original); and the act of generation on the left side, in the shape of a clenched hand, with the thumb bent across the back of the first finger.

The illustration of god incarnate with man represents the saviour of the world—ΣΩΤΗΡ ΚΟΣΜΟΥ—as a cross, or phallic symbol (an erect male organ in the original), which forms the beak on the head of a cock, the symbol of the rising sun, the whole resting on the shoulders of a man, symbolical of the incarnation of god and man.

The illustration of the amulet in Mr. Townley's museum represents the female principle at the top, in the form of a circle, under which is the victorious sun-god of the vernal equinox, in the shape of a bull's head with a cross or phallic symbol (erect male organ in the original) on either side of the mouth, the whole being emblematic of the sexual union of the powers of heaven and earth, and the consequent regeneration of nature at the spring equinox.

Mafuca, whose portrait is given in the following pages, was a female ape from the Loango coast, placed in the Dresden Zoological Gardens. Hartmann, in his "Anthropoid Apes," describes her as being "120 cm. in height, reminding us in many respects of the gorilla. The face was prognathous; the ears were comparatively small, placed high on the skull, and projecting outwards; the supra-orbital arch was strongly developed; the end of the nose was broad; and there were rolls of fat on the cheeks." K. Th. von Siebold also classed her as a gorilla; but Bolau and A. B. Meyer opposed this view; while Bischoff, judging by the structure of the brain, thought she was a chimpanzee. Now it is pretty generally believed that she was either a cross between the gorilla and the chimpanzee, or else a member of a distinct species of anthropoids intermediate between the gorilla and the chimpanzee. In Hartmann's account of Mafuca we read that she was "a remarkable creature, not only in her external habits, but in her disposition.....She hardly obeyed anyone except Schöpf, the director of the gardens, and when in a good humour she would sit on his knee and put her muscular

arms round his neck with a caressing gesture.....Mafuca was able to use a spoon, although somewhat awkwardly; and she could pour from larger vessels into smaller ones without spilling the liquor. She took tea and cocoa in the morning and evening, and a mixed diet between whiles, such as fruit, sweetmeats, red wine and water, and sugar.....If she was left alone for any time she tried to open the lock of her cage without having the key, and she once succeeded in doing so. On that occasion she stole the key, which was hanging on the wall, hid it in her axilla [arm-pit], and crept quietly back to her cage. With the key she easily opened the lock; and she also knew how to use a gimlet. She would draw off the keeper's boots, scramble up to some place out of reach with them, and throw them at his head when asked for them. She could wring out wet cloths, and blow her nose with a handkerchief When her illness began, she became apathetic, and looked about with a vacant, unobservant stare. Just before her death, from consumption, she put her arms round Schöpf's neck when he came to visit her, looked at him placidly, kissed him three times, stretched out her hand to him, and died." It may be added to this that Mafuca exhibited the greatest decorum and modesty in the performance of all her daily and other natural functions.

Aidanill, the hairless Australian, is a good specimen of a low type of human being; having a superciliary prominence greater than is usually found amongst races of men, with a remarkably small cranial capacity and almost entire absence of frontal development. The skull, in fact, differs but little from that of Mafuca, given beneath it; and its owner belonged to those races described on p. 14 of "Evolution of Mind."

The Swaheli Negro is a good specimen of the dolichocephalic prognathous type of head, considerably higher in intellectual capacity than that of Aidanill.

The hands are intended to illustrate the close resemblance between the hand of a gorilla and that of a man belonging to the Hammeghs of the Nubian Soudan. It will be observed that while the fingers of the gorilla are webbed, the second and third fingers of the man are slightly webbed and his thumb and first finger very considerably webbed.

ERRATA.

MAN—WHENCE AND WHITHER?—Page 12, line 11 from top, for "Palæolithic" read "Pleistocene;" and line 12 from top, for "on the earth" read "in Europe, for the human remains found in France clearly testify to the fact; and even in America his antiquity must be very great indeed," etc.

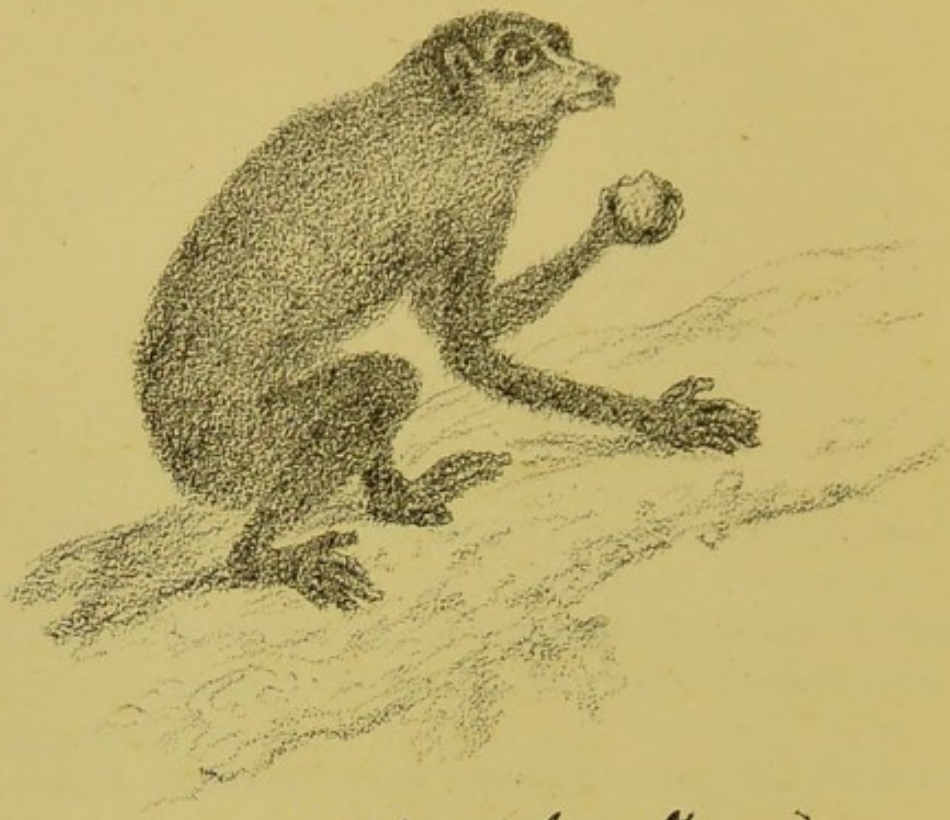
EVOLUTION OF MIND—Page 1, line 6 from top, for "Protamnia" read "Protista."

EVOLUTION OF THE GOD IDEA—Page 25, line 17 from top, for Σεύς read Ζεύς.

INTELLECTUAL PROGRESS IN EUROPE—Page 17, line 9 from top and line 7 from bottom for "Purgatori~~o~~us" read "Expurgatori~~o~~us."

ANNALS OF TACITUS—Page 15, line 13 from top, for "that religion" read "that the religion."

CREATION AND FALL—Page 6, last line, and page 7, last line but one, for "mammals" read "placental mammals."



LEMUR — *Half Ape* — (*After Mivart*)

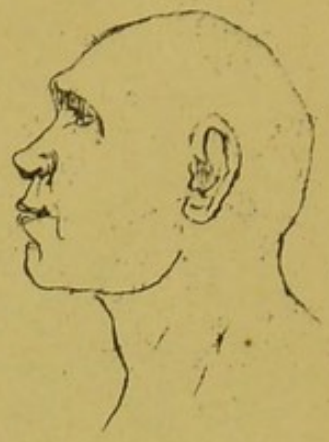
FACE OF PROBOSCIS MONKEY
(*After Mivart*)

THE MOOR MONKEY
(After Mivart)

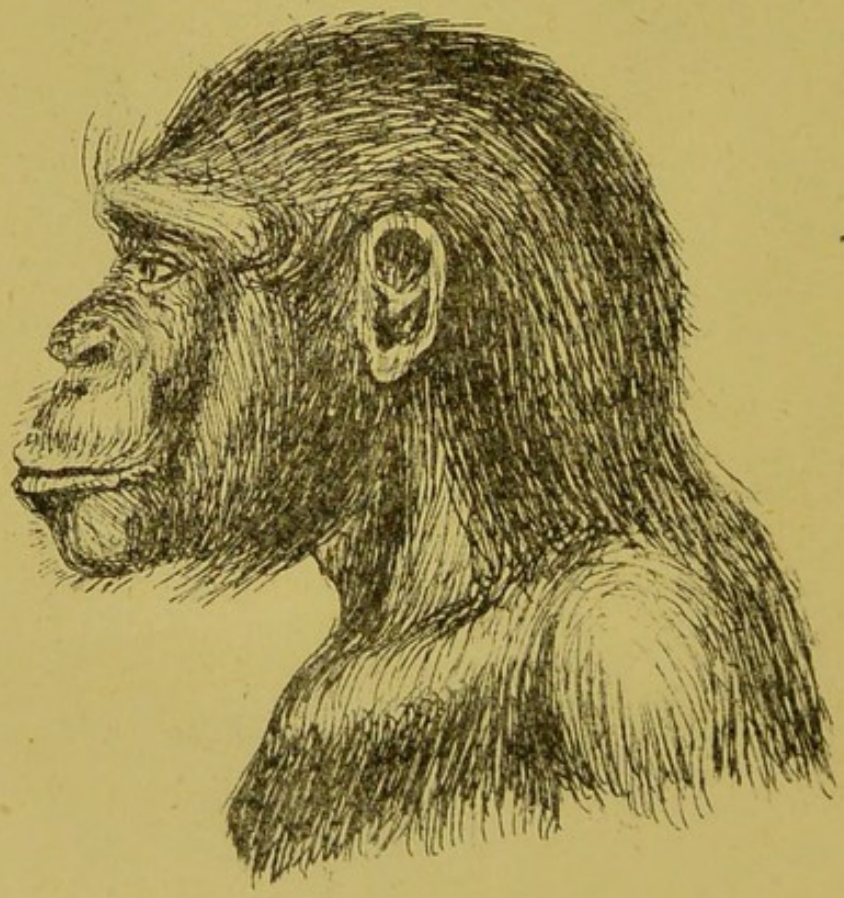
CHIMPANZEE (*Troglodytes*)
(*After Mivart*)

ADULT MALE ORANG (After Mivart)

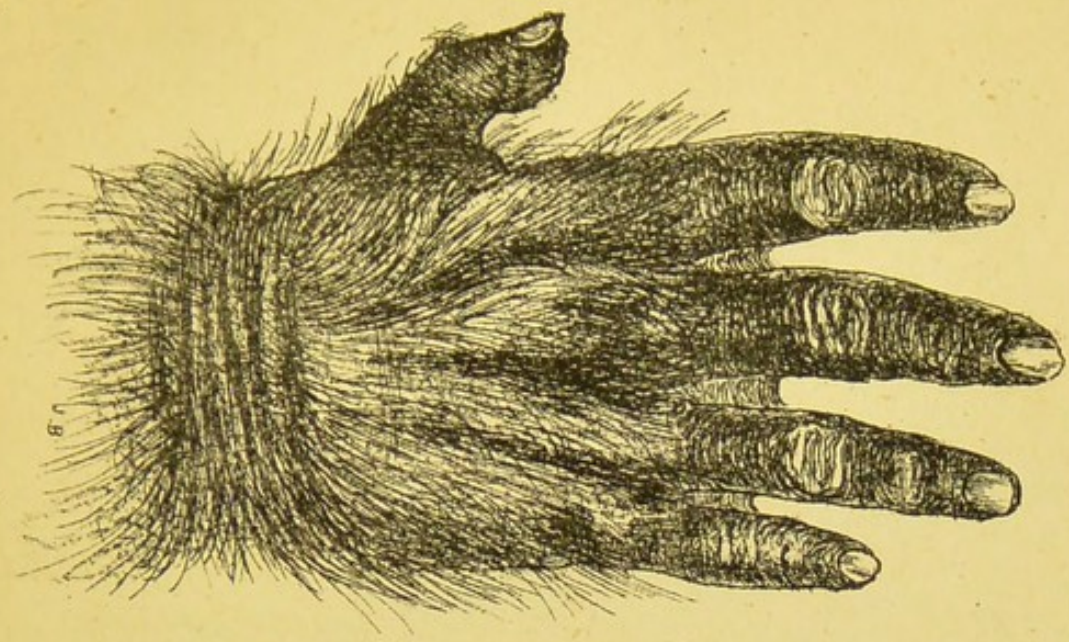
SWAHELI NEGRO
(After Tyler)



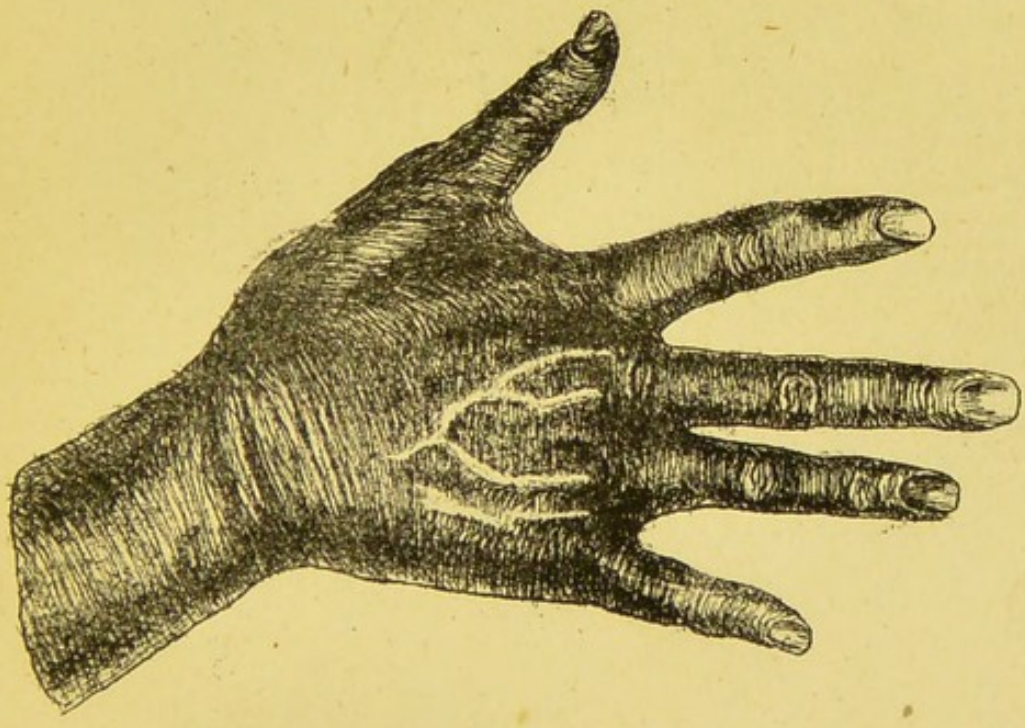
AIDANILL. HAIRLESS AUSTRALIAN.
(After Hartmann)



MAFUCA
The Anthropoid Ape at Dresden
(After Hartmann)

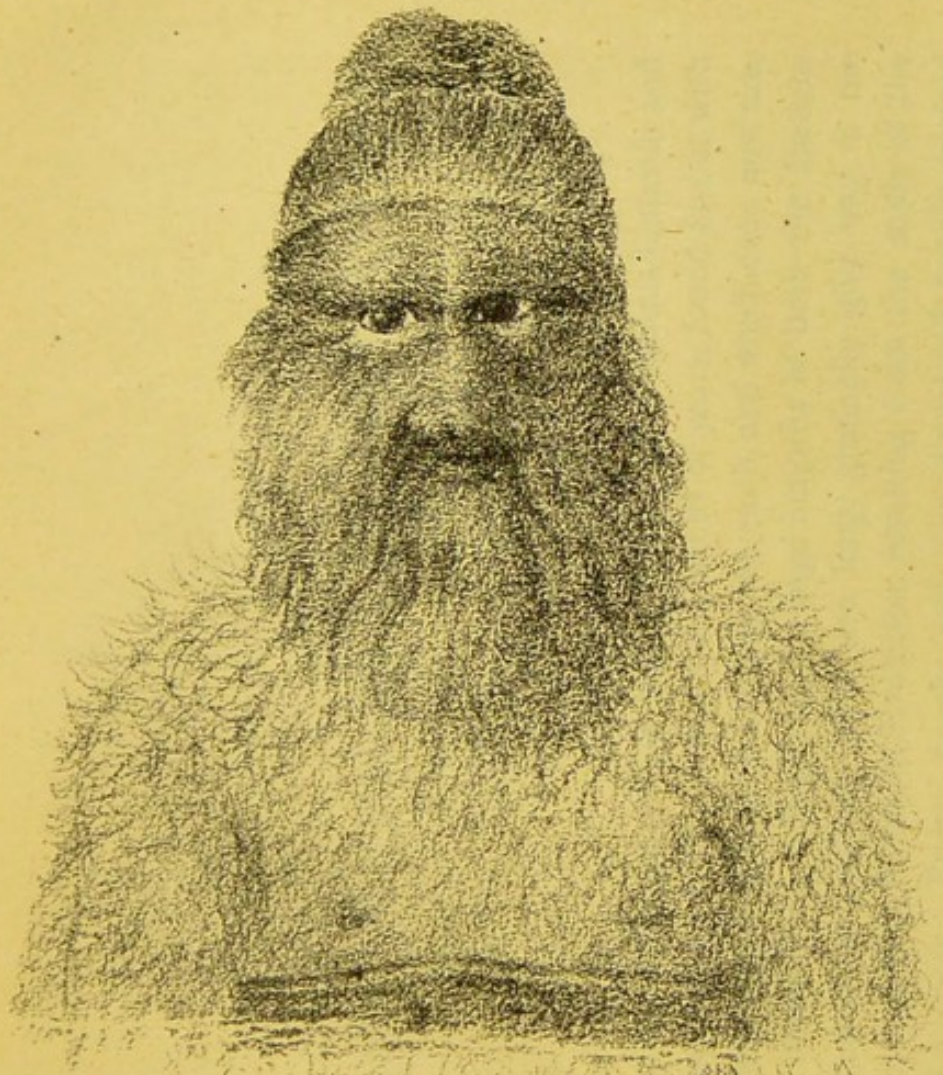


Hand of a very aged male gorilla.
(After Hartmann)



Hand of a Hammegh man from Roseres, Blue Nile.
(After Hartmann)

NATIVES OF TERRA DEL FUEGO.



Moung-Phoset The Son

Mahphoon The Mother

THE HAIRY FAMILY OF BURMAH

MAN: WHENCE AND WHITHER?

THE fables of the creation of nature and man by various fantastic and ridiculous means, which have, for thousands of years, found favour with the unthinking multitudes inhabiting the earth, and which even now are, one or other, firmly believed by the large majority of both the Eastern and Western populations, must, ere long, gradually give way to the truer and grander theory of Evolution, resulting from the study of the natural sciences. Priests, monks, and other interested people, backed up by the enormous wealth which has accumulated to the various religious creeds during the past centuries of darkness, ignorance, and gross credulity, will, no doubt, oppose all their tremendous forces against the new philosophy, thus, for a while, delaying the inevitable result. But this condition of things cannot last long. Education is doing, and will continue to do, its work, until, at length, falsehood and slavery will give place to truth and liberty.

In order to discover the origin of man, it is necessary to carry the mind back to a very remote period, and observe the mode of development of our planetary system; for, according to the theory of Evolution, there were no starting points for particular forms in nature, the whole universe consisting of one continuous unfolding of phenomena.

The modern theory of the mode of development of our earth, as also of all other planets and suns, is the one known as the "Nebular Hypothesis," which is the prelude to the great theory of Evolution, and which teaches us that the earth, the sun, the moon, the planets, and all the heavenly host are the effects or results of the condensation of a nebulous vapour, which took place many millions of years ago, after having been diffused for an incalculable period of time throughout the illimitable expanse of space. The cause of this nebulous vapour, or attenuated matter, is unknown to us, and will probably ever remain enshrouded in the profound mystery which at present envelopes it.

Beyond this limit all is mere speculation or hypothesis; and the Agnostic philosopher and the man of science, humbly acknowledging their complete inability to solve this mighty problem of ultimate causation, are content to leave further speculation in this direction to metaphysicians and poets.

During many long ages this process of condensation of the nebulous vapour steadily continued, being controlled by the laws of gravitation and transformation, until, at length, a number of rotating spherical nebular masses were formed, in a state of high heat from the shock of their recently-united atoms, which spheres gradually cooled by radiation, consequently contracting and becoming possessed of a more rapid rotary motion, giving off from their equatorial regions large rings of vapour, which, in their turn, condensed and, under the influence of the same two laws, formed separate spheres for themselves. This is the mode by which our planetary system was formed, as taught by Laplace and accepted by the scientists of to-day.

The earth, then, in common with other planets, may be said to have passed from the condition of a gaseous to a highly-heated fluid mass, and to have gradually become plastic, and moulded by revolution on its own axis to its present shape—*i.e.*, an oblate spheroid, or globe, flatter at the poles than at the equator, with a polar diameter about twenty-six miles shorter than the equatorial diameter. This is the shape that all plastic bodies which rotate on their axes must assume, as we are clearly taught by mathematics.

Assuming, then, that the earth was in a state of incandescence when it began to take a definite form, we shall at once see that the denser materials composing it would gravitate towards the centre, forming a semi-plastic mass surrounded by an envelope of gases and watery vapour. The gases would be quickly disposed of in various chemical combinations, and the watery vapour would be condensed and deposited in depressions on the surface of the central mass as soon as it had become cooled sufficiently. The outer crust of this central, semi-solid mass was soon converted, under the intense heat, into a hard, granite-like rock, which was continually subject to sudden upheavals, resulting partly from the violent escape of gases, and partly from water passing through fissures on the surface to the heated interior and giving rise to steam of great expansive power. In this manner great inequalities of the surface were, no doubt, produced, whose rugged edges, after the lapse of a vast period of time, were gradually softened

down by the subsequent action upon them of air and water. This first rock formation is termed by geologists the Plutonic (from Pluto, monarch of hell), on account of its being the result of intense heat, and not, as is the case with all other rock formations, laid down in layers by water. Whether the Plutonic rock forms a solid centre to our earth is matter of uncertainty; but all are agreed that the internal heat of our planet, whether caused by the friction of the particles of a solid substance or by a molten fluid, is still, even in these later times, intense. In boring through the earth's crust, the average increase in temperature for every fifty feet of descent, after the first hundred feet from the surface, is one degree Fahr., which would give us, at a depth of 125 miles, sufficient heat to melt most of the rocks. This intense internal heat has generated, in times long gone by, enormous forces, by which rocks of all ages have been raised and depressed, twisted and distorted, broken and forced out of position, and forcibly compressed, so as to eventually cause most important changes of surface level.

The next class of rock-formation is totally different from the Plutonic, or unstratified series, in that it is the result of the wear and tear of the surface when acted upon by air and water, and is laid down, in the first instance, by water, as sediment. Water, in the forms of seas, rivers, rain, and ice, has been the chief agent in the arrangement of all the stratified rocks, the determination of the earth's contour, the direction of valleys, and, in fact, the regulation of the whole physical geography of the visible portion of the earth. With the help of this mighty agent, so soon as the earth had become sufficiently cool to permit condensation to take place in its vapoury envelope, the ceaseless wear and tear of the Plutonic—and, subsequently, of all other—rocks, which has accumulated so vast a mass of material, commenced. Large volumes of water were gradually deposited, without intermission, until permanent seas and rivers had become established, and the new process of stratification, which was henceforth destined to shape the crust of the earth and to provide the conditions of life, commenced to operate. This action is taking place daily in rivers and seas, as we may observe at any time. On the tops of mountains the same action is in operation, though under different conditions, snow and ice splitting fragments from the rocks to be borne away as grit into the valleys by impetuous torrents and deposited in other places. Within the Polar circles ice on a grander scale is levelling down the land; glaciers, covering thousands of square miles, are slowly sliding down the valleys, grinding their

surfaces still deeper—forming sands, clays, and gravels, and forcing these down to the sea-shore; and icebergs, many miles in circumference, are carried by currents along coasts and against cliffs like huge ploughs, completely altering the face of the rocks beneath. This wear and tear results in the formation of immense quantities of detritus, which is deposited in layers at the bottom of seas and rivers, and consolidated by pressure, being frequently assisted by lime, iron, or silica as a cement. The coarser-textured rock has been laid down in rapidly-moving, shallow water; and the finer-textured in still, deep water. Thus, through many long ages—probably millions of years—the surface of the earth underwent continual change from the constant deposition of stratified rock, each layer of which completely buried beneath it the various life forms of the previous period, which circumstance enables us to ascribe to the various members of the animal and vegetable kingdoms particular geological periods; for fossilised remains of animals and vegetables have been unearthed in the different layers of the stratified rocks, conclusively proving their existence on the earth at those periods.

In the Plutonic or unstratified rock-formation period there was, of course, no life upon the earth, the conditions necessary for such development not being present; but in the very earliest of the stratified formations we find evidence of the dawn of marine life, both vegetable and animal. Geologists have divided the stratified rock into three chief divisions, the Palæozoic (ancient life), or Primary; the Mesozoic (middle life), or Secondary; and the Kainozoic (latest life), or Tertiary. Each of these, again, has been subdivided into smaller sections, according to the particular kind of deposit met with, the particular places where the best examples are to be found, or the particular life-forms existing. The Primary, the depth of which is unknown, is subdivided into seven periods—viz. :—

Laurentian, consisting of highly metamorphosed (that is, changed in appearance from the original stratified rock character, owing to its proximity to the molten Plutonic rock) limestone, containing fossil remains of the Foraminifera, some of the first living organisms.

Huronian, consisting of less highly metamorphosed sandstone, limestone, etc., and containing fossil remains of lowly-organised molluscs (soft-bodied organisms).

Cambrian, consisting of slates, sandstones, and conglomerates, and

containing fossil remains of sponges, sea-weeds, star-fishes, sea-lilies, lowly shell-fish, marine worms, and the first land plants.

Silurian, consisting of slates, limestones, etc., and containing fossil remains of corals, chambered spiral shell-fish, crabs, sea-worms, and bony plates and scales of a low form of fish.

Devonian, consisting of old red sandstone, shales, and coralline limestone, and containing fossil land plants, fishes, belonging to shark, ray, and sturgeon families, and first fossil insect.

Carboniferous, consisting of mountain limestone, coal, sandstone, ironstone, clays, etc., and containing fossil scorpions, beetles, and amphibians.

Permian, consisting of new red sandstone, marls, magnesian limestones, etc., and containing fossils of true reptiles.

The Secondary division is subdivided into three periods, viz.:—

Triassic, consisting of sandstone, limestone, and clays, and containing fossils of gigantic reptiles and first mammals (small marsupials).

Jurassic, or Oölitic, consisting of limestones, coral rags, clays, and marls, and containing fossils of bird-reptiles and several species of marsupials.

Cretaceous, consisting of clays, sands, soft limestone, and lignites, and containing fossils of new bird-reptiles.

The Tertiary division is subdivided into four periods—viz.:—

Eocene (dawn of recent life), consisting of sandstone, limestone, sands, clays, marls, coral rags, and lignites, and containing fossil equine forms, birds, reptiles, bats, and marsupials.

Meiocene (less recent life), consisting of arctic coal, limestone, sands, clays, and lignites, and containing fossil apes and marsupials.

Pleiocene (more recent life), the white and red crags of Britain, containing fossil apes, bears, and hyenas.

Pleistocene (most recent life), consisting of glacial accumulations of all kinds of earths, and containing fossil remains of apes and men, and implements of stone, bone, and horn, and later still of remains of lake-dwellings, shell-mounds, etc.

These different layers of stratified rocks have not always kept their proper positions with regard to each other in the order they were originally laid down; but, owing to volcanic eruption, have frequently intruded upon each other, so that, at first sight, it would sometimes appear as though the regular order of deposition had not been adhered to; but that this is not so has been made apparent by careful investiga-

tion over large areas. The depth of the Secondary and Tertiary is from twenty to twenty-five miles. We see, therefore, that the first life-forms made their appearance as marine organisms in the Laurentian, or first stratified rock period; but whether the animal or the vegetable form first appeared, or whether both were developed from one primordial organism, it is impossible at present to say. In each successive layer of rock we meet with fossil remains of animal and vegetable life, which steadily develop into more highly organised forms, through the different periods, until, at last, they assume the exquisite phases we now behold around us. The vegetable kingdom was the first to exist upon the land, the first land-plant being found in the fossil state in the Cambrian layer, at the same time that marine animal life was assuming the forms of worms, shell-fish, and star-fishes. In the Silurian period the first vertebrate animals made their appearance in the form of lowly-organised fishes, from which, in the Carboniferous age, developed amphibious creatures, the first breathing animals, living both in and out of water, and the progenitors of the large kingdom of land animals, including man.

Now, if we take the pedigree of man, as arranged by Darwin and Haeckel, and compare it with this geological tree, we shall see how perfectly the sister sciences of Paleontology and Biology corroborate each other. The first form of life, says Haeckel, was the Moneron, a structureless albuminous atom of bioplasm, not even possessing the structure of a mere cell. We place this, which belongs to the primitive order Protozoa, in the Laurentian period, where we are told by geologists that fossil foraminifera have been found. This promordial organism gradually developed into single nucleated cells, called Amœbæ, and these again into masses of nucleated cells, called Synamœbæ. These simple and multiple cell organisms we place in the next period, Huronian, in the strata of which geologists tell us have been found fossil remains of lowly organised molluscs, or soft-bodied animals. Ciliata are the next forms of life, which consist of Synamœbæ, covered with vibratile cilia. These gradually developed a mouth, becoming Gastrœada, and afterwards Turbellaria, a low form of worm (Vermes), with a mouth and alimentary canal; and are placed in the Cambrian period, in which stratum have been found remains of this kind of life. The ascent continues through the transition stage of Scolecida to Himatega, or sack-worms, with their rudimentary spinal cords; from which gradually evolved Acrania, or the first vertebrate animals, without skulls, brains, central heart, jaws, or limbs; but with a true vertebral cord. This

peculiar little animal was a lancet-shaped marine worm, akin to the lancelet or amphioxus of to-day. From these developed Monorrhini, or vetebrate hybrid worms and fishes, with skull, brain, and central heart, but no sympathetic system, jaws, or limbs, and with a single nasal cavity (lampreys). These three forms are placed in the Silurian period, in which stratum have been found fossilised bony plates and scales of fishes and Annelides, or sea-worms.

The next forms of life to be developed, from the Monorrhini, were the Selachii (Amphirrhini), or true fishes, of the shark family, with two nasal cavities, swim-bladder, two pairs of fins, and jaws. From these evolved the Ganoidei, and thence all osseous fishes; and Dipnoi (mud fish), or hybrid fishes and amphibians, with both gills and lungs. These little animals live during winter in water, when they breathe air dissolved in water through their gills; and during the summer in mud, when they breathe with their lungs. Both these are placed in the Devonian period, in which have been found fossil sharks, etc. The next forms are Sozobranchii, or amphibians with persistent gills, from which evolved Urodela, or amphibians with transitory gills, but persistent tails, and legs; allied to the salamander. These are placed in the Carboniferous period, in which have been found fossilised amphibians. We next get Protamnia, or hybrid salamanders and lizards (frogs and toads), with no gills or tails, but possessing an amnion and cloaca. These represent the parent forms of the three great higher branches of vertebrates—Reptilia, Aves (which evolved from reptiles), and Mammalia, and are placed in the Permian period, in which have been found fossilised amphibians and true reptiles. Monotremata (Promammalia) are the next forms developed in our pedigree, the parent forms of the class Mammalia; with cloaca, amnion, and marsupial bones; which are placed in the Triassic period; and from which evolved Marsupialia, mammals with amnion and marsupial bones, but no cloaca; allied to the kangaroo and opossum of to-day. This species we place in the Jurassic and Cretaceous periods. From Marsupialia developed the large kingdom of Placentalia, which lose the marsupial bones and cloaca, and acquire a placenta, and which we divide into three main branches, according to the particular placental formation. The first division we call Villiplacentalia (tufty placenta), from which evolved Edentata (sloth, ant-eaters, and tertiary monsters), Cetacea (marine placental mammals, such as whale, dolphin, porpoise, and sea-cow), and Ungulata (horse, cow, pig, rhinoceros, and hippopotamus). The second division we term Zenoplacentalia (ring-like

placenta), the earliest forms of which were Carnaria, or flesh-eaters, from which came Carnivora, or land beasts of prey (cats, dogs, bears, etc.), and Pinnipedia, or marine beasts of prey (seal and walrus). The third division we name Discoplacentalia (discoid placenta); and here we find, as the first development, the Prosimiæ, or tailed lemurs, quadrupeds with claws, and having the appearance of hybrid cats and monkeys. All these are placed in the Eocene period, in which stratum geologists have found fossilised placentals.

From the discoplacental-mammal Prosimiæ evolved the following species—viz., Prosimiæ of Madagascar (lemurs of to-day), with four feet and claws; Cheiroptera (bats); Rodentia (squirrels, mice, porcupines, hares); Insectivora (moles, shrew-mice, and hedgehogs); and Simiæ, or quadruped monkeys, with two feet, two hands, nails, and tails. We divide Simiæ into two classes, the Platyrrhini, or New World apes, with thirty-six teeth, tails, no cheek-pouches or callosities, and nasal cavities pointing outwards and divided by a thick septum (from which came the American howlers, weepers, capuchins, and squirrel-monkeys); and the Catarrhini (Menocerca), or Old World apes, with thirty-two teeth (like man), tails, cheek-pouches, callosities, and nasal cavities pointing downwards and divided by a thin septum (like man). These are placed in the Meiocene period, in which have been discovered the first fossil apes. From the Catarrhini developed the tailed baboons and macaques, with thirty-two teeth, cheek-pouches, and callosities; and the Anthropoidæ, with thirty-two teeth, but no tails, cheek-pouches, or callosities. These were evolved during the Pleiocene period. From the anthropoid (man-like) apes we get three distinct divisions—viz., the gibbon and orang families, with no tails or cheek-pouches, walking partly on hind legs, and wandering in companies in India; the chimpanzee and gorilla families of Africa, with no tails or cheek-pouches, no articulate speech, walking on hind legs only, living in companies in caves, and carrying their babes in their arms; and Alali, or ape-like men, commonly called the "missing links," who were probably developed, during the Pleiocene period, in Lemuria, a submerged continent which formerly occupied the position of the Indian Ocean; or in the districts of the Nile and Ganges.

These primitive ape-like men were the connecting links between men and the apes, and are divided into two main branches—viz., woolly-haired Alali, who migrated from Lemuria, west and south; and straight-haired Alali, who migrated from Lemuria, north, east, and south. Both these branches had skulls of the same character as those of the chim-

panzee and gorilla—that is, they were dolichocephalic (long-headed) prognathous (prominent jaws), and also, like their ape brethren, were troglodytes, or cave-dwellers. From the woolly-haired Alali evolved the Papuans of New Guinea and Tasmania, and the Hottentots of Africa, whose descendants of to-day are but little removed in brain development from the higher apes. They are dolichocephalic prognathous savages, with black, hairy skins, long arms, and short, thin legs, with ill-developed calves; are semi-erect, walk on hind legs, and have no true articulate speech. A higher development of the woolly-haired Alali is the Negro, and higher still the Caffre, both of whom are dolichocephalic prognathous savages, with black, semi-hairy skins, and imperfect articulation. From the straight-haired Alali are derived the Australian natives and the large family of Malays or Polynesians. The Australians migrated south, and were dolichocephalic prognathous savages, with smooth, dirty brown skins, and straight black hair. The lowest tribes of the present day have no true articulate speech. The Polynesians migrated north and east, and were dolichocephalic prognathous troglodytes (as the gorilla and chimpanzee), with clear, smooth brown skins, and true articulate speech. This branch split up into two large families, the Mongolian or Turanian, and the Caucasian or Iranian. The former covered Northern and Eastern Asia, Polynesia, and America, and were originally brachycephalic (broad-headed) prognathous men. They subdivided into two distinct species, the Mongols of China, Japan, Lapland, Finland, and Hungary, who are brachycephalic, but not prognathous, with smooth, brownish yellow skin, and straight black hair; and the Mongols of America, who are mesocephalic (round-headed), but not prognathous, with smooth red skins and straight black hair. The Caucasian family covered Western Asia and most of Europe, being mesocephalic prognathous troglodytes (afterwards agriculturalists) with smooth dark skins and long straight hair; and subdivided into two branches, the Semitic, of Arabia and Syria, and the Aryan or Indo-European; both of whom are mesocephalic, but not prognathous.

It is true that, so far, no fossil remains of Alali have been found, with the exception of the Neanderthal skull; but it is equally true that they may soon be discovered. It is only comparatively recently that the other species have been found fossilised; and it must be recollected that only a very small portion of the earth's crust has yet been explored, and that not the most likely for finding. No attempts have been yet made

to unearth the life-remains in the neighbourhood of the Indian Ocean, where it is believed man first evolved from his ape-like ancestors. It does not, however, seem to me to be essentially necessary that the "missing link" be found in order to substantiate the Evolution theory. There is so little difference between the higher anthropoid apes and man, compared with the enormous differences observed between the earlier forms of life and the ape species, that the sequence and continuity appear now conclusively settled to any reasonable observer. Comparative anatomists and embryologists both declare in favour of the theory of development of Darwin and Haeckel. It is a fact beyond dispute that every human being commences his individual existence as a tiny piece of structureless bioplasm, from which condition he passes through the Amœba stage to the Synamœba, and thence in regular order through each successive stage of development marked in the genealogy given above, becoming worm, fish, and mammal in turn, and finally being born into the world as a member of the human family. Each of these lower forms also passes through all the species preceding it in precisely the same manner. This is one of the strongest arguments in favour of Evolution. It is said that the power of speech possessed by man opposes a strong barrier to the theory; but it has been shown clearly that other animals besides man can use articulate sounds, which convey meanings to each other. Monkeys certainly understand each other's chattering, and it is highly probable that birds also understand each other's cries. It is true that the sounds made by animals are chiefly monosyllabic; but philologists now tell us that the languages spoken by primitive races of men are compounded of quite simple elements, perfectly within the grasp of an ape's voice. Travellers, whose veracity and ability cannot be impugned, have described long conferences held by monkeys, where one individual addressed the assembly at great length, fixing the attention of all upon himself, and quelling every disturbance by a loud and harsh cry, which was at once recognised and obeyed by the multitude. Is it credible that this should be purposeless? Is it not actually the exercise of speech?

Is it not possible—nay, even extremely probable—that, under the irresistible pressure of civilised man, his immediate precursor may have become extinct? All the human races that now tend to bridge the interval between the highest man and the highest ape are fast becoming extinct under this very pressure. The gulf widens, and will widen. The Caribs and Tasmanians have passed away, while the Australians,

New Zealanders, aboriginal Americans, Eskimo, and others, are fast following in their wake, and this all in a comparatively short space of time. There is undoubtedly now a far greater physical and mental interval between the Hottentot woman and such men as Gladstone and Darwin than between the Hottentot and an ape. It is a fact beyond dispute that man was not in such a high state of development ages gone by as at present. The earliest traces of man exhibit him to us in the Palæolithic, or old stone, age, as wild and living in caves, using only the rudest stone implements with which to battle with the ferocious monsters around him. His jaw was then prognathous, like the ape, and his body large and powerful.

In the limestone caverns of France have been discovered the fossil remains of men who inhabited caves and belonged to the Palæolithic, or early Pleistocene, period. Together with these troglodytes, or cave-dwellers, were rough, unpolished stone implements and weapons, denoting a low state of civilisation. Other caves, in later strata, give us lighter stone weapons, of better finish, and occasionally horn dart-points, such as would be used for catching smaller game. Numbers of skin-scrapers also were found, suggesting the idea that the people used the hides of animals for clothing, instead of going naked, as their ancestors. The hairy character of the body would be probably giving place to a finer, smoother, and more delicate outer skin, which would necessitate clothing of some kind. Still later we find implements altogether of flint, lancet-shaped, admirably-proportioned, and of three sizes, adapted for arrow, javeline, and lance points respectively, and designed to be fitted to wooden and bone shafts. After these appear arrows and darts of deer's horn and bone, and stone and flint tools, which were used for making these arrows. We also find such implements as bone awls and needles for piercing and sewing skins, arrow-heads furnished with barbs on each side, and harpoons barbed on one side only.

Now was man's intellect fairly on the swing; but still he was, as yet, only in the Palæolithic period, for not one polished implement nor fragment of pottery is found in their stations. They were surrounded by ferocious carnivora, which sometimes fell victims to their weapons. The mammoth still tenanted the valleys, and the reindeer was the common article of food. They were hunters, possessed of the rudest modes of existence, and with but little of what is now called civilisation.

In Britain the troglodyte man was contemporary with the mammoth,

rhinoceros, lion, and hyena, none of which existed in the later Pleistocene era; but there have been no perfect skeletons found here like those in France. Human *bones*, however, have been discovered in various deposits, together with the skeletons of long-extinct animals. The best British human fossil is the portion of an upper jaw containing four teeth, from Kent's Cavern. Hermetically sealed in stalagmite, deposited on the floor of the cavern by water dropping from the roof, this jaw lay *below* the remains of extinct mammals; while beneath all were bone and stone implements of human workmanship, equally firmly fixed in a natural limestone cement. Geology fixes the date of this troglodyte at the early Palæolithic period, and it is beyond doubt that man existed at this remote period, or even earlier, on the earth, for a human skull was found in the delta of the Mississippi beneath *four* different layers of forest growth, which must have formed part of a living human being 50,000 years since. The celebrated Neanderthal skull, of which so much has been heard, certainly belongs to the mammoth age, if not earlier; and, if it represent a race, and not merely an individual, that race would lie in a position intermediate between the lowest man and the highest ape. It *may* only represent a man of peculiar formation, as we often see men in the present day deformed or of eccentric build; and, therefore, we cannot look upon it *positively* as the "missing link." One other similar find, however, would for ever settle the question, and proclaim to the world that the "missing link" was, at last, found. In capacity, the cranium is human, while the superciliary arches and the brow are distinctly ape-like. Professor Huxley sums up his examination of this skull with the remark that "the Neanderthal skull is, of human remains, that which presents the most marked and definite characters of a lower type."

Following the Palæolithic era, or rude stone age, is the Neolithic, or new stone, age; and now we find man using polished weapons, making pottery, using fire to warm himself with, and developing social manners. Instead of living in caves, he lived in lake dwellings, with others of his species, and gradually developed agricultural tastes. This metamorphosis, we know from the fossil remains found deposited in various strata, occupied a long period of time, probably thousands of years; and even then we are left thousands of years before the historical era, which followed the bronze and iron ages. Compare these men with those who lived in the Grecian and Egyptian eras, and again compare these latter with ourselves, and the record is one of

trial and failure through long ages, and of experiment crowned at last by attainment. Has not the invention of the steam-engine alone been a means of extending man's dominion in a marvellous manner? Think what has been achieved through electricity! There has, undoubtedly, been a continued struggle from barbarism to civilisation, and the little we know of the early history of man tells us that he lived the life of a wild beast, leaving no impression on the earth save one of the victims of his well-aimed stone or flint-pointed spear.

So much for the "missing link." There is one other point to be settled before we have completed the sequence of evolution, which commences with the condensation of the nebulous vapour and terminates with the development of man; and that is the question of how life originated. We have found that the first dawn of life was in the form of a simple speck of bioplasm, void of any structure; and that this primordial germ, which we call a Moneron, was developed in the earliest period of deposition of stratified rock at the bottom of the sea, and is now being constantly developed as of old. Now, if the theory of evolution be not mere talk, this primordial germ must have been spontaneously evolved from inanimate matter, for the theory allows of no break, being a gradual unfolding of phenomena. We are told that there is no experience in nature of such a development. Perhaps so; but that is no argument against it. There is no experience in nature of any special creation either; so why fly to this alternative, which is the only one presented to us, instead of adopting the theory which agrees so harmoniously with the whole evolutionary process? Why make this abrupt break in the chain of sequence? Does it not annihilate completely the whole theory of evolution? It is not more wonderful that life should be evolved from inanimate nature than that man should be evolved from a structureless bioplasm. The continuity of evolution once broken, why may it not be broken again and again?

If we are to accept the theory of evolution, we are bound to admit that animate was evolved from inanimate matter. And the difficulty of this admission is not, after all, so great as appears at first sight; for who is to say whether such a condition really exists as inanimate matter? It is a fact that every particle of matter in nature is in a state of active motion; every molecule and atom is constantly active. And why is this not life as much as the animal or vegetable, though in a modified degree of development? Evolution, if it mean anything, should admit this; and I will show you that it does not admit it only, but absolutely

declares that it is so. In the first place, it must be recollected that Balfour Stewart, and all other physical and chemical scientists, declare that every thing in nature is composed of molecules and atoms. The molecules are the smallest quantities into which any individual body or substance can be divided without losing its individuality. For instance, table-salt, or chloride of sodium, can be divided and subdivided, until you get to the limit of subdivision, which is a molecule composed of chlorine and sodium in chemical combination. Further subdivision annihilates its individuality as salt, and leaves us with the two elementary chemical atoms, chlorine and sodium, existing independently of each other. These atoms are incapable of further subdivision. In the same manner, the whole matter of the universe may be subdivided into molecules, which consist of atoms of some two or more of about sixty-seven chemical elements in various combinations. These atoms are the smallest separate particles of masses of matter, and are separated from each other by what is termed hypothetical ether—that is, the fluid ether we believe to be pervading every portion of space. Each atom possesses an inherent sum of force, or energy. The well-established and universally-admitted theory of chemical affinity teaches us that these atoms are capable of attracting and repelling each other, and, therefore, also teaches us, by implication, that they are possessed with definite inclinations, follow these sensations or impulses, and have also the will and ability to move to and from one another. This we are clearly taught by chemistry. Thus every atom in the universe possesses sensation and will, pleasure and displeasure, desire and loathing, attraction and repulsion; and its mass is, moreover, indestructible and unchangeable, and its energy eternal, as we are again taught by the theory of conservation of energy and matter. These sentient atoms of universal matter, whose aggregate energy is the great animating spirit of the universe, have the power of uniting together in various chemical combinations to form molecules, or chemical unities, developing fresh properties in the process, and forming the lowest conceivable division of compound material substances, some atoms uniting to build up crystals and other inorganic masses, and others to develop the various organic or life forms. The atoms of the ultimate molecules of both organic and inorganic bodies are identically the same. It depends entirely upon what particular combination of atoms takes place whether an organic or inorganic form is developed. The primordial life-form we have found to be simple homogeneous plasm, consisting of mole-

cules, each of which is composed of atoms of five elements—carbon, oxygen, nitrogen, hydrogen, and sulphur, differing not one iota from the molecules of inorganic bodies, except that it acquires the special power of reproduction, by virtue of the peculiar combination of its atoms, which power is wanting in the inorganic world, whose molecules are composed of similar atoms, but in different combinations. This is the only difference between the organic, or life, world, and the inorganic, or lifeless, world—life being, as compared with unlife, but the power of reproduction. As examples of this, we may take crystals, the most perfect development of inorganic nature, and the moneron, the least perfect development of organic nature; and the difference between them is almost *nil*, certainly less than between the parents and offspring in many life-forms. The crystal molecules are composed of elementary chemical atoms, as are the moneron molecules; but the former grow by particles being deposited on particles externally, while the latter grow by particles penetrating from without, or being absorbed into the interior and becoming assimilated by the plasm, fresh molecules being evolved in the process, this special power of reproduction being generated by the peculiar combination of the atoms. This argument appears to me to be logically and scientifically sound, and disposes altogether of the notion of a break of continuity between the living and the unliving worlds, which is such a formidable difficulty to many minds. The plasm thus formed by the aggregation of life molecules gradually differentiates into protoplasm and nucleus, which together form a simple cell; and this cell partakes, by heredity, of the nature and properties of its parent form, and also, by adaptation to different circumstances surrounding its existence, acquires fresh properties, which, together with the inherited properties, it transmits to its progeny, thus evolving a still more complex form, inheriting the acquired and inherited properties of its parent, and again acquiring fresh properties; and so on, *ad infinitum*, through the various life-forms we know have been developed in the pedigree of man and animals, through Amœbae, Synamœbae, etc., as in the genealogy given above.

In the course of the development of different life-forms heredity—which, in plain English, is unconscious memory generated in the first life-form and transmitted through all the different species—is the sole factor in the preservation of the parent properties; while adaptation to surrounding conditions and circumstances, natural selection in the struggle for existence, and sexual selection in the struggle of the

males for females are the principal factors in the differentiation of species.

Having traced man's pedigree according to the Evolution theory, from primitive nebulous matter to his present commanding position, and found him possessed with reason and the power of controlling and regulating the forces of nature, our next inquiry is naturally for what purpose is he here and what will become of him eventually. Here we come to the most difficult problem of all ages, which has baffled learned men of all nationalities, and which will probably never be satisfactorily solved. Intimately connected with it is the almost as difficult problem, How was the universe caused at all? There are eminent scientific men who think they can conclusively show that the universe existed from eternity; others as positively assert that it must have been caused by a power outside and independent of itself; while others are equally convinced that it was self-created. But when we examine their arguments we find ourselves unable logically to accept any of their conclusions.

The Atheist declares that the universe has existed from eternity, not having been produced by any other agency, and, therefore, without any beginning; which necessarily implies the conception of infinite past time—an effort of which the human mind is quite incapable. The Pantheist declares that the universe evolved out of potential existence into actual existence by virtue of some inherent necessity; which is as unthinkable as the previous one, for potential existence must be either something, in which case it would be actual existence, or nothing, which it could not possibly be. But admitting, for the sake of argument, the possibility of potential existence as nothing, still we should have to account for its origin, which would involve us in an infinity of still more remote potentialities. The Theistic theory of creation by external agency implies either formation of matter out of nothing, which is inconceivable, or out of pre-existing materials, which leaves us under the necessity of showing the origin of the pre-existing elements, and, like the preceding theory, would involve us in an infinity of remote pre-existences. It also involves the existence of a potentiality outside matter, which must either be caused, which involves a prior cause, or uncaused, in which case it must be either finite or infinite. If it be finite, it must be limited, and, consequently, there must exist something outside its limits, which destroys the notion of its being a first cause. Therefore, it must be infinite. Also, as first cause, it must be indepen-

dent; for dependency would imply a more remote cause. The first cause must, therefore, be both infinite and absolute, which is an absurdity; for a cause can only exist in relation to its effect, and therefore cannot be absolute; and the fact of its being infinite deprives us of the only means of escape from the difficulty, by showing the impossibility of its being first of all absolute and afterwards cause; for the infinite cannot become what it once was not.

Thus, then, we are driven to the conclusion that logic shows the Theistic conception of the origin of nature, equally as much as the Pantheistic and the Atheistic, to be utterly impossible; but it must be admitted that if, instead of matter, we substitute time and space in our consideration of this most important matter, the Atheistic theory more nearly approaches the conceivable than either of the other two; for by no mental effort can we conceive the formation of time and space either by external agency or inherent necessity. It is absolutely impossible for us to conceive the idea of the non-existence of either time or space.

Because the human mind cannot conceive the possibility of nature being produced by external agency, it does not follow that we are bound to admit the impossibility of the existence of an intelligence controlling nature's laws; for it is quite possible that such an existence may be, though our finite minds cannot comprehend it. The Agnostic philosopher, although he cannot logically demonstrate the existence of the Divine Being, yet declares that, inasmuch as this universe consists of existing phenomena, it is absolutely necessary that there should be some cause adequate for the production of the effects manifested. By this process of reasoning he arrives at the conclusion that there exists a something controlling nature, which is utterly incomprehensible—an ultimate reality, of which force and matter are alike merely the phenomenal manifestations. This ultimate reality, moreover, is intelligent.

We cannot recall the wonders of the evolutionary development of the universe without at once seeing that there is purpose at the bottom of all, and that chance is no factor in the process. We cannot believe that man is but a fortuitous concourse of atoms. Reason tells us clearly that we are here for a well-ordained purpose; but what that purpose is we cannot tell. The old notion that our destiny is to prepare ourselves here, to live again in our bodily forms, play harps, and sing halleluyah to all eternity, I regard as mere moonshine. Such a fate would be to me far worse than annihilation. But that we have a future destiny of some sort I have no doubt. We know we must die, and that when we

die our bodily functions, including brain functions, will cease to be performed. Are we, then, annihilated? The answer of scientists is decisively "Yes, so far as we are concerned as sentient individual beings." Science teaches us that the three things which make up consciousness, or man's mental side, are thought, emotion, and volition; that they are inseparably bound up with the brain and the nervous system, whose functions they are; and that when the brain dies these functions cease. This is undeniable. Therefore, if there is any future existence, it is not one of consciousness. The power of muscular movement is arrested at death, and, therefore, we must admit that the power of thought, emotion, and volition ceases at death. Why should the appearance be deceptive in one case and not in the other? It is not the case of a separate entity in the body, but of a distinct function—an effect which ceases with its proper cause. It is absolutely certain, from the teaching of science, that the consciousness grows as the brain and body grow, varies according to the standard of health in the brain, and declines as the general vigour of the brain declines; and, therefore, we can but admit that it dies with the brain. We also learn from Embryology that consciousness evolved by slow degrees from unconsciousness, and that once there was no thought in any of us. Even if science were to admit that man's consciousness continued after death, it would be equally rational to admit that animals also had a future consciousness; for it is quite clear we have slowly evolved from the lowest germ of animal life. Man's very attributes are found in a lower degree in animals, and yet it is the possession of his lofty attributes which he says entitles him to conscious immortality. The intellectual qualities in animals differ from those in man only in degree, while in the possession of some of the highest moral attributes—such as courage, fidelity, patience, self-sacrifice, and affection—some of the lower animals, as the dog, the horse, and the ant, far surpass him. Even among human beings themselves these higher qualities, mental and moral, exist in all degrees, from their almost total absence in the savage up to the mental and moral splendour of a Buddha, a Socrates, a Disraeli, or a Gladstone. Are all these lower animals, savage men, and intellectual and moral geniuses, to have individual conscious immortality? If, as some say, man only and not animals are immortal, then the question naturally arises, When and how came man so? If he was always immortal, so were animals. If he became immortal later on, he must either have slowly acquired the gift, or it must have been

suddenly conferred upon him. In either case there must have been a particular moment when he became immortal. Can we conceive of such a thing as the species being mortal one moment and immortal the next? The question of *how* he became immortal is still more difficult, as the question *why*, or for what merit, is wholly unanswerable. Then, again, science teaches us that animal life, of whatever form, will vanish from the earth long before the inevitable decay of the planet itself. Geologists tell us that, in obedience to a general law, all species have their term of living. They appear, and after a time disappear. How absurd, then, to raise a question as to the conscious individual immortality of the countless myriads of a species that shall itself have utterly vanished without leaving a trace!

Are we, then, annihilated at death? Yes, as conscious individuals. We are bound to admit the force of all the arguments brought forward by science against the theory of a future conscious existence; but these arguments in no way affect the great problem of the "ego," or "self," which exists in all of us, irrespective of consciousness, memory, or other brain function. A man may be unconscious, and yet live; therefore consciousness is not necessary to life. When we ask ourselves whether we shall be annihilated at death, we should first of all have a clear definition of the word "we" before we reply. What are we? What am I? I am not consciousness, which is but a function of one of my organs, the brain, and which merely enables me to know myself. Then what am I? I cannot conceive that I am anything but the energy or life-power developed by the aggregation of my life-particles, which causes the various organs of my body to perform their functions, as cerebrating, etc. The primordial germ of my body was a simple bioplasm, consisting of a combination of life-molecules, composed of energetic atoms. From these molecules evolved fresh molecules, which, under the laws of heredity and variation, acquired new properties; until, at last, a complex organism became developed, possessing far higher powers than those belonging to the primordial germ. As the development of species continued, higher forces became manifested; until, at last, the condition of man was reached, and a life-power developed of a much higher order than any previously known. This life-power, or human energy, is the "ego," the "self," the cause of the bodily functions, and is eternal. Kant declared there was a world unknown, independent of our conscious phenomenal world; and this we must admit to be true, for we have already granted the

existence of an unknown cause, of which force and matter are merely the phenomenal manifestations. It is this outer world of unknown and invisible energy that the scientist finds himself unable to deal with. The death of the body is simply the cessation of cohesion, or dissolution of partnership, between the ultimate atoms of the plasm life-molecules, by which dissolution the property called life ceases, and the atoms of the body assume their original condition, again containing their original sum of force. But what becomes of the huge force developed during the lifetime of the bodily organism? Does that vanish and become a thing of naught? My opinion is that this human force, which is the outcome of the complex union of the ultimate atoms of the plasm life-molecules, and which is but a phenomenal manifestation of the great incomprehensible cause of all phenomena, will, at the death of the body, be re-absorbed into the great animating spirit of the universe, and partake of the nature and properties of the Unknown. This is but my opinion, from which many may differ. I merely offer it as an opinion, and in no way shut my eyes to the great fact that man's destiny is a riddle as yet unsolved. We may safely leave the matter to be dealt with according to the wisdom of that unknown cause of all things, resting quite assured that we shall be far better disposed of than we could possibly dispose of ourselves, even if we had the power. We must bow the head in a truly scientific spirit, and reply to the great question, "I cannot tell."

"To be or not to be? that is the question," says the immortal Shakespeare; after which he sums up the whole argument in two short lines:—

> "To die, to sleep. To sleep? perchance to dream—
> Aye, there's the rub."

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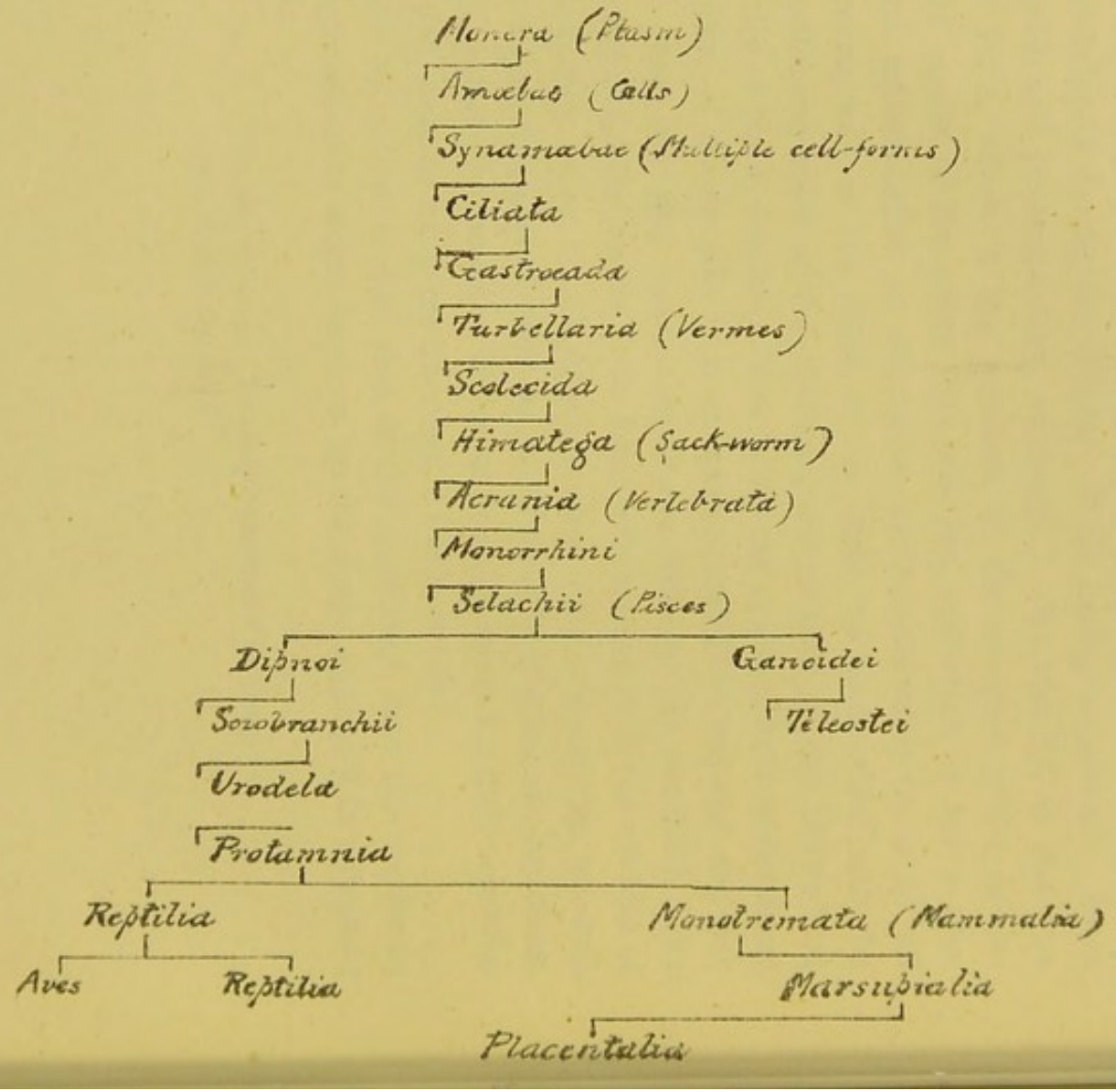
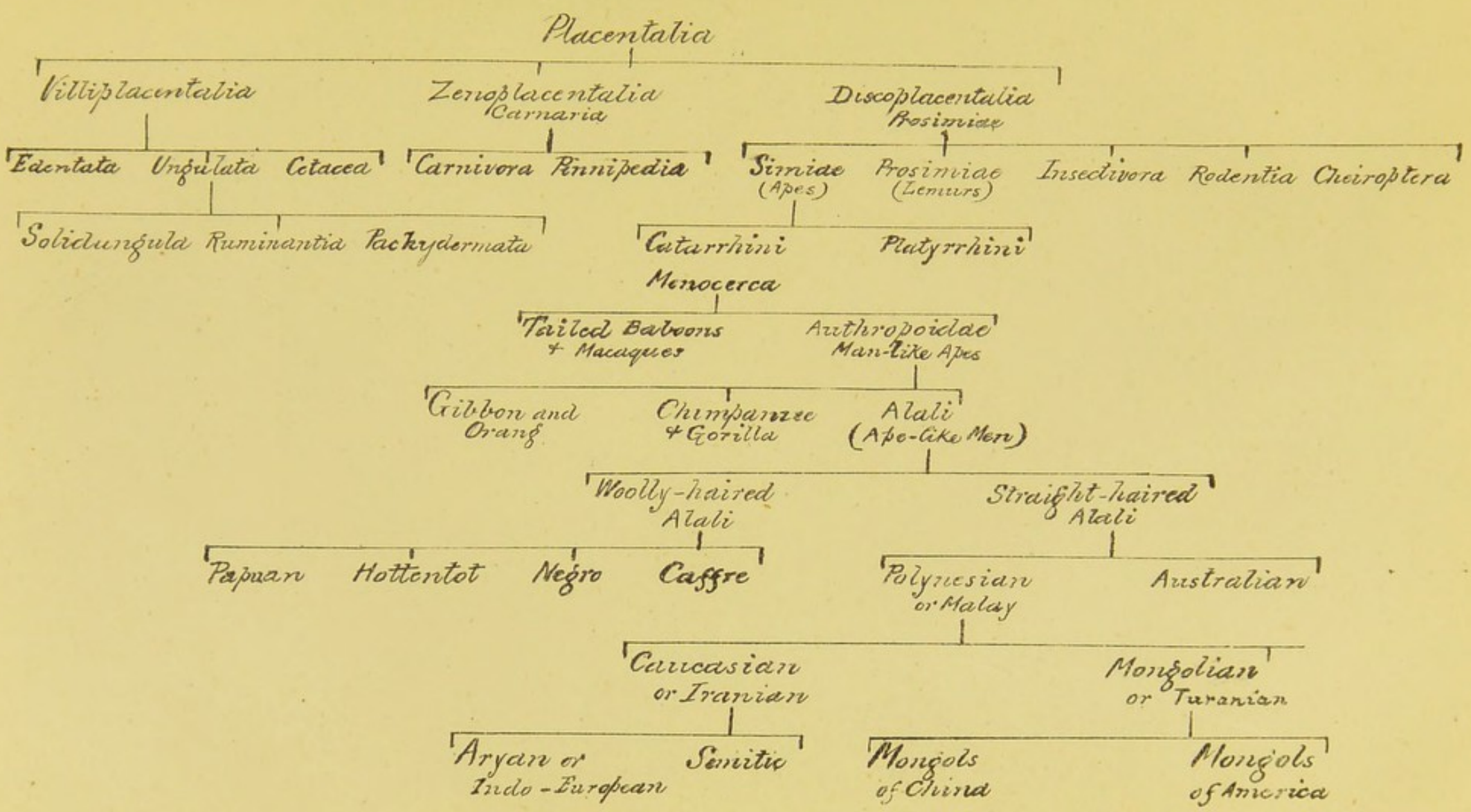
GENEALOGY OF MAN




Placentalia
Villiplacentalia
Zenoplacentalia
Carnaria
Discoplacentalia
Prosimiae
Edentata
Ungulata
Cetacea
Carnivora
Pinnipedia
Simiae
(Apes)
Prosimiae
(Lemurs)
Insectivora
Rodentia
Cheiroptera
Solidungula
Ruminantia
Pachydermata
Catarrhini
Platyrrhini
Monocerca
Tailed Baboons
+ Macaques
Anthropoidae
Man-like Apes
Gibbon and
Orang
Chimpanzee
+ Gorilla
Alali
(Ape-like Men)
Woolly-haired
Alali
Straight-haired
Alali
Papuan
Hottentot
Negro
Caffre
Polynesian
or Malay
Australian
Caucasian
or Iranian
Mongolian
or Turanian
Aryan or
Indo-European
Semitic
Mongols
of China
Mongols
of America

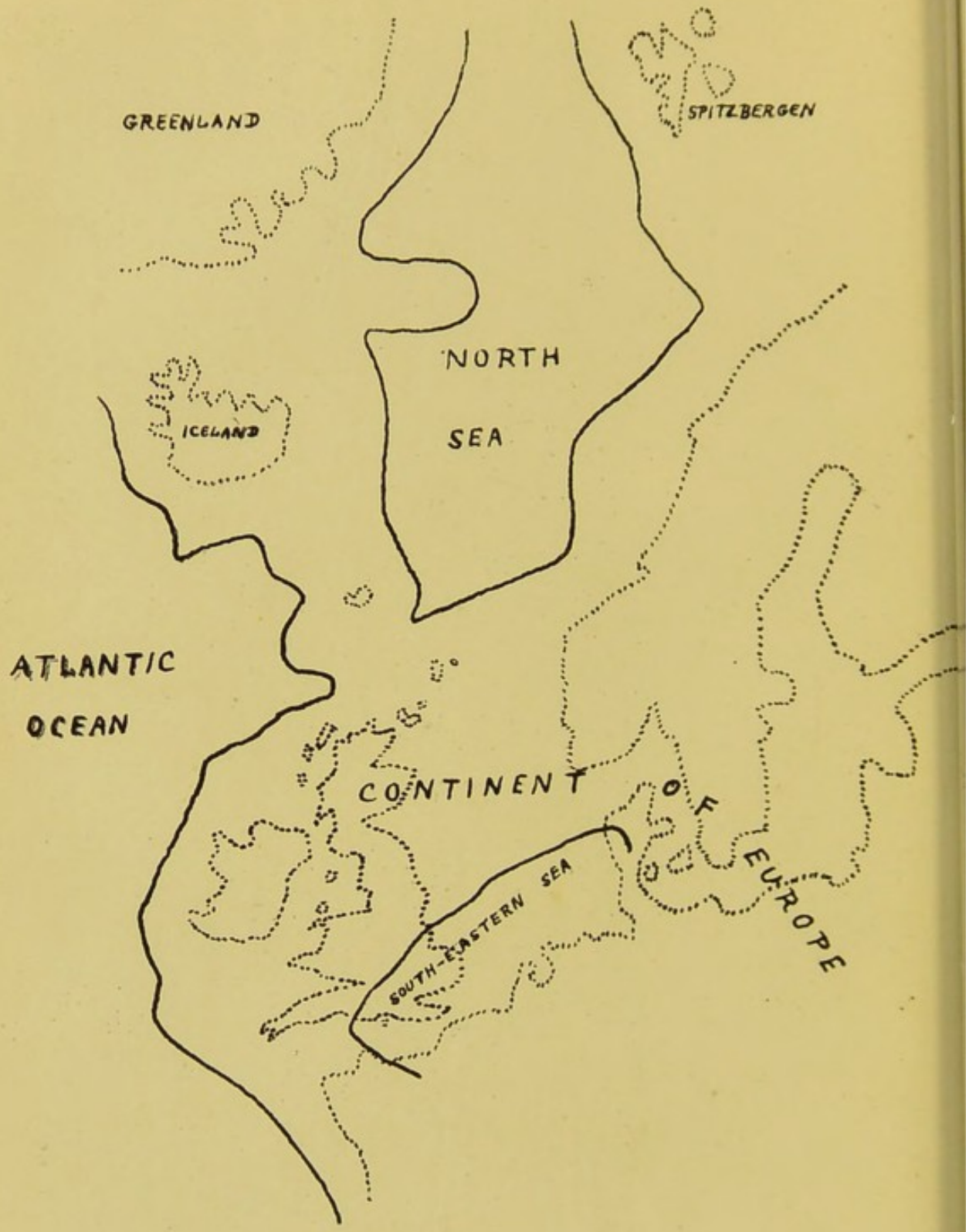
SECTION OF EARTH'S CRUST

Showing the different Geological Strata and Biological Ascent

			STRATA DEPOSITS	FOSSILS, BONES, etc FOUND	MAN'S ASCENT
TERTIARY OR KAINOZOIC	RECENT	IRON AGE	Recent Earth Deposits	Historic Era Manufacture of Iron Articles	Homo Sapiens
		BRONZE AGE	Recent Earth Deposits	Considerable advance in civilization. Manufacture of Bronze implements	Homo Cultus
	POST-PLEIOCENE QUATERNARY OR PLEISTOCENE	NEO-LITHIC	Glacial Deposits	Remains of Lake Dwellings Manufacture of Pottery	Homo Semi-ferox
		PALÆO-LITHIC	Glacial Deposits	Fossil Cave-men, Stone, bone, & horn implements. Mammoth Reindeer, Hyæna, etc.	Homo Ferox
	PLEIOCENE		White and Red Crags of Britain	Apes, Bears & Hyænas	Aluli Anthropodae
	MEIOCENE		Arctic Coal, Limestone, Sands, Clays, and Lignites	Marsupials, Squirrels Mastodon, Rhinoceros. Anthropomorphous Apes	Menocoroa Simiae
	EOCENE		Sandstone, Limestone, Sands, Clays, Marls, Lignites, Coral, Rags	Equine forms, Bats, Lemurs Marsupials	Prosimiae Placentalia
MESOZOIC OR SECONDARY	CRETACEOUS		Clays, Sands, Soft Limestones Lignites	Birds, Reptiles and Marsupials	Marsupialia
	JURASSIC OR OÖLITIC		Limestones, Coral rags, Clays, Marls, Coal Lias at base	Bird-reptiles, Several Marsupial species	Marsupialia
	TRIASSIC		Sandstones, Limestones, Clays	Gigantic Reptiles, Small Marsupials	Promammalia
PRIMARY OR PALÆOZOIC	PERMIAN		New Red Sandstones, Marls, Magnesian limestones, Conglomerates.	Reptiles	Prolamnia
	CARBON-IFEROUS		Carboniferous limestone, Coal, Ironstone, Sandstone, Clays, Shales.	Scorpions, Spiders, Beetles, Flies Amphibia	Urodela Sozobranchii
	DEVONIAN		Old Red Sandstone, Shales Coralline Limestone	Fossil land plants, Fishes, First fossil insect.	Dipnoi Selachii
	SILURIAN		Slates, Limestone, Conglomerates, Shales, Sandstones	Corals, Spiral Shells, King-Crabs, Plates & Scales of fishes Annelides (sea-worms)	Monorrhini Acrania
	CAMBRIAN		Slates, Limestone, Conglomerates	Sea-weeds, Sponges, Star-fishes Sea-lilies, Shell-fish First land plant	Nimatega Turbellaria Gastroada
	HURONIAN		Partially Metamorphosed Limestone, Sandstone, Slates, and Conglomerates	Lowly organized Molluscs	Ciliata Synamœbae Amœbae
	LAURENTIAN		Highly Metamorphosed Limestone	Fossil Foraminifera (Protozoa)	Monera (Bioplasm)
AZOIC	PLUTONIC		Molten Granite & Quartz Partially or Wholly Igneous. Base of all rocks.	No life remains	No life

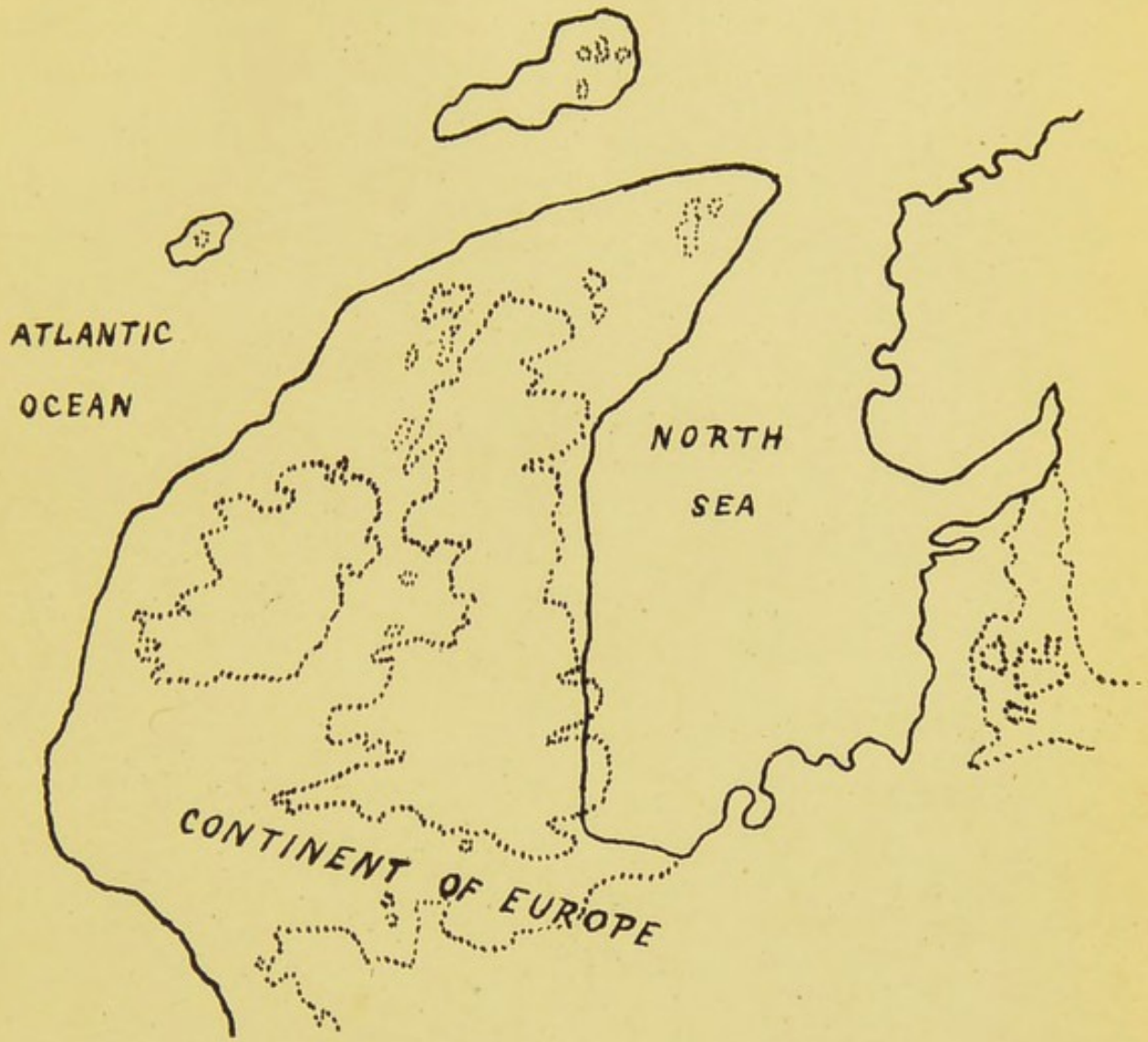
TERTIARY PERIOD IN EUROPE.

RECENT			IRON AGE & HISTORIC ERA	BRITAIN AN ISLAND
			BRONZE AGE – Homo Semi-cultus	
			CLIMATE TEMPERATE – Neolithic man	LAND SINKING
PLEISTOCENE.			CLIMATE COLD-TEMPERATE – Palæolithic man & Neolithic man	CONTINENTAL CONDITION
			CLIMATE SLIGHTLY MILDER Palæolithic and Neolithic man.	LAND RISING
			GLACIAL EPOCH OF MODERATE INTENSITY	BRITISH ARCHIPELAGO
			CLIMATE TEMPERATE – Palæolithic man	
			CLIMATE SUB-TROPICAL – Palæolithic man	
			CLIMATE TEMPERATE – Palæolithic man	
			CLIMATE COLD-TEMPERATE.	CONTINENT SINKING.
			GLACIAL EPOCH OF GREAT INTENSITY.	LAND RISING IN NORTH. ENGLAND, FRANCE, SCOTLAND AND NORWAY UNITED.
			CLIMATE COLD-TEMPERATE – Palæolithic men or Ape-men.	
PLEIOCENE	NEWER	WEYBOURNE SANDS	CLIMATE COLD-TEMPERATE. Existence of Cromer Forest Palæolithic men or Ape-men.	
		NORWICH CRAG	CLIMATE WARM-TEMPERATE. Sub-tropical fauna & flora.	
	OLDER	RED CRAG	CLIMATE SUB-TROPICAL.	CONTINENT SINKING IN NORTH & WEST. EUROPE SEPARATED FROM AMERICA & BRITAIN FROM NORWAY, ENGLAND, IRELAND & FRANCE UNITED
		CORALLINE CRAG	Apes. Bears. Hyænas. Sub-tropical flora.	
MEIOCENE	UPPER		CLIMATE SUB-TROPICAL Antelopes. Gazelles. Tropical & Sub-tropical flora.	CONTINENT RISING ON SOUTH-EAST OF BRITAIN. DENMARK & ENGLAND UNITED.
	MIDDLE		Mastodon. Rhinoceros. Anthropomorphous Apes. Sloths. Anteaters.	
	LOWER		Placental mammals. Very few Marsupials Tropical flora.	
EOCENE	UPPER		CLIMATE TROPICAL Anchitheres. Hyænodon. Lemur. Tapir-like beasts.	EUROPO-AMERICAN CONTINENTAL CONDITION.
	MIDDLE		Lion-like Carnivora	
	LOWER		Marsupials. Reptiles. Birds.	



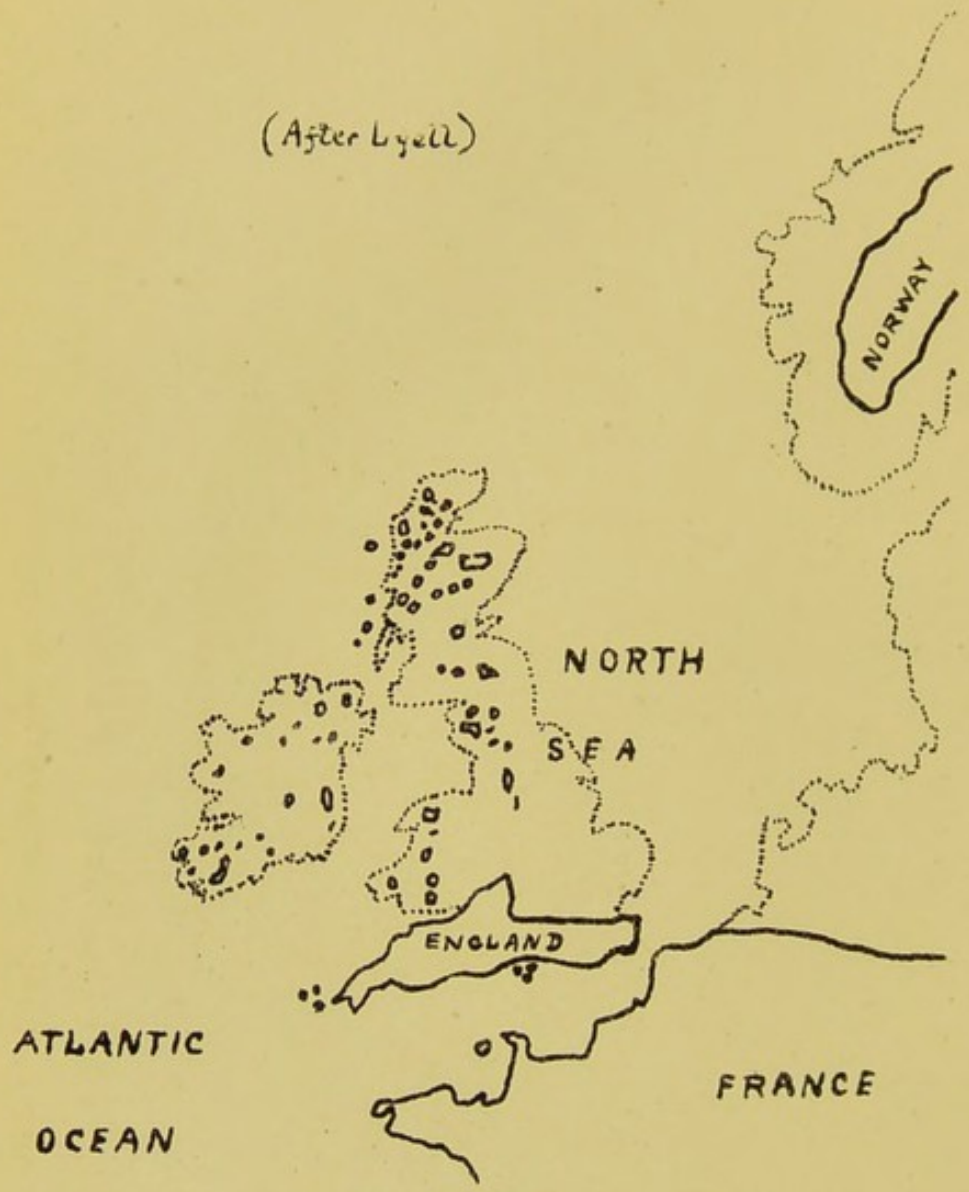
EOCENE SEAS

After Dawkins



PLEIOCENE SEAS

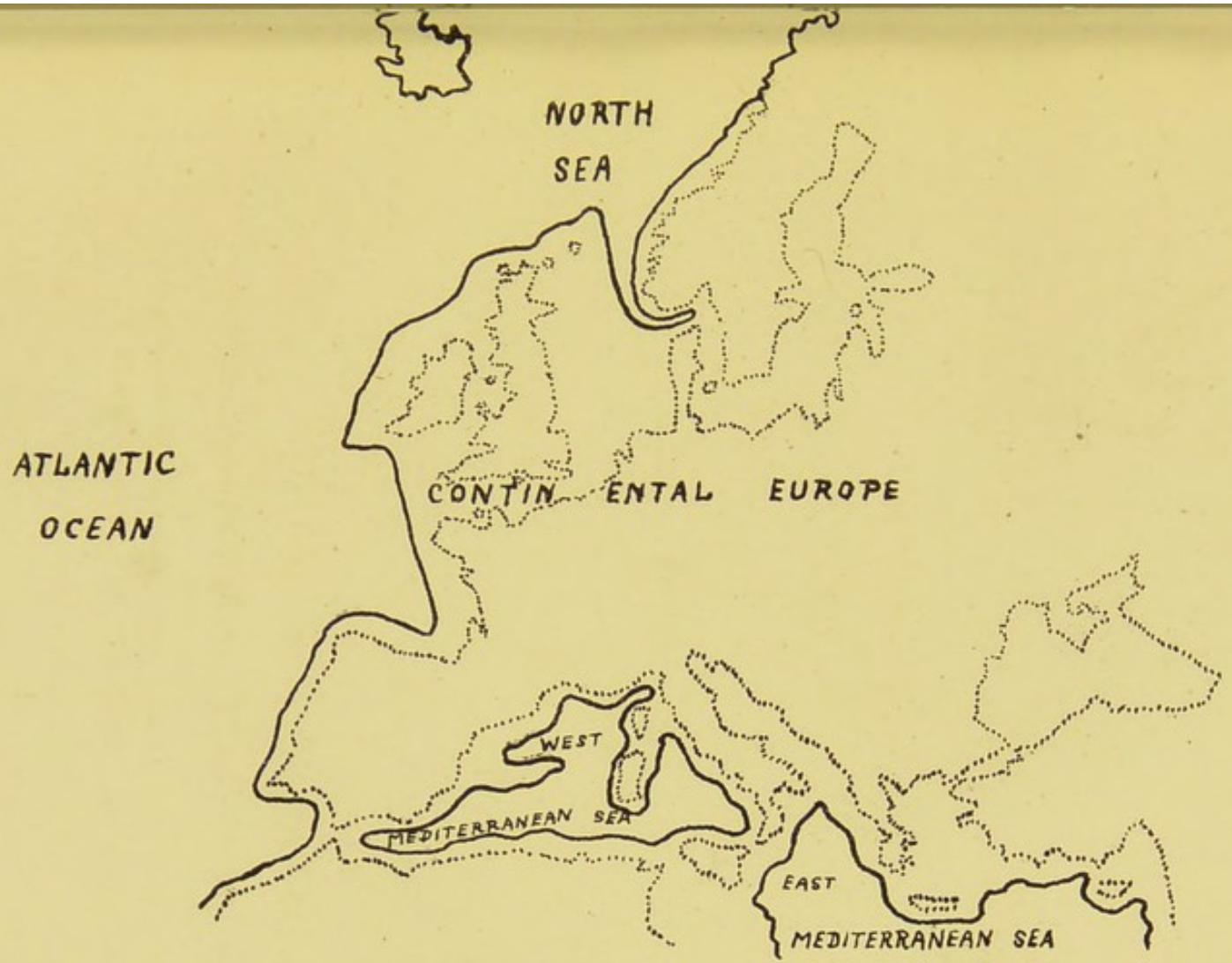
After Dawkins



PLEISTOCENE SUBMERGENCE

DURING TEMPERATE INTER-GLACIAL EPOCH

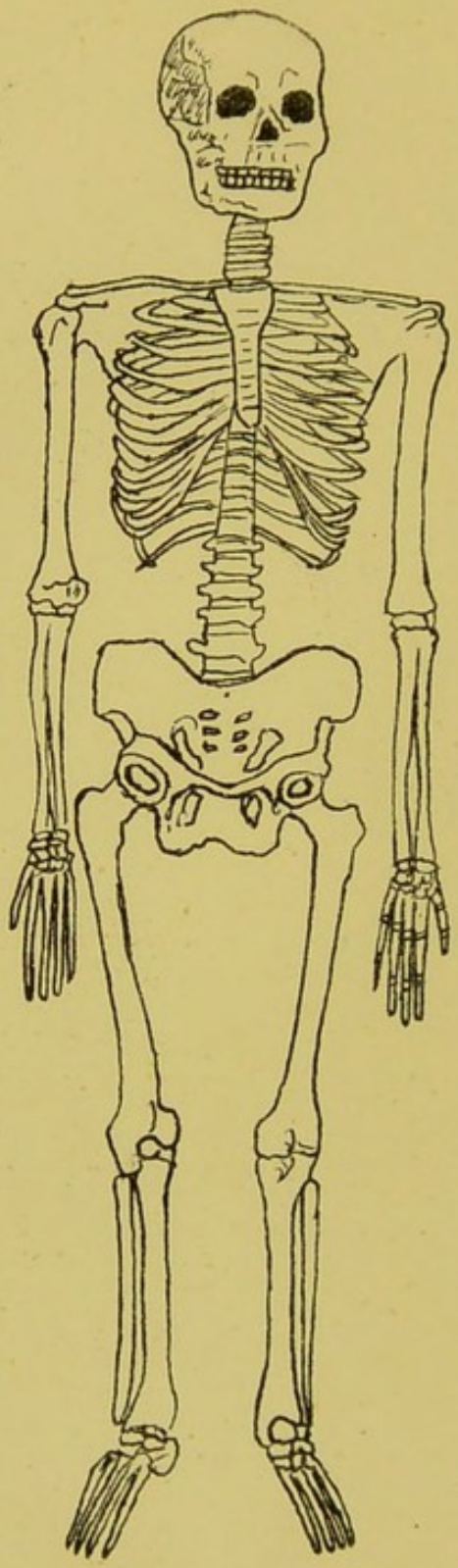
(South of England and France only submerged during the
— GLACIAL PERIOD OF SUBMERGENCE)



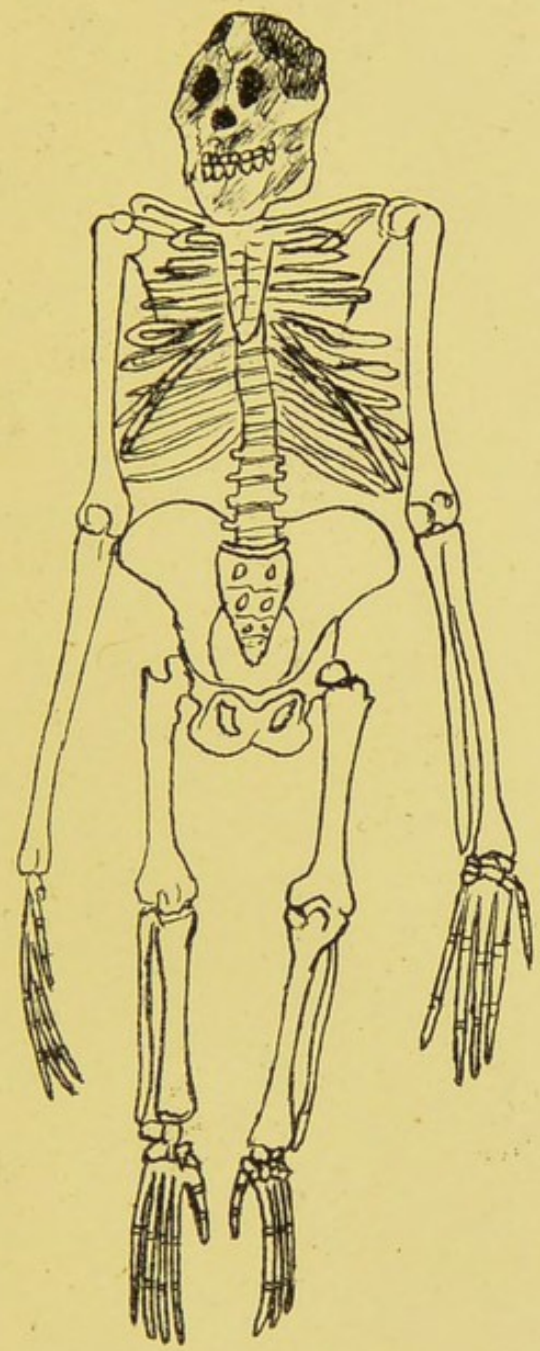
PLEISTOCENE EUROPE

DURING POST-GLACIAL CONTINENTAL CONDITION

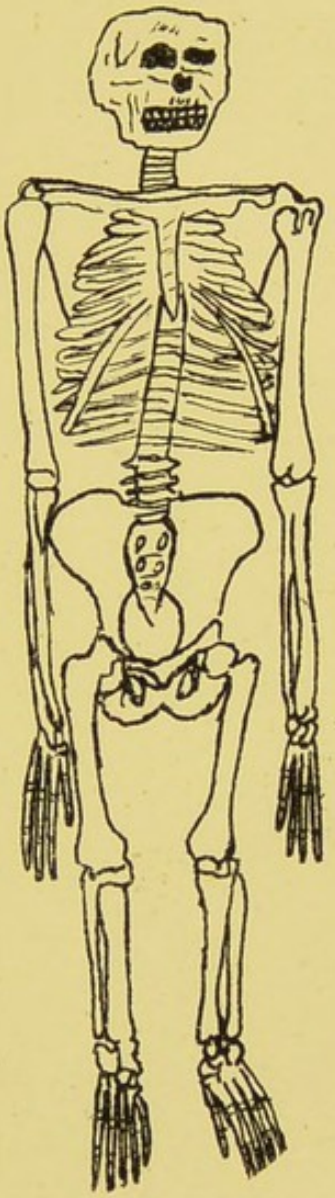
After Dawkins



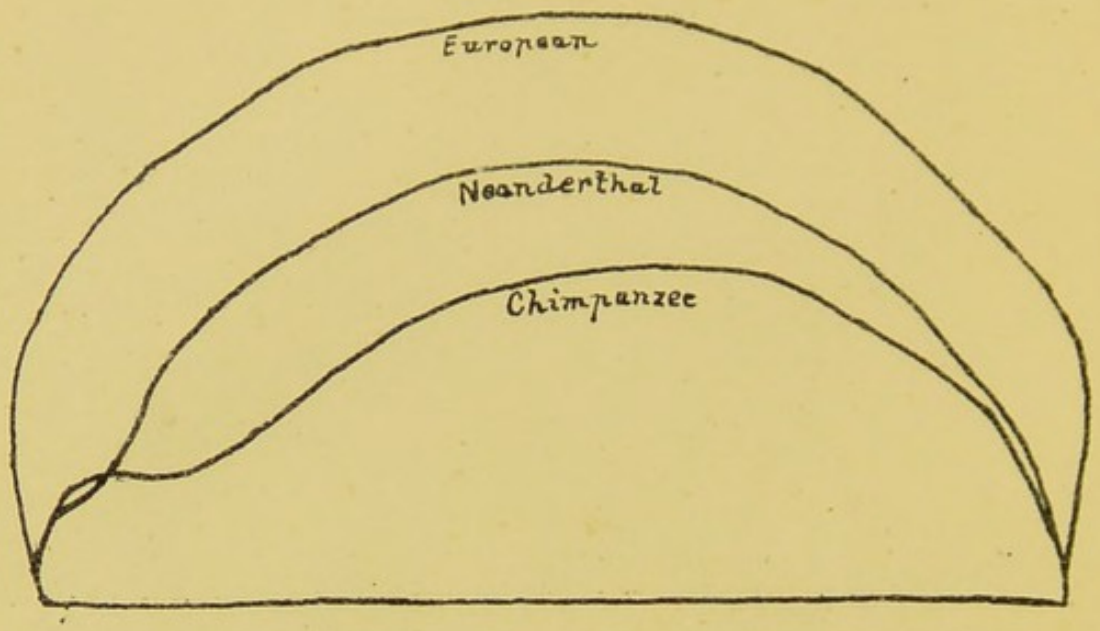
SKELETON OF MAN



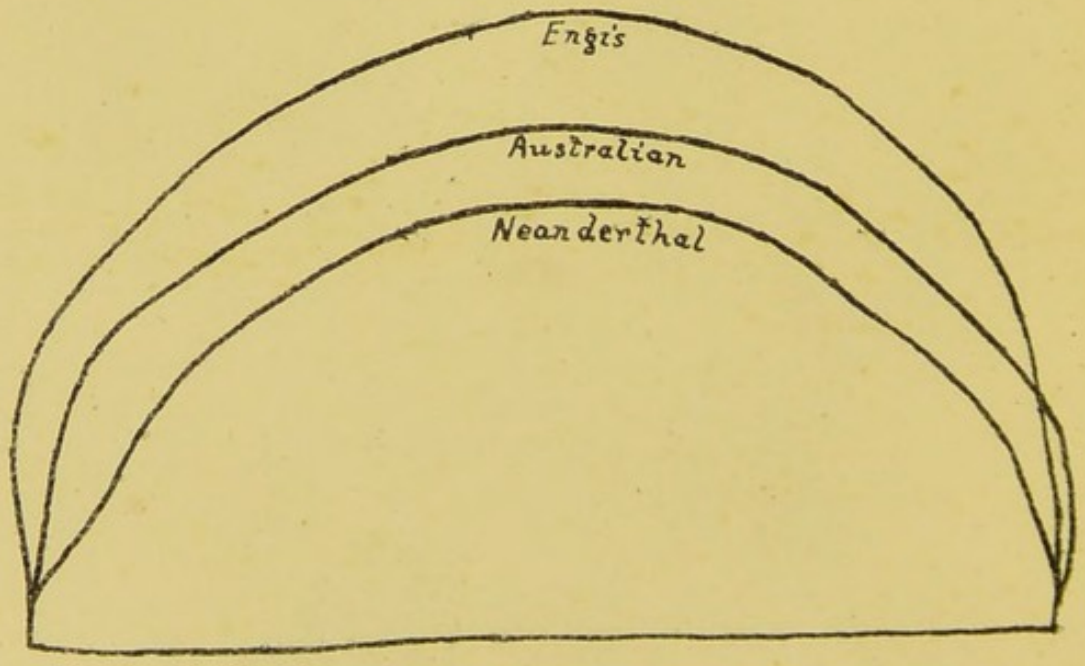
SKELETON OF GORILLA



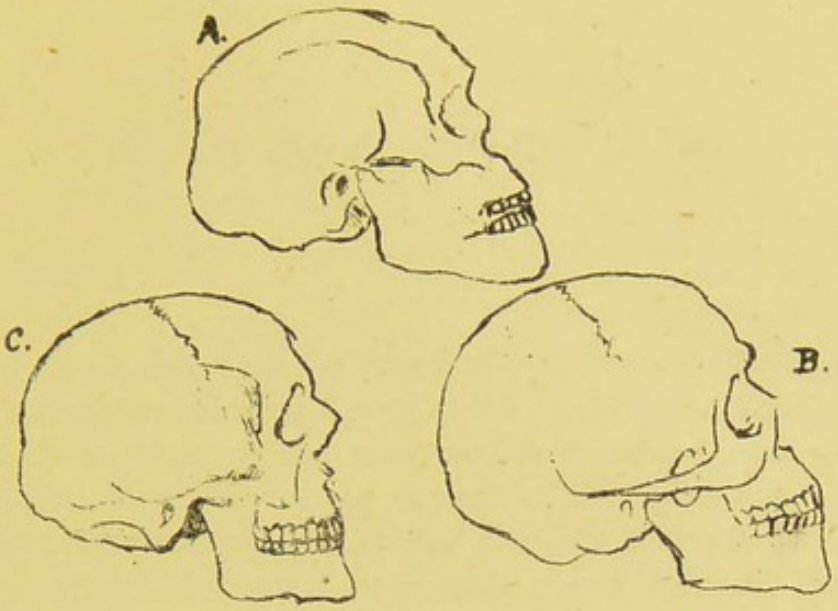
SKELETON OF CHIMPANZEE



Outlines of the skulls of a Chimpanzee, the Neanderthal man, and a modern European. After Lyell.



Outline of the skulls of the Neanderthal man, a modern Australian, and the Engis man. After Lyell.

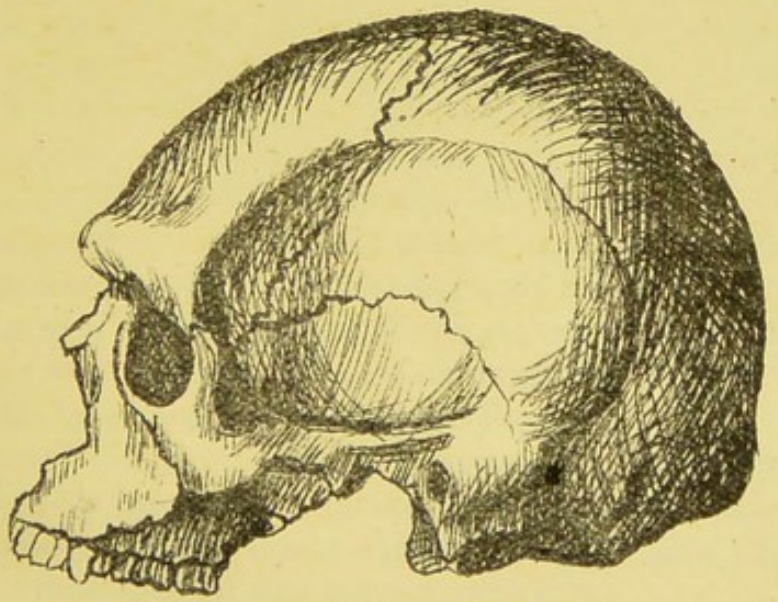


SIDE VIEW OF SKULLS (After Tyler)

A. AUSTRALIAN (PROGNATHOUS).

B. AFRICAN (PROGNATHOUS).

C. EUROPEAN (ORTHOGNATHOUS).



AUSTRALIAN TYPE OF SKULL.
(After Topinard.)

MAN'S ANTIQUITY.

WHEN we reflect on the magnitude of the pre-Christian Alexandrian libraries, as well as the magnificent appointments attaching to and lavish wealth expended upon the ancient University of the capital of the Ptolemies, we seem almost unable to realise the fact that people of education and intellect, until quite lately, believed that all this intellectual and literary magnificence had reached that pitch of excellence in the short space of less than four thousand years. In this period of time it was believed that man had so far risen in intellectual capacity from the absolutely ignorant condition of the first pair as described in Genesis as to have reached that state of mental perfection possessed by the professors in the Alexandrian, Athenian, and Sicilian schools. We can see Professor Euclid pointing out on the blackboard how, the sides of a rectilinear polygon all touching a circle, the area of the polygon is equal to the rectangle contained by the radius of the circle and the semi-perimeter of the polygon; Professor Archimedes would be explaining the theory that, if a force act upon a body, the measure of the force in absolute units is numerically equal to the time-rate of change of momentum and to the space-rate of change of kinetic energy; Professor Eratosthenes would be impressing upon his class the importance of the knowledge of the globular shape of the earth; and Professor Hipparchus would be startling his hearers by stating that he would show them how the failure of the sun to reach the same point in the same time in his annual circuit (according to the old geocentric theory) caused the vernal equinoxial sign to give place to the next zodiacal sign every 2,152 years.

Here was a galaxy of intellectual attainments indeed! With such a picture before our eyes we are calmly asked to believe that so little time as less than four thousand

years had been sufficient for the building up of this vast intellectual edifice out of such rude materials as the man and woman of Eden, when the two thousand years following have been productive of so little advancement, notwithstanding the exquisite materials upon which to work that were left for us by the Alexandrian and Athenian sages. We cannot believe so evident an absurdity to-day; and yet it is little more than half a century since the whole of Christendom accepted without any doubt whatever the old traditional statement of the Church that man had only inhabited this earth for rather less than six thousand years.

How is it, then, that we have believed the traditionary story for so long and now reject it as absurd? People have believed the story of the creation according to Genesis partly because it was dangerous to do otherwise and partly because there was no absolute proof to the contrary. In 1774, however, a German of the name of Esper made a discovery which gave the finishing touch to the mortal wound inflicted upon the Christian and Jewish superstitions by the previous adoption of the Copernican system of astronomy; and, just as Copernicus, Bruno, Kepler, Galileo, Descartes, and Newton drove the first half-dozen nails into the coffin of the Bible, so did this discovery of Esper drive into it the first of the last half-dozen, the remaining five to be subsequently added by Darwin, Huxley, Lyell, Spencer, and Carpenter. The discovery made by J. F. Esper consisted of some human bones, mingled with remains of the Northern bear and other species then unknown, which were lying in the famous cavern of Gailenreuth, in Bavaria; and this was soon followed by the discovery, in 1797, by John Frere, at Hoxne, in Suffolk, of a number of flint weapons, mixed up with bones of extinct animals, the whole being embedded in rocks. These and other similar discoveries made some sensation among scientific men, which resulted in the publication, in 1823, of Dr. Buckland's "Reliquiæ Diluvianæ," in which the author summed up all the facts then known tending to the establishment of the truth that man co-existed with animals long since extinct. Immediately after this, in 1826, Tournal, of Narbonne, gave to the world an

account of some discoveries he had made in a cave in Aude (France), where he had found bones of the bison and reindeer, cut and carved by the hand of man, together with remains of edible shell-fish, which must have been brought there by some one who dwelt there. A few years afterwards De Christol, of Montpellier, discovered human bones and fragments of pottery, mixed with the remains of the Northern bear, hyæna, and rhinoceros, in the caverns of Pondres and Souvignargues. In 1833 Schmerling found in the caverns of Engis and Enghihoul, in Belgium, two human skulls, surrounded by teeth of the rhinoceros, elephant, bear, and hyæna, on some of which were marks of human workmanship, and under which were flint knives and arrow-heads. Two years afterwards Joly, a Montpellier professor, found in the cave of Nabrigas (Lozère) the skull of a cave-bear, having upon it marks made by an arrow, beside which were scattered fragments of pottery bearing the imprints of human fingers. Following upon these discoveries were those made in 1842 by Godwin Austen at Kent's Cavern, near Torquay, consisting of animal remains and results of man's handiwork; and those made in 1844, by Lund, in the caves of Brazil, consisting of skeletons of thirty human beings, an ape, various carnivora, rodents, pachyderms, sloths, etc. Kent's Cavern, in 1847, was again the spot to which all eyes were turned; for there McEnery had found, under a layer of stalagmite, the remains of men and extinct animals. This remarkable discovery was followed, in the same year, by the appearance of a work by Boucher de Perthes, of Abbeville, in which he described the flint tools, etc., found in the excavations made there and in the Somme valley as far as Amiens. In 1857 the celebrated Neanderthal skull was discovered; and in 1858 Prestwich, Falconer, and Pengelly (Englishmen) found more flint implements in the lower strata of the Baumann cave, in the Hartz mountains, at the same time that Gosse *fils* obtained from the sand-pits of Grenelle various flint implements and bones of the mammoth; while in the following year Fontan discovered in the cave of Massat (Ariége) utensils, human teeth, and bones of the cave-bear, hyæna, and cave-lion. Near

Bedford, about the same time, Wyatt found, in the gravel-beds, flints similar to those found at Abbeville, and bones of the mammoth, rhinoceros, hippopotamus, ox, horse, and deer; which discovery was soon followed by that of the celebrated human burial place at Aurignac, by Lartet, in 1860, in which were found human remains, together with bones of the bear, reindeer, bison, hyæna, wolf, mammoth, and rhinoceros, a number of flint and horn implements, and the remaining ashes of fires. The world was at last induced to give some heed to the new cry of man's extreme antiquity when Boucher de Perthes, of Abbeville, in 1863, discovered at Moulin-Quignon, at a depth of fifteen feet, in a virgin argilo-ferruginous bed belonging to the later Pleiocene or early Pleistocene period, the half of a human lower jaw-bone (which had belonged to an aged person of small stature), covered with an earthy crust, by the side of which lay a flint hatchet, covered with the same kind of crust; and not far from which were also buried, in the same bed, two mammoths' teeth. After this discovery scientific men generally subscribed to the new theory of the antiquity of man, and all seemed eager to pursue their investigations without delay, the result being that we are now receiving, almost day by day, fresh evidence on the subject, and hope soon to arrive at a tolerably accurate conclusion as to the earliest date of man's appearance upon earth.

Let us now look more closely at the discoveries made in the various caves referred to above, and also see what advances had been made by geologists in other directions during the same period, as well as what amount of progress has been made during the last twenty years. Dr. Schmerling, the Belgian geologist and comparative anatomist, after exploring the Engis and other caves in the province of Liège, published an illustrated work, giving the results of his investigations, which were highly interesting, and contributed largely to the establishment of the theory of man's antiquity. In these caves Schmerling found the bones of the cave-bear, hyæna, elephant, and rhinoceros, together with human bones, none of which gave any evidence of having been gnawed, from which circumstance it was inferred that these caves

had not been the dwelling-places of wild beasts; and the fact that the bones were scattered about without any order having been observed in their distribution pointed to the conclusion that the caves had not been used as burying-places. Probably, therefore, these remains had been washed into the caves from time to time, and had gradually become covered with deposit, and thus protected and preserved. There were no complete skeletons found; but in the Engis cave were discovered the remains of at least three human beings, the skull of one being embedded by the side of a mammoth's tooth, and in such a state of disintegration that it fell to pieces on being moved; while the skull of another, an adult, was buried, five feet deep, by the side of a tooth of a rhinoceros, several bones of a horse, and some reindeer bones. Besides the bones, there were also discovered some rude flint implements, a polished bone needle, and other products of man's industry, all embedded in the same layer as the bones. It follows from these facts that man lived on the banks of the Meuse at the same time as the rhinoceros, mammoth, hyæna, and cave-bear, extinct animals of the Pleiocene and early Pleistocene era.

Not far from these caves are those of the Lesse Valley, in which Dupont discovered, in 1864, three different layers of human and other remains, the lowest of which contained the bones of the mammoth, rhinoceros, and other extinct animals, together with flint instruments of the rudest type, instruments of reindeer horn, and a human lower jaw with a marked resemblance to the lower jaw of the higher apes. Another discovery at some little distance away from these caves was made in 1857 in what is called the Neanderthal Cave, in the valley of the Düssel, between Düsseldorf and Elberfeld, which is important, not so much as an indication of the length of time that man has lived on the earth, as of the close resemblance existing between the skulls of human beings in the early Pleistocene era and the skulls of apes. The discovery consisted of a human skull and a number of human bones, together with the bones of the rhinoceros, which latter were subsequently unearthed. The skull was of such a character as to raise the question of

whether it was human or not, the forehead being narrow and very low and the projection of the supra-orbital ridges enormously great. The long bones of the skeleton agreed with those of men of the present day in respect to length, but were of extraordinary thickness, and the ridges for the attachment of muscles were developed in an unusual degree, showing that the individual was possessed of great muscular strength, especially in the thoracic neighbourhood. Drs. Schaafhausen and Fuhlrott pointed out that the depression of the forehead was not due to any artificial pressure, as the whole skull was symmetrical, and that the individual must have been distinguished by an extraordinarily small cerebral development as well as uncommon corporeal strength. Professor Huxley considers this Neanderthal skull to be the most ape-like one he ever beheld, and Busk, a great anthority, gives valuable reasons for supposing it to be the skull of an individual occupying a position midway between the man and the gorilla or chimpanzee. Huxley has carefully compared the Engis and Neanderthal skulls, and his remarks upon them are given in their entirety in Lyell's "Antiquity of Man." From these remarks we gather that the Engis skull was dolichocephalic in form, extreme length 7.7 inches, extreme breadth not more than 5.25 inches, forehead well arched, superciliary prominences well but not abnormally developed, horizontal circumference 20½ inches, longitudinal arc from nasal spine to occipital protuberance 13¾ inches, transverse arc from one auditory foramen to the other, across the middle of the sagittal suture, 13 inches. The Neanderthal skull is so different from the Engis skull that Huxley says "it [Neanderthal] might well be supposed to belong to a distinct race of mankind." It is 8 inches in extreme length, 5.75 inches in breadth, and only 3.4 inches from the glabello-occipital line to the vertex; the longitudinal arc is 12 inches, and the transverse arc probably about 10¼ inches, but, owing to incompleteness of temporal bones, this could not be correctly ascertained; the horizontal circumference is 23 inches, which high figure is due to the vast development of the superciliary ridges; and the sagittal suture, notwithstanding the great length of the skull, only 4½

inches. Huxley sums up his examination of the Neanderthal skull in these words: "There can be no doubt that, as Professor Schaafhausen and Mr. Busk have stated, this skull is the most brutal of all known human skulls, resembling those of the apes, not only in the prodigious development of the superciliary prominences and the forward extension of the orbits, but still more in the depressed form of the brain-case, in the straightness of the squamosal suture, and in the complete retreat of the occiput forward and upward from the superior occipital ridges;" and he then proceeds to clearly show that the skull could not have belonged to an idiot. On the whole, the Engis skull more clearly approaches the Caucasian type, while the Neanderthal differs entirely from all known human skulls, being more nearly allied to the chimpanzee than to the human. Both these skulls belonged to individuals who lived in the early Pleistocene era, the Engis being probably the older of the two, and yet the Engis is the most like the modern European skull, which tells us plainly that in those remote times there were existing in Belgium and the surrounding districts two different races of men, one highly advanced in brain evolution and the other in a wretchedly low condition of intellectual development. The Neanderthal skull probably formed part of an individual belonging to the tail-end of a semi-human race, while the Engis skull, in all probability, belonged to an oriental immigrant belonging to a more advanced race. It must be always remembered that scientific men have long since admitted the truth of the theory that the differences in character between the brain of the highest races of men and that of the lowest, though less in degree, are of the same order as those which separate the human from the ape brain, the same rule holding good in regard to the shape of the skull.

The discoveries made in Kent's Cavern, in the year 1842 and again in 1847, led to a thorough investigation of the series of galleries forming the now celebrated Brixham Caves, near Torquay, and as early as 1859 the labours of the explorers were rewarded by the discovery of a number of flint implements in the cave-earth or loam, *underneath* the layer of stalagmite, which were the

work of men living in Palæolithic times, prior to the existence of the reindeer, whose antlers were found deposited *in* the layer of stalagmite. Previous to this time, when McEnery, in 1826, examined Kent's Cavern, he had stated that he had found several teeth of *Ursus cultridens*, a huge carnivore belonging to Tertiary formations, but now extinct; and as this monster was first known in Meiocene deposits in France, but had never been traced in any cavern or fluviatile Pleistocene deposits, although it had occurred in Pleiocene formations, considerable excitement was caused on the score that the flint implements lately found might possibly have belonged to Meiocene, or at latest early Pleiocene men. Further investigations were accordingly commenced for the purpose of solving this problem, the explorations being under the superintendence of Messrs. Vivian and Pengelley; and in 1872 they at last came upon a fine incisor of *Ursus cultridens* in the uppermost part of the cave-earth, which settled the point as to man's existence at the same time with the extinct bear in England. The Kent's Cavern deposits are as follows:—1. Limestone. 2. Black mould, containing articles of mediæval, Romano-British, and pre-Roman date. 3. Stalagmite floor, from 16 to 20 inches thick, containing a human jaw and remains of extinct animals. 4. Black earth, containing charcoal and other evidence of fire, and also bone and flint instruments. 5. Red cave-earth, containing Palæolithic implements and bones and teeth of extinct animals, such as cave-lion, mammoth, rhinoceros, and hyæna, and including the tooth of the *Ursus cultridens*, or *Machairodus latidens*. 6. Second stalagmite floor, from 3 to 12 feet thick, covering bones of bears only. 7. Dark red sandy loam, containing bones of bears, three flint implements, and one flint chip. The fact of the *Ursus cultridens* being contemporary in England with man is of enormous interest to geologists and anthropologists, for it places the date of Palæolithic man as far back as the Pleiocene age, instead of, as heretofore, in the Pleistocene.

The caves of the Dordogne Valley in south-western France have supplied us with some very good relics of a very remote period. They are situated in rocks of Cre-

taceous age, and form shelters in which ancient huntsmen used to find dwelling-places, leaving behind them refuse-heaps and instruments of various kinds. In the Vezère Caves, which are included in the Dordogne series, there is one of very ancient date, Le Moustier, in which is a bed of sand having both above and below floors of a similar character, containing charcoal, flint instruments, and other remains. The depth of this sandy bed is about 10 inches, having the appearance of a river deposit; and, although many flint instruments have been found in it of a more ancient date than those unearthed in the other caves, yet no worked bone instruments have been discovered. In another cave, the Langerie, bronze and polished stone objects have been found, together with various kinds of pottery, below which, and under masses of fallen rock, covered with Palæolithic flints and sculptured bones and antlers of reindeer, a human skeleton was discovered lying under a block of stone. In another cave, La Madeleine, was found a mammoth tusk, on which was rudely carved a picture of the animal itself, proving incontestably that cave-men lived here in mammoth times. In the Mentone cave Dr. Rivière, in 1872, suddenly came upon the bones of a human foot, which caused him to make a very careful examination of the deposit, the result being that he unearthed an entire human skeleton at a depth of 20 feet, surrounded by a large number of unpolished flint flakes and scrapers, and a fragment of a skewer, about six inches long. No metal, pottery, or polished flint was found; but bones of extinct mammals were scattered about, thus suggesting a remote Palæolithic antiquity. The skeleton is 5 feet 9 inches high, the skull dolichocephalic, forehead narrow, temple flattened, and facial angle measuring 80 to 85 degrees; the teeth were worn flat by eating hard food, and the long bones are strong and flattened.

No human bones have as yet been discovered in the deposit of the Somme valley, where so many Palæolithic flints have been found; but in the valley of the Seine, at Clichy, Messrs. Bertrand and Reboux found, in 1868, portions of human skeletons in the same beds where Palæolithic implements had been embedded. These bones were found at a depth of seventeen feet, and in-

cluded a female skull of very inferior type, having enormously thick frontal bone and a low, narrow roof, slanting from before backwards. A very good specimen of human fossil is that known as the "Denise Fossil Man," comprising the remains of more than one skeleton found in a volcanic breccia near Le Puy-en-Velay, in Central France. These bones have been very carefully examined by the members of the French Scientific Congress, as also the deposit in which they were found, and the opinion arrived at is that the fossils are genuine and their age early Pleistocene. Another most interesting specimen of ancient human remains is the skeleton found buried under four Cypress forests, superimposed one upon the other, in the delta of the Mississippi, near New Orleans, at a depth of sixteen feet. Dr. Dowler ascribes to this skeleton an antiquity of at least 50,000 years, reckoning by the minimum length of time that must have elapsed during the formation of the deposits found and the sinking of the four successive forest beds. In another part of the same delta, near Natchez, a human bone, *os innominatum*, accompanied by bones of the mastodon and megalonyx, was washed out of what is believed to be a still more ancient alluvial deposit. Dr. Dickeson, in whose possession the said bone is now, states that it was buried at a depth of thirty feet, and geologists agree that its date is very early, some maintaining that it is probably of a higher antiquity than any yet discovered.

From these discoveries it is abundantly evident that man existed on the earth contemporaneously with the mastodon and other extinct mammals belonging to the Pleiocene and early Pleistocene eras. There are, however, people who stoutly deny that this can be so—at any rate, as regards Northern and Central Europe—and who rank the discoveries at Moulin Quignon, Engis, Kent's Cavern, etc., with late Pleistocene remains. They maintain that the beds in which these relics were found could not have been of Pleiocene or early Pleistocene formation, inasmuch as they lie *above* the till and boulder-clay which form the glacial deposits of the time when Europe was an Arctic region—that is to say, of late Pleistocene times. Therefore, they say, man's earliest existence in Europe was post-glacial or late

Pleistocene. But while the fact of the human remains having been discovered above the boulder-clay appears to point to a post-glacial date, still there is confronting us the perplexing anomaly of the contemporary existence of extinct mammals belonging to a tropical fauna, which, if we accept this theory, involves the necessity of admitting that a tropical climate followed the last glacial epoch—a condition of things that we know never existed at all. The fact is there have been more periods of glaciation than one, each being followed by the deposition of boulder-clays; and between the periods of intense Arctic cold there were intervals of tropical or sub-tropical heat, when mammals belonging to and requiring a tropical climate ventured as far north as the north of England, to become extinct when the period of glaciation supervened. The last glacial period, we know, extended its area of influence as far as the high peaks of Switzerland and Northern Italy, completely overwhelming the whole of Northern Europe as far south as the latitude of 45°, and the whole of North America as far south as the latitude of 40°; since when there has been a gradual diminution of cold until the present temperate climate supervened. Now, if it can be positively ascertained that all the boulder-clays found in England and Northern Europe were deposited during and immediately after this last glacial period, the date of man's first appearance in those districts, as far as we have as yet any evidence, must be post-glacial; but in such a case it would have been impossible that a tropical fauna and flora could have existed in the same localities, whereas their remains have been abundantly found lying side by side with the remains of Palæolithic man. The conclusion we must draw is that the boulder-clays found below the remains of Palæolithic man could not have been deposited after the last period of glaciation, but must have followed some prior glacial condition, and that man existed in England and Northern Europe contemporaneously with extinct mammalia during interglacial or pre-glacial times, when the climate of England was tropical or sub-tropical—that is to say, in middle Pleistocene or late Pleiocene times. If man really existed in England in Pleiocene times, in favour of

which view there appears to be strong evidence, he would have been in all probability the companion of the extinct tropical mammalia found deposited in the Cromer Forest beds, and some of which belonged to Meiocene times. This forest was in existence at the close of the Pleiocene era, and stretched from Cromer far away into what is now the German Ocean, uniting Norfolk and Suffolk to Holland and Belgium; but soon after the commencement of the Pleistocene period the North Sea gradually swept over the old continent between Britain on the west and Sweden, Denmark, and the Netherlands on the east, thus converting the old forest at Cromer into the bed of the ocean, where the stumps of the trees may now be seen embedded in deposit at very low tide. Immediately after the disappearance of this forest the first period of glaciation commenced, from which moment until the close of the glacial periods the alternations in temperature and surface level were frequent and of enormous magnitude, the correct sequence of which changes we have as yet no proper conception.

If we go back to the commencement of the Tertiary great division of the geological periods, we shall find that, at the beginning of the Eocene deposits, the Secondary cretaceous rocks had been upheaved from the bottom of the sea, and had become the dry ground of a large continent, of which the British Islands formed a part; so that Eocene fauna and flora in England had free communication with continental life. The relative positions of land and water during this first Tertiary period were as follows: The great continent spread from North America to Europe, uniting Canada, Greenland, Iceland, Faroes, Shetlands, Orkneys, Ireland, and Britain (except south-east portion), with Scandinavia and Spitzbergen on the north-east, and with France (Brittany) and Spain on the south. There were three seas—the North Sea, which, like a wedge with its point downwards, separated Greenland, Iceland, and Faroes from Spitzbergen and Scandinavia; the South-Eastern Sea, which stretched from the top of Denmark to Boston in Lincolnshire, thence to Lyme Regis in Dorsetshire, and on to Cherbourg, covering the whole of the east and south-east of England; and the Atlantic, which was separated

from the North Sea by Iceland, Faroes, and intermediate lands, and from the South-Eastern Sea by the British Islands, Western France, and intermediate lands. These Eocene seas teemed with fish now only found in more Southern latitudes; while the inland lakes and rivers abounded with reptilian life. On the land tropical flora and fauna flourished, among the former being palms, cypresses, and giant cacti, and among the latter, in Lower Eocene times, large numbers of marsupial species, in the Middle Eocene also lion-like carnivora, and in Upper Eocene tapir-like animals, herds of Anchitheres (ancestors of the horse), Hyænodon (ancestors of hyæna), and Lemurs. The Miocene period opened with a lower temperature than that of the Eocene, and with a considerable difference of surface level in Denmark and on the South of England, the land having been upheaved to such an extent as to leave no part of the country under water, uniting Yorkshire with Denmark, and dividing the South-Eastern Sea into two portions, the Northern one stretching from Schleswig as far as a few miles from the present Lincolnshire coast and then back to the present mouth of the Scheldt; and the latter stretching from Boulogne-sur-Mer to Hastings and Portland Bill, and back to Cherbourg. Otherwise the relationship between land and water was much the same as in Eocene times. The climate of the Meiocene period was subtropical, and in the lower strata were found placental mammals, but few marsupials; in the middle beds remains of the mastodon, rhinoceros, anthropomorphous apes, sloths, and ant-eaters; and in the upper layers antelopes and gazelles; but no mammalian species in any Meiocene deposit has continued to present times all having become extinct. When we arrive at the Pleiocene age we have quite a different state of things; the Atlantic and North Seas gradually united together, thus separating Europe from Faroes, Iceland, Greenland, and North America; and on the east of Britain the North Sea slowly descended as far as the present mouth of the Thames, thus separating Britain from Norway, Denmark, and the Netherlands; while the two Southern seas disappeared altogether, leaving a huge continent, the borders of which stretched from the

present west coast of Norway to Denmark, the Netherlands, across to Essex, central Norfolk (east Norfolk and Suffolk being part of North Sea), and up to the Shetlands, at which point a turn was made south to a few miles west of present west coast of Ireland, and thence southward to a few miles west of present coast of Brittany, in France, thus leaving the British Isles, France, and the rest of Europe as one large continent. To accomplish these enormous changes, a very long time was required, during which the climate was gradually becoming more temperate, being in older Pleiocene times sub-tropical and in newer Pleiocene warm-temperate; while the fauna and flora gradually became less tropical in kind. The older Pleiocene deposits are divided into coralline crag and reg crag, while the newer Pleiocene consist of Norwich crags and Weybourne sands, on a level with which latter was the Cromer forest, submerged by the North Sea during the earlier Pleistocene period.

At this point commence those enormous alterations in the surface level and climate of this part of the world which produced such extraordinary results, and during which man made his first appearance in Britain. At the very commencement of the Pleistocene era the temperature in Britain was lowered to such an extent as to produce a sudden disappearance of the semi-tropical fauna and flora: the land had reached the high elevation of 500 feet above the present level, joining Scotland and Scandinavia, and there had appeared in the North Sea large blocks of ice, which rapidly increased in size and quantity, and continually pushed farther south, until at length, after a long lapse of time, the whole of Northern Europe, Asia, and America as far as the latitude of about 45° became like a huge ice-house, the Arctic cold driving all life before it to a more southern latitude, those forms which had lived in Britain during Meiocene and Pleiocene times being the first to disappear on the earliest sign of the approaching cold, and the Arctic flora and fauna which took their place being afterwards compelled also to move southward, owing to the intense severity of the glaciation.

When this state of things had lasted a very considerable

time the climate became milder, the melting ice deposited its boulder clay, and the high continent commenced to sink again to its former level, during which gradual submergence the climate became still warmer, until it at length reached a more than temperate mildness, at one time being almost tropical. Still the land continued to sink, and this submergence lasted until the British part of the great continent had become a large archipelago of small islands, the surface of the land being upwards of one thousand feet below the present level. It has been calculated that such a submergence would require at the least 88,000 years to be completed; so that a general idea may be formed of the enormous periods of time occupied by these glacial and inter-glacial epochs. While the British archipelago existed, another change of climate took place, resulting in another glacial period, but probably not of such intensity as the previous one. At this period the upper boulder clay was deposited in the sea, to be afterwards upheaved above the sea level in Yorkshire and other places. After a long continuance of this glaciation the land commenced to rise again and the climate to improve, until, after a period of about 136,000 years (according to careful computation), there was produced another continental condition, the ground reaching about 600 feet higher than now, and the climate becoming temperate once more. England, Ireland, Scotland, Scandinavia, Denmark, the Netherlands, France, and Spain once again formed a mighty continent, the climate of which was cold-temperate, becoming milder year by year, and the elevation of which was gradually declining, as it has continued to do until the present time, the British islands slowly becoming once more separated from the continent of Europe. During the last temperate continental condition Palæolithic and Neolithic man lived in Britain, as is clearly proved by the evidence brought forward by various authors in support of the contention; but, as we have seen, Palæolithic man's remains discovered in the various deposits were often in the company of the bones of extinct mammals belonging to a tropical fauna, which species could not have existed in Britain with such a climate as that which followed the last period of glacia-

tion, but must have lived either in pre-glacial times, or, in other words, at the end of Pleiocene or very beginning of Pleistocene times, or else in inter-glacial or mid-Pleistocene times; and whichever alternative be adopted we are bound to fix the date of the Palæolithic remains at the same period. To fix their date in the very earliest of Pleistocene, or latest of Pleiocene times, would give them an antiquity of nearly 300,000 years; to fix it in mid-Pleistocene times, during the temperate or inter-glacial period of submergence, would give them an antiquity of upwards of 170,000 years; and to fix it in post-glacial times would give them an antiquity of probably 70,000 or 80,000 years at most. The inter-glacial theory would, on the whole, appear most likely to be the correct one, were it not for the fact that, during the inter-glacial period, this country was partially submerged, which would probably have prevented any communication in those times between the islands and the mainland. We must, however, not forget that the great submergence commenced during the first period of glaciation, and did not cease until the second period had been reached, so that the inter-glacial period of warmth would take place when England and Scotland were but little different from now in their relationship to the continent, and long before the archipelago was formed. Whether it would have been possible under these conditions for Palæolithic man to cross from the continent to the British islands we cannot say; but the probability is that the distance to travel by water would have been far too great in such early times; in which case we have no alternative but to place the date of man's earliest existence in England at the latest Pleiocene age, as indeed we are compelled to do by the fact that Palæolithic implements have been found in Kent's cavern side by side with teeth of the extinct bear of that period, as well as by the discoveries made in the Engis and other caves.

In Southern Europe and the Southern States of North America the glacial epoch had little effect, so that man's age upon the earth in those districts will be better calculated than it can ever be here or in France and Belgium; and it will not be surprising if we learn before long that man lived in the districts surrounding the Mediterranean

Sea in early Pleiocene times. This sea, it must be recollected, was almost dried up during the early and middle Pleistocene periods, and there was no communication between it and the Atlantic Ocean, so that Europe was connected both on the east and west with Africa, and was also one continuous continent with Asia, there being then no Black Sea and no Caspian Sea. The probability, therefore, is that man first became a rational being, parting with his ape-like characteristics, somewhere in Southern Asia or Northern Africa, or, more probably still, in the now submerged continent of Lemuria, which once joined China, India, and Africa in one continental system; after which he emigrated in different directions, finding his way north-westwards over the European continent as far as the very limit of the Franco-British continental system. At what period man first existed in the districts around the Mexican Gulf it is at present impossible to say; but the skull found in the Mississippi beds is calculated to be at least 50,000 years old, and by some the date is fixed at 100,000 years, which would carry us back to middle Pleistocene times at least. Man, therefore, most probably existed in Europe long before he had made his appearance in the new world, although it is quite possible that further investigation may lead to the discovery of a still more ancient stock than that to which the Mississippi skull belonged. How long a time elapsed between the first appearance of Palæolithic man in Northern Europe, and the subsequent advent of Neolithic man, it is at present impossible to say with any degree of certainty; but the interval must have been of enormous length, for we find no traces of polished stone implements until the very close of the Pleistocene era during the last Franco-British continental system. At this period man had become much more civilised than his ancestors of the Palæolithic age; his implements were more ornamental and better fitted for the purposes for which they were intended; his mode of life had become more settled; and he had developed primitive industries. In the ancient "hut circles" found at Standlake and at Fisherton, near Salisbury, have been found instruments used for spinning and weaving, which date back to Neolithic

times, also fragments of pottery and stones used for grinding corn, side by side with the remains of domestic animals. From this we conclude that Neolithic man was at this time a companion of domestic animals, a keeper of flocks and herds, and an agriculturalist. He very soon became, in addition to this, a miner, as is evident from the remains found at Cissbury, on the South Downs, and at Grimes Graves, near Bandon, in Suffolk. Shafts had been sunk and galleries dug out of the ground in order to unearth a better kind of flint for manufacturing useful implements; and in some of these galleries the tools of the workmen have been discovered, consisting of picks made out of stags' antlers, polished stone celts, chisels of bone and antler, and small cups made of chalk. With these and other primitive tools the flint had been worked out in several places, forming deep hollows in and near which were the remains of birds, sheep, goats, horses, pigs, and dogs, which evidently had served as companions to and food for the miners. Canoes, hollowed out of large trees by the use of fire and axes, have also been discovered, together with huge paddles for propelling them; and numerous have been the discoveries of heads of javelins, arrows, and spears, which were probably used as weapons of warfare, the population by this time having grown large and divided itself into small communities more or less at enmity with each other.

Similar progress was made by Neolithic man on the continent of Europe, as we know from the discoveries made in Switzerland. As early as 1829 very ancient piles had been discovered in the lake of Zürich, which have since been found to be the remains of primitive lake-dwellings, dating from Neolithic times. These peculiar habitations consisted of wooden houses built on platforms erected on a number of wooden piles driven into the bottom of the lake, and were, no doubt, so constructed with the view of protecting the small colony from the raids of wild beasts and warlike people from other parts of the country. Most of these lake-dwellings were burnt down, their charred remains sinking to the bottom of the lake, where they have been discovered together with heaps of corn, pieces of woven and plaited cloth, mealing or grinding stones, earthenware imple-

ments, nets and mats, and implements of stone, antler, and bone. Numbers of domestic and other animals were kept in these dwellings, such as the dog, horse, pig, sheep, and cow; and fish appears to have been a regular article of consumption. Similar discoveries have been made in Denmark by Professor Steenstrup and others, which show an equal advance in civilisation and culture during early Neolithic times. Vast accumulations of refuse matter, in the form of oyster-shells, fish-bones, and animal remains, have been found near the shores of the Baltic, the whole being heaped up into mounds, evidently having formed public refuse-heaps for communities of settlers. Scattered about were also found polished stone axes, but no metal implements; while upon some of the stones were well-drawn engravings, pointing to a considerable advance in culture; and the fact that the remains of the domestic animals prove them to be of southern and eastern origin suggests the probability that these settlers were immigrants from the south-east of Europe, where we should expect considerable advance to have been effected in civilisation.

It is extremely probable and generally admitted that man became civilised in oriental countries, and made his way northwards and westwards, gradually covering the whole of Europe; so that we should expect the races of Egypt, Persia, and India to be far more highly cultured than those who were establishing themselves in the west at the same time. It would take a very long time indeed for people to spread themselves from Egypt and Persia over the whole of Europe, and during all this time they would naturally, owing to their wandering habits, advance in civilisation far more slowly than those who remained in their original homes. At the time, therefore, that Neolithic man had become a settler in Europe and Britain we may fairly suppose that Egypt, Persia, and India were great, powerful, and prosperous states, well advanced in civilisation and art, and, perhaps, even the tail-end of a mighty and prosperous civilisation that had preceded them long ages before. It was probably from these highly-civilised centres that the discovery of bronze was carried into Europe, which marked the commencement of what is called the Bronze or Prehistoric Age,

during which period the use of bronze implements almost entirely superseded that of polished stone weapons.

Before the Bronze Age had fairly commenced the last of the Pleistocene deposits had taken place, and the recent layers of earth had begun to distribute themselves upon the older strata; but how long a time has actually elapsed since the completion of the Pleistocene stratification has not been accurately ascertained. A rough approximation to the relative length of the Pleistocene and Prehistoric periods may be obtained from the fact that the valleys were cut down by streams flowing through them as much as a hundred feet deep in the former period, while the work done by the rivers during the latter period is measured by the insignificant fluviatile deposits close to the adjacent streams. We may, therefore, conclude that the Pleistocene era was, beyond all calculation, of longer duration than the Prehistoric. It must not be imagined from this that the Prehistoric period was a short one, for there have been a series of changes in the fauna, and a series of invasions of different races of men into Europe, which must have required a very long time to have been brought about, judging from similar changes recorded in history.

It is believed that, soon after the commencement of the Bronze Age, an Aryan stream of life poured over Europe from Central Asia, and finally invaded England, driving out the old inhabitants and re-stocking the country with a host of Aryan Celts, who brought with them the knowledge of bronze manufacture. The defeated natives retreated to Ireland and the west of England and Scotland, and finally gave themselves up to their conquerors, whom they in future served as slaves. Thus were annihilated the Neolithic men of Britain, and thus was the use of polished stone weapons superseded by that of bronze implements. These Celtic invaders, like their conquered predecessors, lived upon the flesh both of wild and domestic animals, as is evident from the discovery made in 1867 at Barton Mere, near Bury St. Edmunds, where bronze spear-heads were found in and around large piles and blocks of stone, together with vast quantities of the broken bones of the stag, roe, wild

boar, hare, urus, horse, ox, hog, and dog, as well as fragments of pottery. Fire was produced by these men by striking a flint flake against a piece of iron pyrites, as is evident from the discovery of these articles in and around charred remains of fires; thus a great advance was made in this direction upon the habits of the older inhabitants, who had only been able to procure fire by rapidly turning a piece of wood between their two hands, the point being fixed in a hollow on another piece of wood, so that the great friction which resulted produced heat sufficient to generate flame.

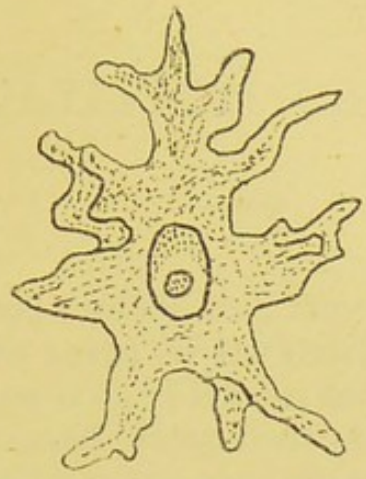
Following the Bronze Age was the Iron Age, during which period the historic era commenced; and thus we have not only various discoveries to prove that iron gradually supplanted bronze, but history bears witness to the same truth. The Homeric legends abound with feats performed by heroes who wielded bronze and iron weapons; and from Hesiod, who wrote nearly five hundred years before Herodotus, we learn that iron had already superseded bronze among the Greeks, and that the archæologists of his day recognised a distinct era of the past as the Age of Bronze. The probability is that the discovery of the mode of separating iron from its ore and turning it into useful articles was made in Asia, from whence it was afterwards introduced into Europe; for we find that at the very first appearance of iron in Britain and France there were iron coins and iron ornaments in regular use among the people, which articles were no doubt brought by invading tribes of oriental people. In the early or prehistoric portion of the Iron Age the practice of burying the dead at full length first became known in Britain, cremation having always been practised previously.

Having now arrived at historic times, our inquiry into man's antiquity need not be further continued. For the searcher after truth there only now remains the task of carefully considering the facts here brought forward and comparing the conclusions arrived at with the old orthodox story of the creation of the world and man as found in the Bible. If the story read in the Book of Nature be a true one, then man has lived upon the earth several hundred thousand years, and has passed

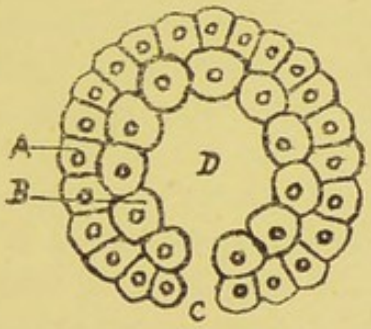
from a state of unconscious animal existence, through innumerable stages of savage, semi-savage, and civilised conditions, to his present commanding position. If the story read in the so-called Book of God be a true one, then the world and man were created less than six thousand years ago. The reader must judge for himself which is the truth.

PLAN OF EVOLUTION OF MIND IN MAN

INDIVIDUAL ASCENT	INTELLECTUAL PRODUCTS	EMOTIONAL PRODUCTS	RACE ASCENT
15 Yrs.	Science	Rational Emotion	Homo Sapiens
10 Yrs.	Monotheism	Melancholy & Ecstasy	Homo Cultus
5 Yrs.	Polytheism	Reverence, Remorse & Courtesy	Homo Semi-Cultus
3½ Yrs.	Fetishism	Awe and Appreciation of Art	Homo Semi-Ferox
3 Yrs.	Superstition	Avarice, Envy, Hate, Hope Vanity, Mirth, Love of Beauty	
2½ Yrs.	Definite Morality		Homo Ferox
26 Mos.	Judgment Recollection & Self Consciousness		Alali
22 Mos	Speech		Semi-Human Apes
20 Mos.	Concerted Action		
16 Mos.	Knowledge of the use of Simple Instruments		
14 Mos.	Articulation		
13 Mos.	Indefinite Morality		Anthropoid Apes
8 Mos	True Reason	Pride, Shame Deceit, Passion Cruelty & Ludicrousness	Monkeys Dogs & Elephants
6 Mos.	Understanding of Words	Sympathy Curiosity Revenge & Gratitude	Horses Pigs & Cats
5 Mos.	Dreaming	Emulation Jealousy, Joy, Grief.	Birds
4 Mos.	Recognition of Persons	Anger	Reptiles
15 Wks.	Recognition of Places	Play	Insects and Fishes
14 Wks.	Association of Ideas	Pugnacity	Crustaceans
13 Wks.	Conscious Memory	Fear	Crustaceans
1 to 2 Mos.	Pain and Pleasure		Vermes
3 Wks.	Consciousness		Higher Molluscs
BIRTH	Imperfect Sense-Organs Primary Instincts		Lower Mollusos
EMBRYO	Non-Nervous Adjustment		Amœbæ
GERM	Protoplasmic Motion		Protoplasm



A creeping Amœba, or unicellular Protist that changes its form continually; with cell-nucleus in the middle, within which is the nucleolus. After Haeckel.



Gastrula of a Gasteropoda (Gastræada)
After Haeckel

A. Ectoderm. B. Endoderm. C. Mouth. D. Gastric cavity.

EVOLUTION OF MIND.

It seems hardly credible that there should exist people who profess to accept the Darwinian theory of development of species in all its fulness, and yet reject the idea of the human mind having been evolved by slow stages from the primitive sense-organ of our lowliest ancestors, the Protamnia. Such inconsistency seems almost puerile, and, were it not for the fact that the admission of this truth would be the final blow at the various faiths of the world, we should not be called upon to-day to defend a position so utterly impregnable as that assumed by Haeckel and others in regard to the evolution of the human mind. When education has advanced further there will, we must hope, be less of this shutting of the eyes to obvious truths for the mere sake of propping up for a little while longer the belief in a batch of fairy tales and preposterous legends. As we look around us upon the wonderful objects of nature we see everywhere animation and law; the heavens above are full of life—suns, planets, moons, and other celestial bodies incessantly moving to and fro, all bound in their courses by the immutable laws of nature; the vast ocean, teeming with myriads of living beings, is incessantly rolling and roaring like some great monster, but never exceeds the limits which nature has assigned to its action; and the whole face of the earth presents a constant scene of activity of some kind or other—volcanoes discharging their molten fluid, huge glaciers grinding along the ground, monster rivers rushing forward with incessant roar, and the vegetable and animal kingdoms increasing and multiplying at a marvellous pace. All this is life—in fact, everything we see around us, of whatever form or shape, is life of some sort. The very ground upon which we stand is full of life, each particle of dust being

held to its fellow particles by mutual attraction; and there is not a single atom of the earth's substance or of the whole universe that we can say is minus this property of life or activity; nothing in the universe that we know of ever remains for one moment in a state of rest; everything is constantly moving, and every particle of the whole contributes its own share to the general activity which we term motion or life. The whole universe is a huge manifestation of phenomena, which make up the sum-total of life or activity. The sun rotating on its axis is one form of life; the moon silently wandering round our planet is another form of life; the trees and animals growing and multiplying on the land are other forms; and every lump of ore taken out of the ground and every paving stone in our streets are other forms of life. Every particle of every substance whatever is in a state of continual motion, and therefore full of life. In fact, it is this very motion or life that sustains matter; for matter could not exist—that is, its particles could not hold together, and thus form substance—without the life, motion, activity, or whatever we like to term the property which operates upon them and produces mutual cohesion.

Life has always, therefore, been active in matter, and always will be, for life or motion cannot be separated from matter; and, just as matter has passed from a condition of homogeneity to one of heterogeneity, so has life done likewise. Life possesses infinite potentiality, and manifests itself in an infinite variety of ways by means of different combinations, which it brings about in the molecular atoms of universal matter. It acts, for instance, upon a planet by causing its particles to hold together in one mass apart from other bodies of a similar or dissimilar character; it also acts upon what we unscientifically call inanimate nature by causing its particles to hold together, forming in one case a stone, in another a metal, etc.; and it acts upon what we term animated nature by causing its molecules to combine and procreate. This power of attraction and cohesion of particles of universal matter is life, and it depends entirely upon what particular combination of the molecular atoms of universal matter takes place whether a sun, a moon, a planet,

a stone, a crystal, a sponge, a tree, or a man be the result. This much is certain, however, that not one of these bodies can ever be produced except by an evolutionary process subject to the universal and unchangeable law which fixes the sequence.

Animal life, as distinct from all other life, is a comparatively late development or manifestation in the sequence of universal phenomena. This world on which we live had existed as a compact body for millions of ages before life assumed the character of animal life; and so gradual was the process of evolution from the primal condition of homogeneity, through all the manifold stages of life, until the condition of animal life was reached, that it is impossible to fix a particular moment when such life became manifest. So it is with every stage of the evolutionary process; there are no starting-places for particular species, the whole being one continuous unfolding of phenomena, without arrest of any kind.

It is equally impossible to fix a particular point or moment for the manifestation of the crystal life as it is for that of the animal or the vegetable life. All are but gradual unfoldings of the universal potentiality. Crystal life is the highest development of what is popularly but erroneously termed inanimate nature, and differs not one iota from Moneron life, which is the lowest form of animal life, in its constituent elements, the only difference between the two being in the mode of combination of the elementary particles composing each. The crystal elements combine in such proportions as to cause the mass to hold together like other solid bodies, its bulk being increased by the deposition of fresh particles upon its outer surface; while the Moneron elements combine in such a manner as to render the body soft and yielding, so that it can absorb nutriment from without to within and multiply by fission. The elements of both are identically the same: the manner of combination causes the differences between them. Many learned men declare that, if this were true, we ought to be able to take the five elements—viz., Oxygen, Hydrogen, Nitrogen, Carbon, and Sulphur—in the necessary proportions, and, by uniting them, form animal life. This, they say, has been

attempted, and the result has been failure; therefore, animal life could not have been generated in that manner, but must have been specially created at some particular moment. This argument is absurdly unsound. These persons might just as well say that, to substantiate the assertion that crystals are formed of a combination of elementary molecules, we ought to be able to take the necessary quantity of these elements, and, by uniting them together, form a crystal; and that, if this cannot be done, then crystals also require a special creation. The same argument for a special creation will apply to every species of the animal, vegetable, and mineral kingdoms. Protoplasm is the lowest form of animal life, differing from the highest form of mineral life only in the mode of combination of its elementary particles; but this difference causes the manifestation of fresh phenomena, in this case as in every other modification of a previous state of nature, which gives it the appearance of possessing a property that had not been possessed by any substance previously, whereas, in truth, the apparently new property is but a further development of that previously possessed by inorganic bodies. In short, the power of absorption possessed by the Moneron is simply one of the many manifestations of that universal life or energy that is inherent in all matter, and has been so from all time; but it is a comparatively late development, occurring at a particular period in the world's history, when the conditions necessary for such a development were present. Before this period no such combination of molecular atoms took place with the same result, simply because the necessary conditions of development were absent. In the same manner precisely there was a prior period when no such substance as a crystal existed, the conditions requisite for the peculiar combination of molecular atoms to result in the formation of a crystal having been absent.

When the world had undergone sufficient evolutionary development there came a time when such atmospheric and other conditions were present as to permit of a modification of the then existing substances and properties, which resulted in the formation of the crystal; and, precisely in the same manner, and for the same reason,

a further and later modification resulted in the formation of Protoplasm, which is the earliest form of animal life. This little substance gradually differentiated into two distinct parts, by a nucleus being formed in the centre of the protoplasmic mass, and became possessed with a peculiar power of locomotion, which caused a still greater difference to exist between itself and its ancestral stock. This power of locomotion, again, is but a modification of that life-power of which we have spoken, and forms a stepping-stone between the molecular action of mineral substances and the mental wonders of the human being. The crystal, in common with all other bodies in the mineral kingdom, always possessed this power of locomotion to a limited extent; every one of the individual atoms which make up the whole substance has always had the power of locomotion, for they all attract and repel each other and effect cohesions by their mutual attraction. This locomotive power underwent such a modification when cell-life (Protozoa) was manifested that not only were the constituent molecular atoms individually possessed of this power, as before, but the whole mass of the cell became endowed with the same property, just as a whole continent of free people who have been in the habit of defending themselves singly against their enemies sometimes combine and co-operate with each other in the form of a republic, the function of the individual being assumed by the body as a whole. The little cellular organisms, which are called Amœbae, possess this extended power of locomotion, and may be seen constantly moving about in the endeavour to locate themselves in the brightest part of their dwelling place, frequently a little pond. They are attracted by light, which clearly proves that they possess a degree of sensory perception, although special sense-organs are of course wanting, the whole mass of the body being nothing more than a single cell composed of protoplasm and nucleus. These little cellular organisms soon unite with each other, forming small bodies composed of several cells in a state of cohesion (Synamœbae), and on the surface of these multicellur organisms are shortly afterwards thrown out minute threads or ciliae, the first attempt at separation of sense-organs from the

surface of the body. In these tiny Protozoa, those organisms which consist of one single cell only, the Amœbae, as well as those consisting of several cells in a state of union, the Synamœbae, are able to perform all the functions of animal life—cohesion, sensation, motion, digestion, and reproduction; but, as the organism becomes more and more complex, these different functions are shared among several groups of cells. This differentiation proceeds steadily stage by stage, until at last different senses are located in different parts of the body, and we find animals possessing eyes, ears, noses, and mouths, one organ performing the function of sight, another that of hearing, and so on. All these organs of sense are but parts of the general nervous organisation of the body, which is *apparently* absent in the Protista, but existing potentially in the protoplasmic substance, as it also does in every other substance in the universe.

The ciliated multiple cell-organism, in course of time, becomes transformed into a hollow body, having a wall composed of a single layer of cells, and this again, by invagination, or folding of itself within itself, forms a double-walled cavity, or Gastrula, having an external opening like a mouth. These little animals, the Gastrœada, having an inner layer of cells (the endoderm), which carries on the nutritive and assimilative functions of the organism, and an outer layer (the ectoderm), which forms the general motor and sense-organ of the body, are the first animal organisms to possess a real sense-organ separate and distinct from other parts of the body. From this epidermal organ of sense are developed, as higher forms of animal life make their appearance, the nerve-cells and sense-cells which form the whole nervous system.

In the fresh-water polyp, or Hydra, which is wanting in distinct organs of sense and nervous system, we find a remarkable sensitiveness to touch, warmth, and light, individual ectodermic neuro-muscular cells performing these functions, but a far greater sensibility being exhibited in the circle of fine prehensible tentacles surrounding the mouth than elsewhere. Here we have a marked attempt at localisation of sense-organs, and a manifesta-

tion of instinct, which makes the little animal shrink from the touch.

From the Hydræ evolved the Medusæ, which, instead of being dependent entirely on neuro-muscular cells like the parent forms, developed minute sets of nerves and muscles, by the use of which they became enabled to swim about easily and at their own will and pleasure. We get in this little animal the first appearance of real nerve function, or conductibility of stimulus along the nervous fibre to a muscle which it causes to contract—a totally different function to the contraction of the whole body upon a stimulus being applied to it, as in the case of the Hydræ.

In the worm forms, which evolve from the Gastræada, we come across the first attempt at special sense-organ formation, in the shape of depressions on the integument of the body. The Himatega, or sack-worms, possess a rudimentary spinal cord, and were the parents of the first true vertebrates, organisms without skulls or brains, but with a true vertebral cord. These little vermiform animals, in addition to their rudimentary spinal cords, exhibited upon the surface of the body several small depressions, which answered the purpose of a set of special sense-organs, one tiny depression being set apart especially for the perception of light waves, another for the perception of sound waves, another for the perception of odours, etc.; and thus gradually came about that wonderful evolutionary process by which bodies became endowed with more or less perfect special sense-organs.

As the animal kingdom developed into higher and higher forms of life, and skulls and brains became the order of the day, the special sense-organs became possessed of larger powers, at the same time that the whole nervous organisation assumed higher and more complex functions, resulting eventually in a very gradual unfolding of the most wonderful of all the latent potentialities of universal life—the marvel of consciousness. This is the present climax of Nature's evolution, the grandest and most awful achievement of that hidden and mysterious force which baffles comprehension, and beside which all things seen, heard, or felt pale into insignificance.

To point out the precise method of the evolution of mind, step by step, until the final climax of consciousness was reached, would require an abler pen than mine; therefore I shall be content to briefly notice the different products of intellectual development in the order in which they are unfolded, showing the analogy between ontogenesis, or the life-history of the individual, and phylogenesis, or that of the whole race, not now as regards bodily, but only mental, evolution. We must ever remember that the biogenetic law insists that the process of development in the race is reflected in miniature in the embryonic history of every individual. In other words, it is, beyond doubt, an accepted article of faith with biologists that the development of the individual from the embryo *in utero* to the full-grown man is an exact counterpart of the development of the whole race from the primitive protoplasmic atom, the lowly Moneron, to *homo sapiens*, equally in regard to mental as to bodily evolution.

Every human individual commences his term of separate existence as a tiny speck of protoplasm, and slowly advances through the phases of separate cell-life, multicellular existence, and the gastrula, vermiform, and pisciform stages, being finally born as a partially-developed member of the human family, from which moment he grows rapidly to the perfection of the adult state, having accomplished, in the short period of about a score of years, precisely what his counterpart, the race, effected in many millions of years. During the period in which the individual dwells *in utero* great and rapid modifications take place in the general construction of the fœtus; sensory perception makes its appearance very early, being followed quickly by the first attempt at differentiation of special sense-organs in the form of tiny surface depressions; the brain and spinal system gradually take shape and make ready for future action; and the little body slowly assumes a form suitable for separate extra-uterine existence. At the moment of birth the brain and special sense-organs are not yet developed to such a degree that they can properly discharge the functions they are called upon to perform in the mature state; they have to advance gradually to perfection in harmony with the

growth of the whole body; and thus it is that a newly-born individual does not see, hear, or exhibit signs of consciousness until some time has elapsed from birth, although it is, at first, quite sensitive to cold and heat. If a lighted candle be held in front of the eyes of a newly-born infant, and moved to and fro, it will be at once observed that the child is totally unconscious of it; and, if a gun be fired off in the room occupied by the child, the effect upon the infantile organism is *nil;* but, if the air of the room be allowed to cool, the effect will be at once perceived, for the muscles of the child will soon begin to contract, and his vocal bellows to act vigorously. Gradually, however, the sight, hearing, etc., become adjusted, and the infant begins to take notice of surrounding objects, until at about a month after birth pain and pleasure, the first indications of the dawn of the mental powers, manifest themselves. Conscious, as distinguished from instinctive or non-conscious, memory appears to be exercised at about the thirteenth week, and to be immediately followed by association of ideas, the recognition of places and persons, and dreaming. At the same time that these indications of intellectual development are manifesting themselves, a corresponding unfolding of the emotions is observed. Side by side with memory appears fear, followed by pugnacity, play, and, later, anger; while, still later, about on a par with the first period of dreaming, or at about the age of five months, are manifested emulation, jealousy, joy, and grief. In about another month we notice that the child begins to understand words, while, on the emotional side, he evinces signs of awakening sympathy, curiosity, revenge, and gratitude, followed within a couple of months by pride, shame, deceitfulness, passionateness, cruelty, and ludicrousness, which show themselves at the moment the child appears to first exercise what we term true reason. From this point we see rapidly unfolded the higher products of intellectual development, the first of which is morality of a very indefinite kind, which immediately precedes articulation at the age of about fourteen months, being closely followed by knowledge of the use of various simple instruments, afterwards at the age of twenty months by concerted action, and still later by speech,

which generally is effected at the age of two years, or rather earlier. Following quickly upon speech we observe judgment, recollection, and self-consciousness manifesting themselves, and, by the time the child has attained the age of two years and a half, morality of a definite kind makes its appearance.

Tracing the child's development still further, we find the next important intellectual manifestation—viz., superstition—to take place at about three years of age, while concurrently the following emotional products appear—avarice, envy, hate, hope, vanity, mirth, and a love of the beautiful, which are followed, in the course of a few months, by awe and an appreciation of art. From this age to the condition of adult life, the intellectual faculties develop according to the surroundings of the individual, while, on the emotional side, reverence, remorse, and courtesy make their appearance at about the age of five years, and melancholy and ecstasy at about the tenth year.

In the foregoing ontogenetic mirror will be found the key to the unfolding of the great mystery of the evolution of mind in the animal kingdom. We have only to take the geological periods one after the other, and study the various life-forms found in each to see at once that, with the race, the order of sequence in the appearance of the intellectual and emotional faculties is precisely the same as with the individual. We may place the new-born infant intellectually on a par with the lowly molluscs or the vermiform little animals which existed in the Cambrian period, in which little organisms probably pain first made its entry upon the earth, followed by the appearance of pleasure, memory (conscious), and association of ideas in the lowly crustaceans of the later Cambrian and early Silurian periods. With the spiders, fishes, and crabs of the later Silurian and Devonian periods we have brought before us the faculty of recognising places of which these animals are capable, which places them intellectually on a level with a child of four or five months old.

The recognition of individuals next made its appearance in the reptiles of the Carboniferous and Permian epochs; while the birds of the Oölitic and Cretaceous periods

were the first to dream, and are thus placed on an intellectual level with a child of five or six months. The emotional development coincides with the intellectual, just as in the case of the infant, for we find fear manifesting itself among the lower molluscs, pugnacity among the crustaceans, play among spiders and crabs, anger among reptiles, and emulation, jealousy, joy, and grief among birds. We now rise in the palæontological scale to the Tertiary period, and find in the Eocene age equine and other mammal forms, such as cats and pigs, which are capable of understanding words and signs, and among which we notice a manifestation of sympathy, curiosity, revenge, and gratitude. In the early Meiocene age we have monkeys, dogs, and elephants exhibiting the clearest signs of true reason, as may be observed at the present day, and at the same time manifesting such emotional signs as pride, shame, deceitfulness, passionateness, cruelty, and ludicrousness, which places them on an intellectual par with the infant of less than a year old.

In the later Meiocene age we have anthropoid apes, which may be placed on a level with one-year-old infants, and from which evolved apes of a higher order, which acquired the faculty of articulation, and, afterwards becoming more human, the knowledge of the use of simple instruments, thus reaching the intellectual level of the child of fifteen months old. As the apes became more and more human in the later Meiocene and early Pleistocene ages, they gradually acquired the faculty of acting in concert and of speech; and when, having arrived at that stage of development in which they partook more of the character of savage man than human ape, judgment, recollection, self-consciousness, and, lastly, definite morality manifested themselves, thus raising the ape-like man to the level of the child of two and a half years. In the lowest savages of to-day, as well as in the old descendants of the ape-like men, superstition developed to a large extent at the same time that the emotional unfolding proceeded in the direction of avarice, envy, hate, hope, vanity, mirth, a love of the beautiful, and afterwards art appreciation, awe, reverence, remorse, courtesy, melancholy, and ecstacy, precisely as with the child of from five to ten years of age. As the

race improved, becoming in turn semi-savage, semi-civilised, civilised, and cultured, the intellectual powers, of course, developed similarly, until, at the present day, we find men possessed of the most wonderful mental grandeur, we might almost say, conceivable. But this would be saying too much, for we must not forget that, just as evolution has continued in the past from eternity, so will it continue in the future to eternity; and who can tell to what heights the human mind may soar in the future?

Lofty as is the human intellect at the present time, as compared with the mental powers of those we have left far behind in the march of evolution, it is yet very far from being able to grasp many of the great problems of the universe, such as that of existence. Perhaps at some future time, in millions of ages to come, these great questions may be answered; but at present we know they baffle the wisest men, and continually remind us of the finite and limited character of our intellectual faculties.

This comparison of the mental development of the individual with that of the whole race is extremely interesting, and provides ample material for thought. By such comparison, and by it alone, can the science of psychology ever be based on a sure and enduring foundation. It is all very well for theologians and other biassed people to declare that animal intelligence has nothing in common with the reasoning powers of man; but let them honestly look at the facts as they are, thanks to the indefatigable energy and indomitable perseverance of lovers of science and truth, now presented to us. Candid observers cannot fail to notice that the difference between the intelligence of man and that of the lower animals is one only of degree, and not of kind. When we see the order of sequence being followed in the development of the individual so like that of the whole race, not only as regards the bodily structure, but also as regards the mental functions, can we help arriving at the conclusion that the one is but the epitome of the other, and that the superior intellect of man is but a higher development of the so-called instincts of the lower animals? Have we not at the present day, among

members of the human family itself, various degrees of intelligence, from the almost barren brains of the lowest races of savages to the brilliant mental achievements of a Newton or a Spencer?

It is beyond doubt that the intellectual superiority of civilised man over his savage brethren is due to the greater multiplicity of his objects of thought, and it follows that savage man's intellectual superiority over the lower animals is due to the same cause. The actions of both have the same aim—viz., the supplying of the wants of the physical nature and the gratifying of the desires aroused in the mind. It is frequently asserted that man differs from the lower animals in possessing the power of reflection; but this I hold to be an exploded argument, and at variance with all recent teaching. Dogs, elephants, and monkeys most certainly possess the faculty of reflection, and it is not difficult to find races belonging to the human family whose powers of reflection transcend hardly in the least degree those possessed by the higher apes; while the difference between the reflective capacity of the lowest savage, which is of the simplest conceivable kind, and that of the civilised European, which has developed into genius, is enormous. Then, again, it is often said that only man is emotional; but one need only have an ordinary acquaintanceship with domestic animals to at once see the absurdity of this argument, for dogs are frequently observed to laugh, to cry, to express joy and gratitude by their actions, and to betray feelings of shame and remorse; while horses and elephants have been observed to punish their cruel keepers in the most cunning manner and then to laugh at the poor fellows' discomfiture. As to the "conscience argument," so frequently brought forward, by religionists especially, all I have to say here is that conscience, or the knowledge of the distinction between right and wrong, is not an inherent quality of the human mind, being merely a result of the operation of the reflective faculty aided by experience, as is quite evident from the fact that the ideas of morality vary according to the age in which we live. The same may be said about the greatest of all the arguments against evolution—viz., that of language; for, just as conscience is but a product of re-

flection and experience, so is language also. It is a mistake to imagine that the power of speech is possessed by man alone, and that his language differs altogether from the cries and signals of the lower animals, for such is not the case. Many animals possess the faculty of speech, and human language differs from that of the lower animals only in its degree of development, and in no sense in its origin. Probably all language originated in interjection, or the "instinctive expression of the subjective impressions derived from external nature," as Mr. Farrar puts it. And, just as the reflective powers of the race were developed and shone more brilliantly as each stage in the evolutionary march of intellect was passed, so did language pass from the simple monosyllabic cries to the complex dialects of modern civilisation; and it is worthy of notice that, at the present day, or at any rate very recently, there were races of savage men inhabiting this earth who possessed no language at all, and could not, on account of their mode of living, be placed on a higher intellectual level than the higher apes; while we have the authority of the leading philologists of the times in support of the fact that the monosyllabic cries of some of the lower human tribes are quite within the grasp of the ape's voice.

Human beings have been discovered in wild and hitherto unexplored regions who have not the remotest idea of what we should term civilisation. They lead a wandering and useless life, sleeping at nights, not in huts, nor in caves, but squatting among the branches of tall trees, where they are placed out of the reach of savage animals. They do not appear capable of expressing their thoughts in sentences, but make use of exclamatory grunts, which serve the purposes of speech quite sufficiently for their limited requirements; and their general appearance approaches to a remarkable extent that of the higher apes, in that they are almost completely covered with hair, possess a dirty brown skin, short legs, long arms, and full abdomens, can pick up stones, sticks, etc., with their toes as well as their fingers, and show few if any signs of intellectual powers. Let any one visit the Zoological Gardens, in London, and carefully observe the apes exhibited there, and then say whether

there is a vast difference between some of them and the human beings who answer to the above description. One need but visit the travelling menagerie of Messrs. Edmunds, and view their "missing link," an excellent sample of the chimpanzee troglodyte, to see that the difference between man and the lower animals is one only of degree, quite as much as regards intellect as bodily form. I once saw exhibited in the *Jardin d'Acclimatation*, in Paris, a lot of Patagonian or Fuegan (I forget which) natives, who were very little superior intellectually to the chimpanzee. They were stark naked, in a wretchedly dirty condition, and appeared quite incapable of anything like sustained mental effort. But these are by no means the lowest among the human species.

In conclusion, I need only re-state my opinion that all so-called living things are but products of the development of protoplasm, whether belonging to the animal or vegetable kingdoms; that this protoplasm possesses the property of vitality, or the power of perceiving stimuli of various kinds and responding to them by definite movements; that the phenomena of mind are but functional manifestations of this protoplasmic development; and that the highest intellectual product of the human mind exists and has existed from eternity in a state of latent potentiality in every atom of protoplasm, as well as in every particle of matter in the universe.

THE SPECIAL SENSES.

According to the now almost universally (that is, among educated scientific people) accepted theory of Evolution, each living being upon this earth is a result of a very slow process of development, which commenced with a low form of life many millions of years ago, and has since been operating continuously, becoming more and more complex, and imperceptibly attaining greater perfection as each fresh stage was accomplished. From the homogeneous to the heterogeneous, from inorganic to organic, from Amœba to man, the evolutionary development has slowly, steadily, and surely advanced step by step, in obedience to certain well-defined laws. Yet it is impossible to discern in this slow process of evolution any well-marked difference between one particular species and the next of kin, although the difference becomes clearly apparent if we take two species separated from each other by considerable time; just as it is impossible to detect any alteration in form and feature between a child of six days old and the same child of seven days old, while the change is very evident after the lapse of several weeks or months. If we were to photograph a human being regularly each day from the moment of its birth to the time of its decease at the age of eighty, we should be unable to detect any real difference between the portraits on any two consecutive days; but the difference between the child of a week old and the young man of twenty years would be enormous, as would be that between the full-grown youth and the tottering old man. As the human individual in its earliest condition of existence is not possessed of the same faculties as it afterwards enjoys as a more perfect development, so, in like manner, the species in its primal condition was wanting in the loftier qualities now possessed by the higher animals, such as consciousness, sight, hearing, taste, smell, and touch, all of which have been gradually evolved as the various life-forms developed from lower and more simple to higher and more complex kind. For instance, at a very early period of man's individual existence he possessed no brain, eyes, ears, mouth, or nose, and, therefore, was quite incapable of mentating, seeing, hearing, tasting, or smelling; but, as the organism very gradually developed into a higher and more complex kind, these various organs manifested themselves, and slowly arrived at

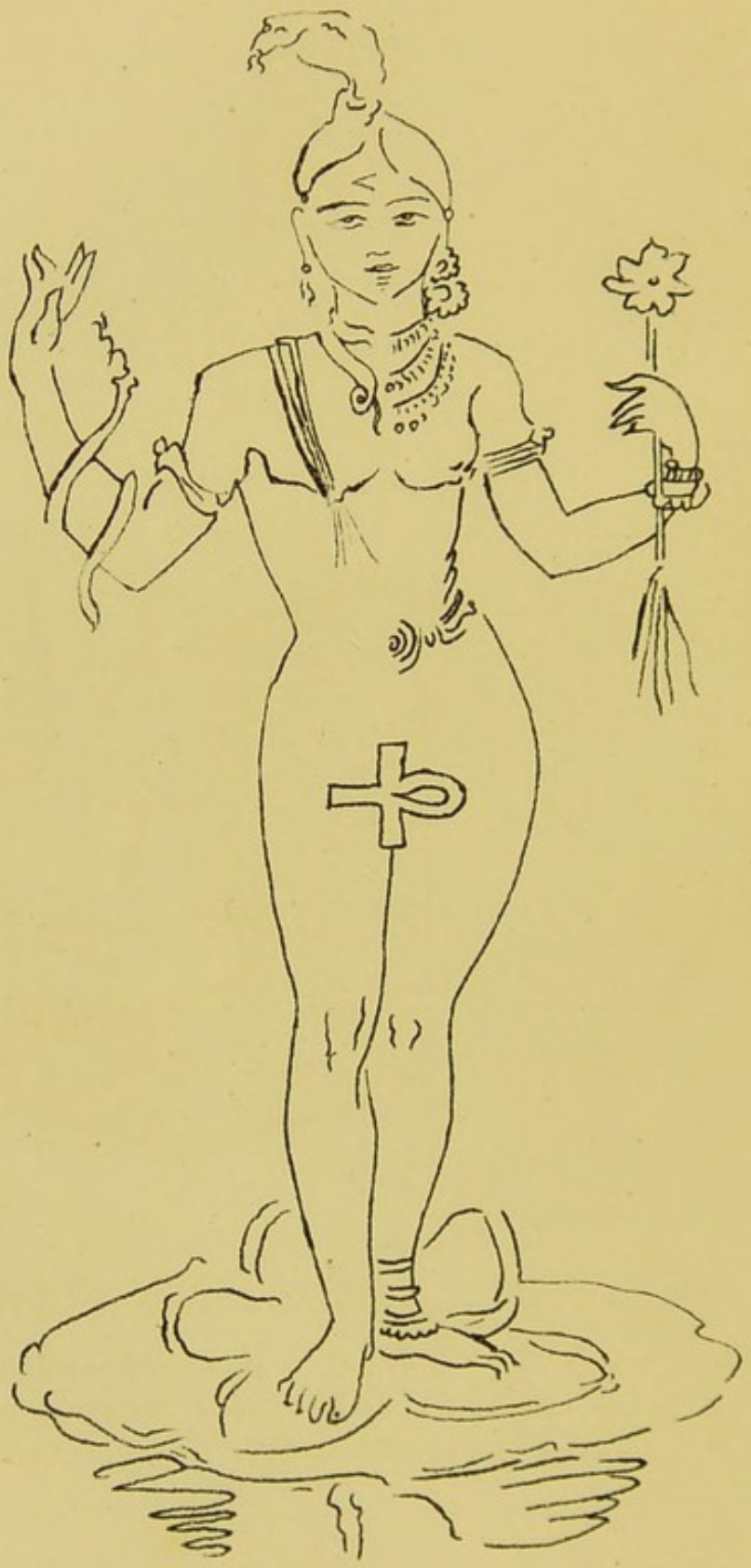
such perfection as we find in the human infant at birth. Precisely so was it with the race. The lowly Moneron was of homogeneous structure, possessing neither parts nor kind, but gradually differentiating into nucleus and cell; its descendants, the Gastrœada, becoming possessed, by a process of invagination, of an external layer of nucleated cells and an internal and more delicate layer, thus forming a hollow organism, or Gastrula. This external cellular integument was the original sense-organ of the animal kingdom, from which developed the organs of special sense. Though without nerve and special sense-organs, yet these little hollow Gastrœada, and, in fact, their ancestors, the Amœbae, which consisted of simple protoplasmic cells, each enclosing a nucleus, were possessed with sensory perception, being influenced by light, and by variations of pressure and temperature. As the evolutionary process continued, and the animal kingdom assumed higher forms, the original epidermal general sense-organ became converted into several special organs of sense, each specialisation commencing with a simple depression upon the integument of the organism; numerous little epidermal nerves of perception were formed, which could perceive changes of pressure and of temperature, and some of which gradually became enabled to understand particular influences affecting them, such as those produced by a strong odour, light-waves, and sound-waves. By adaptation, the extremities of these sense-nerves became expanded and enlarged, so as to enable them the better to understand the particular influences; and this expansion was accompanied by a corresponding depression on the integument, which cup-like formation afterwards became converted into an eye, or other organ of special sense, very imperfect in the invertebrate forms of life, imperfect in the fish, more perfect in the amphibian, and still more perfect in the mammal forms, such as apes and men. In short, the life-history of the individual is an exact counterpart in miniature of the life-history of the species up to the particular point reached by the particular individual.

The order and mode of development is precisely the same in all animal organisms, and may be conveniently studied by placing a hen's egg in an incubating machine, and carefully watching it for the space of three weeks. It will be observed that the eye, ear, nose, and mouth are not present at the commencement of the process, but make their appearance later on, about the third or fourth day of incubation, as tiny depressions on the integument, from which condition they gradually develop into perfect organs of special sense, as possessed by the full-grown chicken; the eyes, which receive the impressions caused by light-waves; the ears, which receive those made by sound-waves; the nose, by which odours are discerned; the mouth, which holds the taste-organ; and the skin, which remains the organ of touch and perception of tem-

perature. Now, when we consider for a moment these wonderful phenomena, we cannot help being struck by the remarkable manner in which the animal kingdom has been slowly and steadily progressing towards perfection, in spite of the enormous physical difficulties encountered; and we cannot help coming to the conclusion that, inasmuch as there was once a time when no animal existed having eyes, ears, nose, or mouth, and, still later, a period when these special sense-organs existed in a very imperfect condition, it is highly probable that in the future ages man, who now possesses special senses of a high order, will acquire even still more highly-developed faculties.

In congratulating ourselves upon the advance made by our own particular species over other members of the animal kingdom, we must never forget that, although we can mentate, see, hear, smell, taste, and feel, while myriads of our lowly brethren can do none of these, we yet are incapable of solving the mighty problems of the universe with any or all of these organs without artificial aid. No man on earth has ever yet been able to solve the mighty problem of existence, in spite of his great intellectual powers. No man has ever yet been able to see a millionth part of the wonders in the heavens above, or in the earth beneath, with his own unaided eye; but with the telescope and microscope new worlds have been opened out to him. We are as yet, undoubtedly, in but a transitory condition, the victims of an imperfect organisation, subject to a partially-developed brain and nervous system, and to five imperfect special senses. We must accept the situation philosophically, and without grumbling, and do our best to make good use of the senses we have, and leave the solution of problems we are unable to solve to future races of men, who will be possessed of better materials with which to operate.

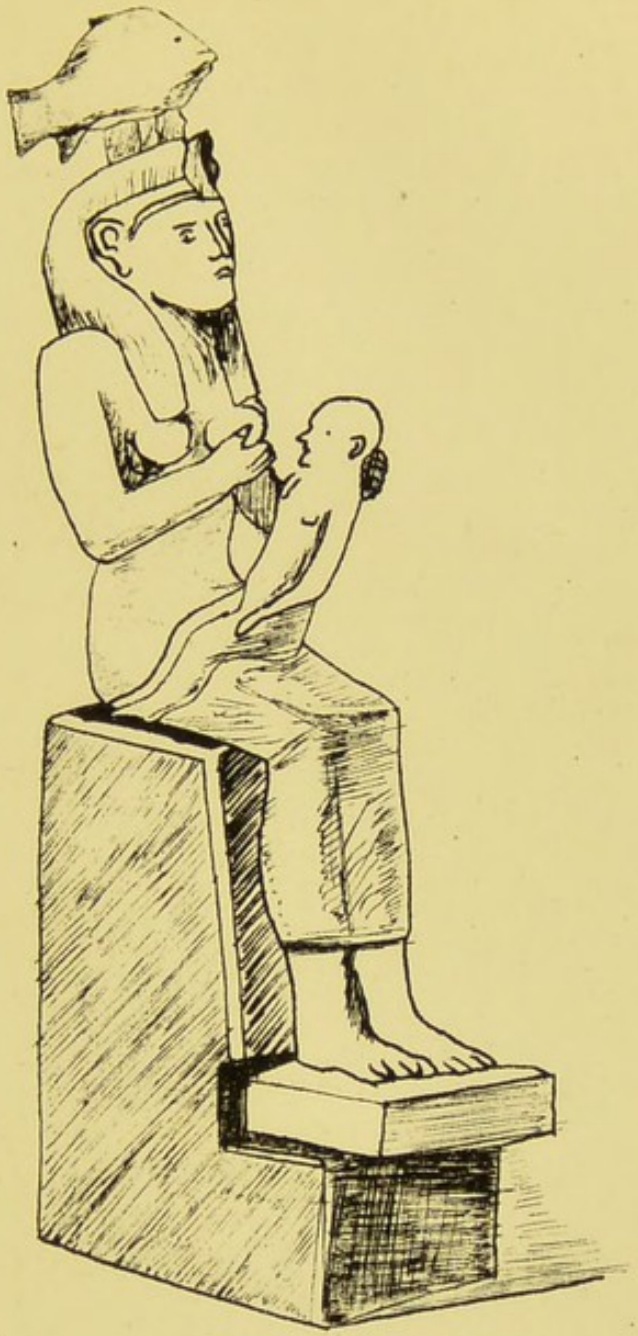
"THE SUPREME SPIRIT IN THE ACT OF CREATION BECAME BY VOGA, TWO-FOLD, THE RIGHT SIDE WAS MALE, THE LEFT WAS PRAKRITI." (*Brahma Vaivartta Puranu.*)



BRAHM

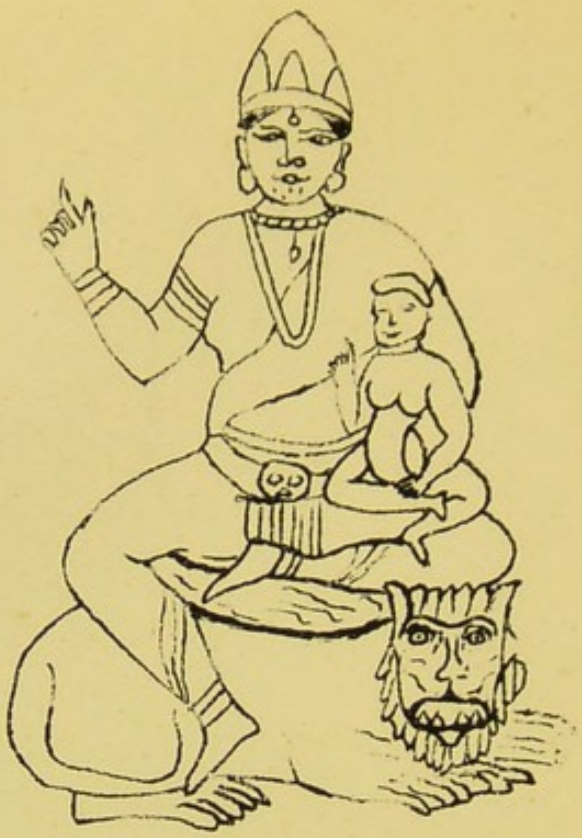
THE HINDU ANDROGYNOUS CREATOR

Copied from Inman's "Ancient Faiths."



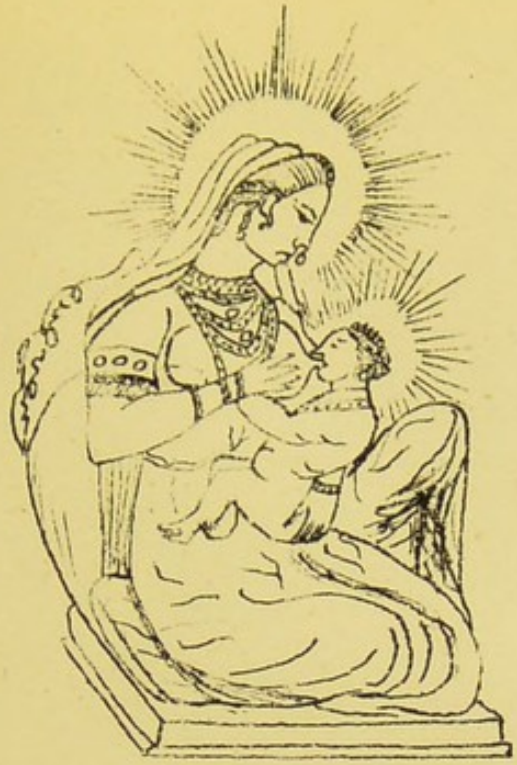
ISIS, HORUS AND FISH

From a photograph of a small bronze image in the Mayor collection of Browne's Museum, Liverpool. Copied from Dr. Inman's "Ancient Faiths."



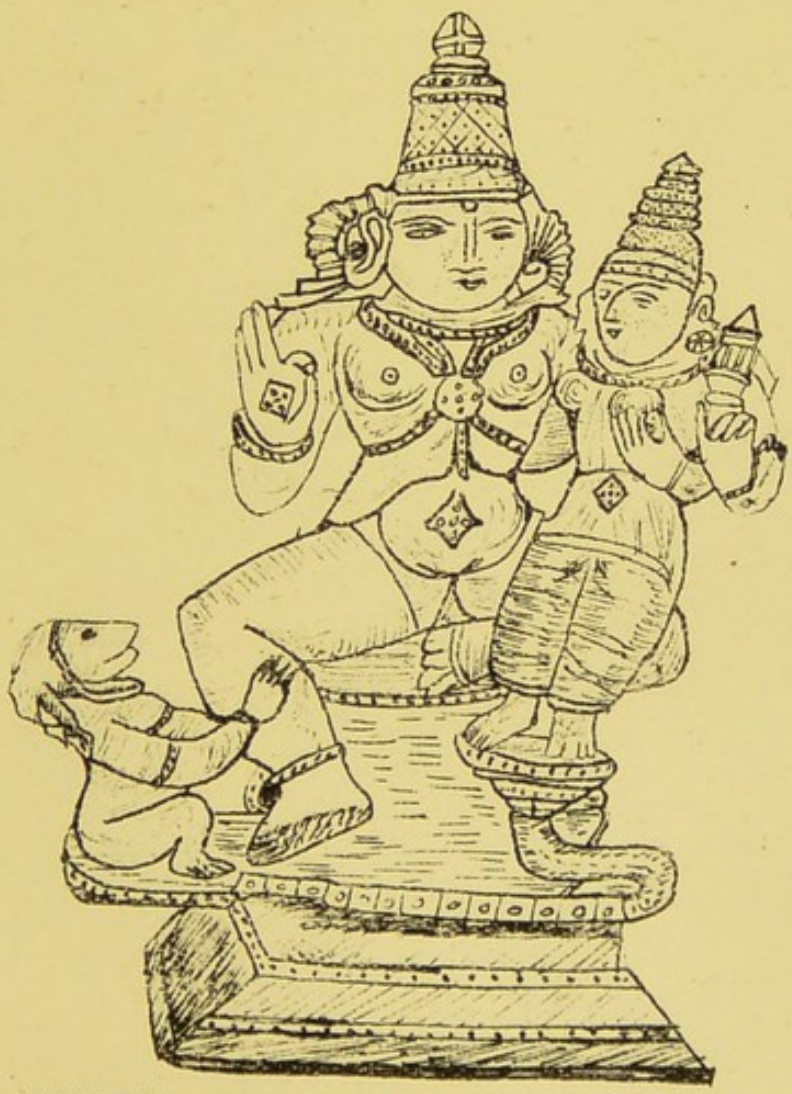
THE VEDIC VIRGIN, INDRANEE,
WIFE-MOTHER OF SAVIOUR-GOD, INDRA.
From Hislop's "Two Babylons".

THE HINDU GOD VISHNU, NURSED BY HIS
VIRGIN WIFE-MOTHER, LAKSHMI.
From Moore's "Hindu Pantheon".



DEVAKI AND CHRISTNA

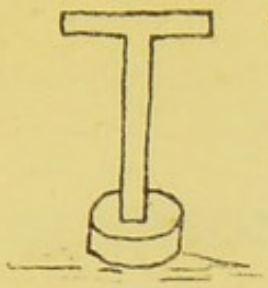
From Moor's "Hindu Pantheon."



THE HINDU GOD SIVA, NURSED BY HIS VIRGIN WIFE-MOTHER, PARVATI.

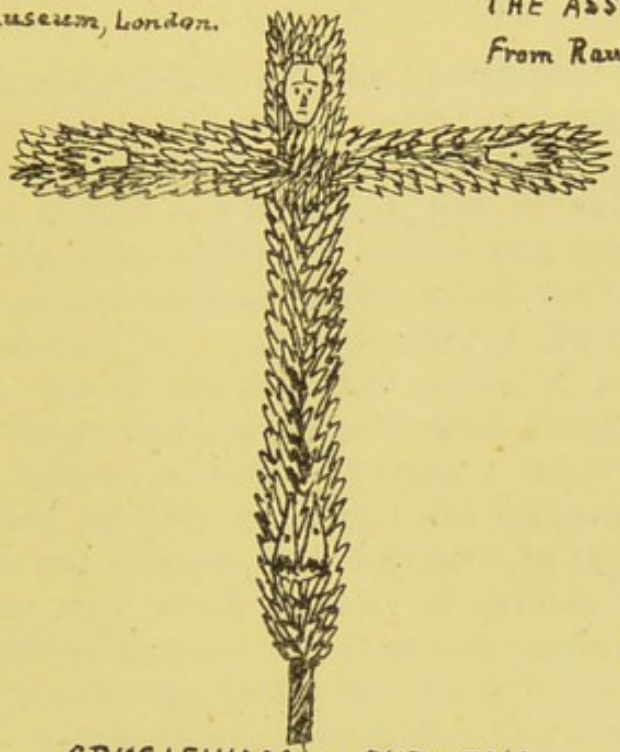
Copied from statuette in Liverpool museum.

AMEN-RA
(After Drummond.)



CRUX ANSATA
Found marked on the breast of
n Egyptian mummy in the
iversity College museum, London.

THE ASSYRIAN VIRGIN ISHTAR
From Rawlinson's "Ancient Monarchies".



CRUCIFIXION OF CHRISTNA
From old Hindu engraving
After Higgins.

VIRGIN AND CHILD
AT IDALIUM IN CYPRUS
After Rawlinson
("Herodotus")

ISIS AND HORUS
THE EGYPTIAN VIRGIN
AND SAVIOUR-GOD
From Rawlinson's "Herodotus".

EVOLUTION OF THE GOD IDEA.

"KNOWING his adopted land well, the Eastern does not require recondite volumes to explain 'Dionysiak myths' or 'solar theories,' as the old faiths are now called in the West. He sees these pervading the tales and epiks of East and West alike, just as Yahvism or Yahu-ism pervades the Scriptures of Jews or Yahus—that ever-familiar and expressive faith-term by which alone Asia knows the 'Yahudean' race." While fully admitting the true character of the old faith as here expressed, yet, with all due deference to one of such acknowledged repute in the literary world as Major-General Forlong, whose splendid work, entitled "Rivers of Faith" (Preface, p. xxi.) contains the above paragraph, it may be fairly urged that the educated few only, both among Easterns and Westerns, have hitherto been capable of discerning the vein of solar myth which pervades all systems of religion; while the vast multitude of ignorant and credulous people even yet perceive, or think they perceive, the Divine handiwork in the particular sacred oracle to which they firmly pin their faith. The Hindu supreme deity is known as Brahm, the Persian as Ormuzd, the Mohammedan as Allah, and the Jewish and Christian as El, Elohim, Yahouh (or Jehovah), God, etc. Probably few among the many millions who worship these various deities know much or anything about their origin, innocently imagining that the Deity they bow allegiance to once manifested itself to some chosen individual, to whom it gave a revelation, the facts of which were handed down to posterity. They little dream of the vast cycles of time that have rolled past since the brain of man attained such a state of perfection as to enable it to evolve the idea of Deity. It is utterly impossible for the human mind to grasp the enormous interval of time that has elapsed since primeval man emerged from the condition of unreasoning existence to enter upon the bright dawn of intellectual activity, which has developed into such mighty proportions as we behold to-day. Let us carry the mind back far beyond the Dark Ages, through the classic era, as far even as the very commencement of Egyptian history; and even then we find ourselves but little nearer that remote period in which the first spark of

intelligence made its *debût* upon the platform of life. In imagination we may go still further back, and view the wonders of that ancient Asian civilisation which preceded that of the ancient Egyptians and Greeks. and which was probably derived very gradually from the earliest social conceptions of the Caucasian branch of the Polynesian primitive man. Still we are ages away from the period we desire to arrive at; and even were we able to trace the human family back to that remote time when man could not be said to partake more of the character of the human than the ape species, still we should even then be unable to point to the precise moment when intellect shed its glorious rays upon the race, making bright, clear, and beautiful what before was dark, misty, and unmeaning. The ancient Prosimiæ gradually became Catarrhine apes, which, in their turn, as slowly assumed the characters of the Anthropoidæ, and afterwards of ape-like men; but the time required for this imperceptibly gradual process of evolution was probably many hundred thousands of years, during which period, or perhaps even at a prior time the first intellectual spark became manifest: how, when, or for what ultimate purpose it is apparently beyond our power to devise.

How soon after the dawn of intellect the conception of Deity was evolved in the human brain it is equally impossible to say; but the probability is that the date was a very early one, for it seems highly probable that such a conception would be among the very first efforts of the mind, the materials necessary for the stimulation of such an effort being at hand at any moment. We can imagine our early fathers groping in the darkness of ignorance, with mental powers on a par with those of the awakening minds of our own children, seeing bogies in every natural phenomenon, and tremblingly glowering at the spectra of their own imaginations. Having no experience of the past or knowledge of the future, they would indeed be in a most helpless condition, relying entirely upon the instinctive capabilities they had inherited from their ancestors. By degrees, however, their various faculties would be further awakened by impressions received from external objects; their wants would be multiplied in proportion to their intellectual development, causing them to manifest a desire for industry; and their self-consciousness would arouse within them a feeling of dignity and importance to which they had hitherto been strangers. Thus gradually would the race cast off its animal and put on its human clothes. The old plan of hand-to-mouth existence would be abolished by the newly-developed reason of man; the innumerable dangers which confronted him would undoubtedly stimulate him to approach his fellows with the object of establishing mutual aid and of co-operating for their common welfare; and a feeling of confident superiority over others of the animal kingdom would become apparent among them. Not only would man's

attention be arrested by the impending dangers of each day, the necessity of procuring sustenance for himself and family, and the obvious advantages accruing from co-operation, but also by the constantly-recurring natural phenomena, such as the rising and setting of the sun, moon and stars, the never-ending succession of day and night, etc., as well as by the no less wonderful, and certainly more awful, occasional natural occurrences, such as lightning, thunder, and earthquake. He would be as much struck with wonder and amazement at the one set of phenomena as with awe at the other. The returning sun-light would each morning produce joy in his heart equally as much as the inevitable recurrence each night of darkness would produce a feeling of sadness, dread, and despair. We can easily imagine the long hours of horror our first fathers must have passed through each night among the yells and howls of the savage monsters by which they were surrounded, and how they anxiously looked forward to the return of that glorious orb which would bring back to them daylight, sunshine, warmth, and happiness. What a boon it must have been to them! Can we wonder that they should have regarded the sun with particular affection? It would have been remarkable, indeed, had they not done so; and it is more than probable that this daily re-appearance of the sun on the eastern horizon was actually what prompted the first conception of deity. The very oldest mythology with which we are acquainted appears strongly to bear out this theory, and, indeed, in every other mythological system we find the re-appearing sun to be one of the principal objects of devotion and affection. If we turn our gaze to that part of Asia, along the banks of the Oxus, over which our Aryan ancestors wandered thousands of years before the time of the earliest Egyptian dynasty, we find there a clue to the origin of the original conception of deity. Among these early people were composed the hymns of the *Rig-Veda*, which are probably the earliest records of any race, and in which we find personified the phenomena of the heavens and earth, the storm, the wind, the rain, the stars, etc. The earth is represented as a flat, indefinite surface, existing passively, and forming the foundation of the whole universe; while above it the luminous vault of heaven forms a dwelling place for the fertile and life-giving light and a covering for the earth below. To the earth the Aryans gave the name of Prihovi, "the wide expanse;" the vault of heaven they called Varuna, "the vault;" while the light between the two, in the cloud region, they named Dyaus, "the luminous air," "the dawn." Varuna and Prihovi, in space, together begat Agni, the fire-god, the sun in heaven and life-giver of the universe; and Soma, the ambrosial deity of earth, god of immortality, fertiliser of the waters, nourisher of plants, and quickener of the semen of men and animals. In these hymns frequent mention is made of the joy experienced at the

return of dawn, and of the saddening effect produced upon the mind by the ever-recurring twilight which ushered in the dark and dreary night. We meet with incantations expressive of the wildest excitement at the welcome appearance of the dawn-god, Dyaus, which heralded the approach of the sun-god, Agni, who is led up to the summit of his ascension, or bosom of Varuna, by the conquering god of battle, Indra, the defeater of the evil powers of darkness; and we find the most pathetical appeals both to Agni and Indra to remain longer over the earth, and co-operate with Soma in replenishing nature, instead of sinking into the twilight, or shades of evening, to be slain by Vritra, "the coverer," and tormented in the darkness of night by Ahi, the dragon, and other cruel monsters. This is precisely the drama we should expect to find depicted in the earliest writings of man; is the root of all future religious ideas; and is still to be found pervading almost every modern religious faith. It is a beautiful representation of the earliest yearnings and fears of our forefathers; and, though the picture is now and then almost effaced by numerous subsequent additions of mythological lore, yet the original conception remains indelibly depicted in the religions of the present day, furnishing us with the key to the study of comparative mythology.

It will be necessary, in order to compare, with any degree of accuracy, the mythological systems which subsequently developed from this primitive conception of a ruling power, to glance at the mode of distribution of the various branches of the earliest human family; and in doing so we must ever keep in mind the more than probable fact that that portion of the earth's surface which is now covered by the Indian Ocean once formed a large equatorial continent, uniting the east coast of Africa with Arabia, India, Ceylon, and the Malay Peninsula. Instead of the rivers Tigris and Euphrates emptying their waters into the Persian Gulf, and the Indus into the Arabian Sea, it is highly probable that these rivers united to form one large estuary, which emptied itself into the ocean on the south of the now submerged continent of Lemuria. It is equally probable that the large rivers, Ganges and Brahmapootra, likewise found an outlet south of a line drawn from Point de Gall to Singapore. On this submerged continent, and on the shores of these long-lost streams, it is supposed man evolved from the anthropoid apes, in the early Pleiocene, or perhaps even in the later Meiocene, geological period of the world's history. The transition stage in the pedigree of man between the Anthropoidæ and true men—that is to say, between man-like Catarrhine apes and beings possessing a larger proportion of the characteristics of the human than of the ape species—is known to Anthropologists by the name of Alali, or ape-like men. These wild and ill-formed savages wandered about in bands along the banks of

these monster rivers, passing their time in hunting their less fortunate brethren of the animal kind. In course of time they multiplied and spread over the entire continent, killing all such monsters as interfered with their safety or comfort, and gradually dividing and sub-dividing into families and races, each acquiring, under the influence of the two laws of selection and adaptation, peculiarities and characteristics not common to the remainder. One branch wandered away to the west and south, becoming the progenitors of the South African races; another found its way to the east and south, to people Australasia; while a third struck out towards the north, overrunning Malaya, Burmah, and Southern India. This last branch, which we term the Malay, or Polynesian, subdivided into two distinct families—the Mongolian, or Turanian, the progenitors of the ancient Chinese, Ural Turks, Akkadians, and Finns; and the Caucasian, or Iranian, the first human inhabitants of South-Western Asia. Of these Iranians one stream, it is supposed, found its way to the banks of the Nile, and became, in course of time, a distinct and powerful Egyptian race; another, the Semitic, followed the direction of the Persian Gulf, and settled in Arabia and along the banks of the Euphrates; while a third, which we call the Aryan or Indo-Germanic, covered India, Afghanistan, and Northern Persia, gradually extending along the northern shores of the Black Sea into Europe.

Now, as already stated, the earliest known records of any race are the hymns of the *Rig-Veda*, composed among the Aryans of Northern Persia, probably from earlier traditions handed down to them from the older Iranian stock, or even from the still earlier Polynesians; and it is remarkable that in all ancient mythological records, as well as on monumental inscriptions, the same vein of solar myth as is found in the *Rig-Veda* is clearly traceable beneath the accumulated mythological lore of future ages. The main idea in all mythologies seems to have been that of a saviour-deity conquering the evil genius of night, or winter, and bringing back the day, or summer, to replenish the earth. As already stated, Indra was to the Aryans of the early Vedic period the saviour-god who, with his companions, Vishnu and Rudra, leads forth Agni, the god of celestial and terrestrial fire, to the bosom of Varuna, where his influence operates upon Soma, the fertilizer of earth. A conqueror from early morn to midday, Indra's power grows weaker as the evening approaches, until at last the twilight yields him up to Vritra, who slays him, after which he is tormented by Ahi, the dragon, for the remainder of the night. This drama was probably derived from the original Iranian stock, and as probably underwent considerable modification before being finally committed to writing as a cultus by the Aryans; and, therefore, we should expect to find some resemblance

between the Aryan, Semitic, and Egyptian mythological systems. This is precisely what we do find on carefully comparing these three oldest of all known mythologies, though, as will be seen further on, each accumulates such a vast quantity of fresh mythological matter that the original conception is considerably obscured, and in each the original deities become in course of time so mixed up with one another that it is almost impossible to separate their individual characteristics.

Although Agni was said to have been begotten by the conjunction in the air of Varuna and Prihovi (Prithivi), all the principal gods, or Devas, originally conceived as the phenomena and power of heaven, were called the children of Dyaus and Prihovi, Agni and Indra being considered the two chief of the twelve Devas. Dyaus, Prihovi, and their progeny afterwards became endowed with moral qualities, and were looked upon as creators and governors of the world; and as time wore on the original Vedic deities gradually gave place to purely solar deities: the sun was called Surya, and differed from Agni, who was god of terrestrial and celestial fire—sun, lightning, and altar fire in one, the soul of universe, and mediator between the gods and men; Surya was also Savitri, the quickener, who in the early morn rouses the sleepers, and in the evening twilight buries them again in sleep; he is also Vishnu, the companion of Indra, who traverses the celestial space in three long strides; he is Pushan, the nourisher and faithful guide of men and animals; and he is Yama, who traverses the steep road to death and the shades. Thus the gods multiplied—the original supreme deity, Varuna, who was one with Indra, though different from him, giving place to a multitude of solar deities, children of Dyaus, the great dawn-god or day-father.

As the old Vedic language became lost to the people there arose a custom of setting apart certain individuals to faithfully preserve the old and sacred records, and thus arose the priestly caste of Brahmans, whose duties consisted in transcribing the sacred hymns of the *Rig-Veda* and preserving the knowledge of the sacred language in which they were first written. The great day-father, Dyaus, now received the name of Brahma, the magic power, and Prajapeti, the lord of creatures, and was endowed with three divine energies—Agni (fire), Vayu (air), and Surya (the sun), which together formed a subordinate triad. Soma became associated with the moon; Asura became the demon of hell, which was peopled with tormenting monsters; Indra and Vishnu became blended with Surya; and Rudra was converted into Siva and identified with Agni. As Brahmanism progressed the principal worship on the shores of the Ganges gradually centred round Vishnu, who was supposed to undergo periodically a number of Avataras, or incarnations, by means of which he rescued fallen man from the fate awaiting him. These

descents to the lower world were very frequent, and appear to have had some connection with the zodiacal constellations; for we find the incarnation at one time taking place as a man, at another as a fish, at another as a lion, and so on.

The most ancient of the Avataras was probably the incarnation of Krishna, the Indian Hercules, who was mentioned in the Vedic writings as "Krishna, the son of Devaki," and in whose honour festivals were kept, at a very early period, similar to those connected with the cultus of Bacchus. Megasthenes found the worship of Krishna prevailing along the shores of the Ganges at the beginning of the third century before our era, and described it as the worship of Hercules. This incarnate offspring of the ancient sun-god, Vishnu, was said to have been born at Mathura, a place situated between Delhi and Agra, and to have acted the part of a saviour of the world and a mediator between the gods and men. Soon after his birth his life was sought by the reigning tyrant, Kamsa, who feared for the safety of his throne, which necessitated the removal of Krishna to a place of safety. Arriving at manhood, this young divinity slew the serpent Kaliya, and sported with the Gopîs, or female cowherds, among whom he had been brought up. He was fond of wine, Bacchanalian revels, and sensualities, though considered to be immaculately holy, and resigned to his fate, which was to suffer death in order to relieve the earth of the burden of a proud race. For this purpose he was incarnated in the womb of his mother, Devaki, and for this purpose he lived and died.

In the mountainous regions away from the Ganges the cultus of Siva was the more prevalent, Vishnu being considered of secondary importance; but, as sects gradually were formed out of the ancient religion, one party preferring this deity and another that, an attempt was made, which eventually proved successful, to re-unite the various religious parties and re-instate the principal gods in their original places. The ancient orthodoxy was brought into sympathy with the new religion in a very curious manner, by making Brahma, Vishnu, and Siva a trinity of essences or attributes of the supreme Brahm, each a supreme god in itself, and each equal with the others in importance; Brahma being specially the creator, Vishnu the redeemer or preserver, and Siva the destroyer. At times Krishna was added to the new trinity as a fourth figure; but this was an innovation which found little favour, inasmuch as Vishnu and Krishna were the same god, the one but the incarnation of the other. Thus the old idea of Prajapeti, or Brahma, with the three divine energies—Agni (fire), Vayu (air), and Surya (the sun)—were revived in a manner as a new trinity of essences of the supreme deity, under other names; and the arrangement thus concluded has continued in use to this day with the orthodox Hindus. We find, therefore, that,

despite the accumulation of fresh myths, which grew larger as time wore on, the original conception of the constant necessity for a divine saviour was never lost, and that, as the approach of night in the Vedic system was followed by the torments of the shades, and the powers of darkness were destroyed by the re-appearance of the dawn-god, so also the approaching extinction of the people under a wicked tyrant was followed by the misery which preceded the appearance of the saviour-god, Krishna. In fact, every myth that occurs in the religions of India is built out of this original idea of the powers of light being overcome by the powers of darkness and finally rescued by a redeeming god. In later times, as the science of astronomy became more popular and better understood, not only was the daily apparent course of the sun the source from which myths were fabricated, but his annual apparent march through the zodiacal signs was also drawn upon for the creation of more imposing and elaborate dramas; and in this manner were produced the fables containing allusions to the two crucifixions, or passage of the sun across the equator at the vernal and autumnal equinoxes, and the rites of baptism when the sun was passing through the sign Aquarius, and fasting during the period of the sun's transit through Pisces, etc.

The religion of Boodhism is an offshoot of the Brahman system, having originated in the so-called incarnation of Vishnu, Gautama Boodha, whose powerful personality has left an indelible impress upon the religion. This remarkable man lived about the end of the sixth century; but the real history of Boodhism does not commence until about the middle of the third century before our era. The doctrines taught by this great reformer were brotherly love, self-sacrifice, and an eternal Nirvana as the consummation of all bliss. The doctrine of the transmigration of the soul was still maintained; but a state of Nirvana, or absolute non-existence, was declared to be the deliverance from the endless succession of re-births for those who, by their purity of life and heart, merit such a blissful end. Admitting that men were born in different castes, determined by their good or evil deeds in a prior existence, Boodha yet declared that all might attain the highest salvation, and that none, not even those of the highest caste and most sacred offices, could do this without having regard to the well-being of all his fellow creatures. The authority of the Vedas was rejected by the Boodhists, as also the whole dogmatic system of the Brahmans; and in their place was substituted a higher moral teaching, a more equitable relationship of men, and a wide-spreading system of communism. This reformation of ancient dogmatic faith was not destined to last long uncorrupted, for the monasteries established by the Boodhists for the purpose of affording an asylum to the poor and destitute soon became

infested with religious fanatics—Jainas, as they were called, some of whom went naked, while others robed themselves in white linen. These ascetic monks looked forward to Nirvana as their final goal, practised the most severe austerities, received confession, administered priestly absolution, and kept regular feast and fast days; but they discountenanced the growing custom of worshipping relics which was finding favour with other Boodhist sects. Thus gradually the primitive Aryan conception of a ruling power developed into a huge system of dogmatism, monachism, and ritual in the countries south and east of the Indus, as far even as the confines of the country of the great Mongol race, whose religion is as yet but little known to us, although it bears strong marks of having been originally derived from the same source as that from which came the Vedic system.

Having glanced somewhat cursorily at the religious development of the Eastern Aryan peoples, we will now turn to the Western Aryans, and observe the manner in which the old Vedic myth was perpetuated in Western Europe, leaving the Central Aryans, or that branch which remained in and around Persia and Western Afghanistan, for subsequent consideration; for, in this central district, the Mongol Akkadians and the Semites intermingled so frequently with the Aryans that a very intricate mythological system gradually came into operation in some districts, bearing resemblance to the Vedic, the Semitic, and the Mongolian mythologies.

The Western branch of the great Aryan family, after penetrating into Southern Europe, became the progenitors of the ancient Pelasgi, the earliest known inhabitants of Greece, and through them transmitted the original Aryan myth to their successors, the Hellenes. Homer, in his "Iliad" and "Odyssey," written at latest B.C. 900, well describes the religion of the Acheans, who inhabited Hellas for centuries prior to B.C. 1000, and long before the supremacy of the Dorians; and, in this description, as well as in that of Hesiod's "Theogony," written immediately afterwards, there is exhibited a remarkable similarity to the old Vedic system, the very name of the supreme deity being clearly derived from an Aryan source, and that root being the identical expression used to designate the Vedic Dawn God. From Dyaus Pitar, the Day Father or Dawn God of the Aryans, the Greeks derived their Zeus Pater, from whence we get Dios, Theos, the Latin *Deus Pater*, *Dies Pater* and Jupiter, and the French *Dieu*. Zeus was supreme god, high above all others, having unlimited power, and living up in the vault of heaven, surrounded by the inferior and subordinate deities, who together formed his Olympian court. Instead of being nature powers, these gods were endowed with freedom of action, subject to pain and pleasure, and depended for their sustenance upon

food. The supremacy of King Zeus was firmly established; he presided over councils of the gods to deliberate great matters, and was not bound or fettered by any recognised restraint. With Athena and Apollo, he formed a supreme triad, himself being the head, Athena the reason or wisdom of the Divine Father, and Apollo the mouth, revealer of his counsel, and loving son, who is always of one will with his father. With Apollo was closely associated Prometheus, the great benefactor and liberator of the race of man, who, according to that beautiful tragedy of "Æschylus," brought salvation to the world in spite of Jupiter, his father and torturer, by whom he was crucified on a rock, where he remained in fearful anguish until liberated by Hercules. Here we find the old Vedic saviour redeeming the world from the darkness and misery of night or winter, the same drama precisely as that described in connection with the Eastern Aryan mythology. In both instances the apparent daily and annual ascension and decline of the sun is depicted: in the one case it rises again after its period of defeat in winter, or night, as the sun-god Indra, afterwards Surya, and still later Krishna; while in the other case it resuscitates the earth as Prometheus, the benefactor of mankind. Just as Prometheus was but the Greek counterpart of the Hindu Krishna, so also were Apollo, Hercules, Iao, and Dionysos precisely the same. Each was the new-born sun, bringing back light and glory to suffering humanity; and each passed through the very same periods of power, decline, and misery before being born again.

Zeus was the sun-god *par excellence*, residing on the summit of Olympus, or in the highest part of the heavenly vault, during the summer months, when he was called Olympian Zeus, and down in Hades during the winter period, when he was known as the Stygian Zeus; and thus the oracle of the Klarion Apollon taught that the supreme God was called, according to the seasons of the year, Hades, Zeus, Helios, and Iao. Apollo and Prometheus, although saviour sun-gods, representing the new-born sun victorious over death and winter, were yet one with Zeus, and merely repetitions of the same character under different names. So, in like manner, Hercules was not only son of Zeus, but Zeus himself, and may be traced right through the complete annual circuit in his twelve labours, from Hades to Olympus, and from Olympus to Hades again. Dionysos was, in reality, not an Aryan deity, but of Egyptian origin, having been introduced into Greece at a very early time, either from Egypt, where he was worshipped as Mises, or, more probably, from Phœnicia, where he was worshipped under the name of Iēs, which accounts for the fact that hero personifications of Dionysos in later times were accorded the designation of Iesous, (Ἰησοῦς, or in capitals ΙΗΣΟΥΣ—Latin *Jesus*),

the Greek form of Iēs (Ιης, or in capitals ΙΗΣ). This Egyptian saviour sun-god became later the popular god Bacchus of the Romans, just as Apollo had been the popular Greek divinity, and was thus described by Macrobius: "The images or statues of Bacchus represent him sometimes under the form of a child, sometimes under that of a young man, at other times with a beard of a mature man, and, lastly, with the wrinkles of old age, as the Greeks represent the god whom they call Baccapee and Briseis, and as the Neapolitans in Campania paint the god whom they honour under the name of Hebon. These differences of age relate to the sun, who seems to be a tender child at the winter solstice, such as the Egyptians represent him on a certain day [December 25th], when they bring forth from an obscure nook of their sanctuary his infantine image, because, the day being then at the shortest, the god seems yet to be but a feeble infant: gradually growing from this moment, he arrives, by degrees, at the vernal equinox, under the form of a young man, of which his images at that time bear the appearance; then he arrives at his maturity, indicated by the tufted beard with which the images which represent him at the summer solstice are adorned, the day having then taken all the increase of which it is susceptible. Lastly, he decreases insensibly, and arrives at his old age, pictured by the state of decrepitude in which he is portrayed in the images."

Yao, Iao, or Adonis was of Semitic origin, although widely worshipped in Greece, and generally identified with Zeus, whose Semitic counterpart he really was, although himself a saviour sun-god. Yao, to the Phœnicians and Chaldeans, was as Zeus and Prometheus to the Greeks, and represented the whole annual circuit, though he was always called by the Greeks specially the god of the autùmn, on account of his having, at that period, to part from his lover, Aphrodite (Venus), for six months; and thus there was usually a certain melancholy attached to his worship, the oracle of the Klarion Apollon terming him the darling or tender Yao (Ἰαώ), god of the autumn.

As the Greek power and civilisation declined and the Roman advanced, the god Yao, like his counterpart Iēs, became one of the most popular of the Roman deities, being worshipped under the name Adonis in every city of Italy; and the mythological horizon became crowded with gods and demi-gods of every description, until, at length, it became a very difficult matter to determine who was a god and who was not worthy of that distinction; for the Roman Emperors were invariably deified, as well as others of less degree. The old Aryan drama, however, was preserved throughout in the worship of the principal gods, and has even been perpetuated in the reformed religion of the Semitic communistic enthusiast, Yahoshua, which became, soon after

the commencement of our era, the popular religious system of the whole of Europe.

We have now to deal with the Central Aryans, or Eranians; and, in doing so, must bear in mind that, while the Eastern Aryans, or Hindus, and the Western Aryans of Europe, were almost altogether uninfluenced for many centuries by the mythologies of surrounding tribes of other and distinct families of the human race, this was far from being the case with the Eranians, who were almost entirely cut off from their Western brethren; and, although still in comparatively close contact with the Eastern Aryans, were yet completely wedged in between the Turanian Urals on the north, and the great Semitic stream of life on the south and west. Such being the case, it is at once apparent that the religion of the Eranian people would quickly lose many of its distinctive Aryan marks and acquire many Turanian and Semitic characteristics. Bactria, in Eastern Eran (Persia), appears to have been the ancient birthplace of this semi-Aryan religion, which afterwards developed, under the influence of that great reformer, Zoroaster (Zarathustra), into the cultus called Mazdeism, or Parsism. From the Avesta, the sacred writings of the Parsis, written in the old Zend language, we derive considerable knowledge of Mazdeism. Ahura Mazdao (Ormazd), the all-wise spirit, is supreme god, far above all gods, being creator of the world, god of light and truth, existing from the beginning, and eternal. Inferior to him are Mithra, god of light; Nairyo Sanha, god of fire; Apan Napat, god of water; Haoma, god of the drink of immortality; and Tistrya, the dog-star god. The chief goddess of fruitfulness was Anahita, who in later time became an important deity in association with the worship of Mithra, the son of Ormuzd. Mazdeism also recognised a god of evil, Ahro Mainyus (Ahriman), who, with the evil Devas, inhabit the underworld, and oppose Ormuzd on every occasion; the world lying between the two kingdoms of righteousness and evil, ruled over respectively by Ormuzd and Ahriman. This dualism is the most marked feature of Mazdeism, and runs through the whole religion, being found in every myth, and giving rise to the most hideous conceptions of morality. In the cosmogony of the Parsis the great creator, Ormuzd, after making a perfect world and introducing a perfect pair of human beings, is defeated by the wicked Ahriman, who creates evil, and seduces the man and woman to sin, thus placing in opposition to each other upon this earth the two forces, good and evil. To avoid the influence of this evil force, and to gain that of the good power, was the great aim of all true Mazda-worshippers; and the means whereby this much-desired end could be attained was the fire-god, Nairyo Sanha, to whom constant supplications were made for this purpose. So great was the influence of Ahriman upon human beings that the god of light, Mithra, was

promised as a saviour to come upon the earth and rescue his people from the power of evil, his mission being to avenge his father's defeat by the god of the underworld, after doing which he would ascend to his father and become one with him for ever. The Magi, or Mithraitic priests of the "black art," or "hidden science of astrology," are thus addressed in the "Zend-Avesta":—"You, my children, shall be first honoured by that divine person who is to appear in the world; a star shall be before you to conduct you to the place of his nativity; and when you have found him, present to him your oblations and sacrifices, for he is indeed your lord and an everlasting king," meaning that after the constellation of the virgin came to the eastern line of the horizon, as it did at twelve o'clock at midnight, between December 24th and December 25th, in the period immediately following that in which the words were written, the great star, *Vindemiatrix*, in the virgin's elbow, would, on January 6th, begin to shine, pointing out to the astrologers, or Magi, her exact situation, who would then know that the birth of the god-light of the new revolution had taken place, and that by his re-appearance he would declare himself to be the everlasting ruler of the universe. Consequently, for centuries after this time the image of the god-light Mithra was presented to the people for adoration every year on December 25th, soon after midnight, in the shape of a newly-born male child, brought from the recesses of the sacred grotto, or mystic cave of Mithra. Another image, supposed to be the same deity fully grown, was said to die, and was carried to the tomb after death by the priests, who chanted solemn hymns and groaned. After pretending to mourn for three days, the sacred torch, or emblem of new life, was lighted, and the priests exclaimed, "Reassure yourselves, sacred bands of initiated; your god is restored to life; his pains and sufferings procure your salvation." This took place at the vernal equinox, and the people responded: "I salute you, new light; I salute you, young bridegroom and new light."

Like the old Aryan scheme, this Mithra myth was derived from the constellations, having reference to the decline of the year in autumn, the defeat of the sun by the powers of darkness (or winter), and the re-birth and ascension of that grand luminary in the spring of the year. Mithra was "spiritual life contending with spiritual darkness, and through his labours the kingdom of darkness will be lit with heaven's own light: the eternal will receive all things back into his favour; and the world will be redeemed to God. The impure are to be purified, and the evil made good, through the mediation of Mithras, the reconciler of Ormuzd and Ahriman. Mithras is the good; his name is Love. In relation to the Eternal he is the source of grace; in relation to men he is the life-giver and mediator. He brings the Word, as Brahma brings the Vedas

from the mouth of the Eternal" (Plutarch, "De Iside et Osiride"). The close connection of the later Eranians with the Chaldeans no doubt gave the former facilities for studying the Akkadian astronomy; and, therefore, it is fair to presume that the phenomenon of the precession of the equinoxes was well understood by them, which would account for the fact that Mithra is always represented in earlier times under the figure of a bull, and afterwards under that of a lamb. The reason of this is that, prior to about B.C. 2,200, the vernal equinoxial sign was the zodiacal figure of the bull *(Taurus)*; while, after that period, the figure of the lamb or ram *(Aries)* took its place; and as the saviour sun-god Mithra was the personification of the new annual sun, born in the December constellation, crossing the equator in March, and thereby conquering the powers of evil or darkness, he was invariably represented by the figure of that zodiacal constellation which happened to be at the vernal equinoxial point at the time.*

Having thus briefly glanced at the religious cults of the three branches of the great Aryan family, and found the very same religious conception of a divine and incarnate saviour, redeeming the universe from the powers of darkness and evil, running through each mythological system, we cannot help coming to the conclusion that, inasmuch as the saviour-myth was developed into its full proportions long after the separation of the families took place, and inasmuch as the development followed similar lines in each separate case, there must have been some common guide, and that guide was the unwritten word of nature as expressed in the heavens above.

Leaving the Aryan stream, and turning back to that division of the great Iranian family which migrated to the valley of the Nile, and which we call the Egyptian, we find a very similar religious system in vogue among them from the very earliest times, as existed among the Aryans. The first settlers in Egypt carried with them, no doubt, the primitive religious conceptions of their Iranian fathers, which were derived from a contemplation of the various phenomena of nature, as previously stated; and it is highly probable that, at a very early period, they gave considerable attention to the movements of the heavenly bodies, for from monumental inscriptions, unearthed in modern times, which geologists inform us must have lain *sub terra* for several thousands of years, we learn that the Egyptians, at that remote time, well understood the theory of the precession of the equinoxes, placing the zodiacal constellation of the bull at the vernal equinoctial point in the period prior to about B.C. 4300, and that of the ram in the period immediately following. It is probable, therefore, that hundreds of years before this time these

* *Vide* my "Popular Faith Unveiled."

primitive men of the Nile were engaging themselves with the study of astronomy, and using effective astronomical instruments, which indicates a high state of civilisation; and this is further borne out by the fact that, at the commencement of the first Egyptian dynasty, about the year B.C. 5000, when Menes reigned over Egypt, there was every appearance of a very advanced civilisation that had lasted for centuries. From the "Book of the Dead" and the Prisse Papyrus (most of the former written at latest prior to B.C. 4000, and the latter very soon after) we derive a tolerably accurate notion of the mythological system of the Egyptians during the first portion of the Old Empire, and probably many hundreds of years previously; while, from the writings of Herodotus, Diodorus, Plutarch, and Manetho, we learn the progress the religion made during the 4,000 following years.

The "Book of the Dead" treats principally of the refining processes through which the spirits of dead people passed in the under-world, or Cher Nuter, before being purified sufficiently to inherit a state of bliss and become spirits of light (Chu) to be absorbed into the sun at the point where it is born, and taken within it to An, the celestial Heliopolis. Before the time of Menes the religion of Egypt was animistic, blended with a vague kind of sun-worship, the supreme deity being, at Thinis-Abydos, the ancient capital, called Osiris, the god of gods, son of Seb, god of earth, and Nu, goddess of the heavenly ocean, and grandson of Ra. Osiris was the sun-god of the daily and annual circle, who enjoyed his spouse, Isis, the great mother, during the summer months and the daytime, after which he was overcome by the evil Set-Typhon and his wife Nephthys, and tortured in the under-world, until released by his son Horus, the conqueror sun-god, who rose into the upper world as the avenger of his father's defeat, and liberated the soul of Osiris from torture, to be absorbed by, and for ever shine forth in the constellation *Orion*, as the soul of Isis shines for ever in *Sirius*. At Heliopolis, An, On, or Para, the city of the sun, Ra was worshipped as supreme god, who as Tum, the hidden god, fought the demon of darkness, the serpent Apap, in Amenti, and who rose again from the under-world as Harmachis. Later, when Menes reigned as the first monarch of the Old Empire (*circa* B.C. 5000), Memphis, or Mennefer, was the capital city, in which Phtah was worshipped as the supreme god or creator of the world (called Sekru, the slain god, when in the lower world), together with Ma, goddess of righteousness, and Imhotep, the chief of priests, whose name signified "I come in peace," and who formed the third part of a kind of trinity, with Phtah and Ma. All these, and other minor deities, such as deified kings, etc., were represented on earth by incarnations in the shape of animals, Ra, Osiris, and Phtah, the supreme gods, being manifested in the sacred bull Apis, representing the sun at

the vernal equinoctial point in the zodiacal constellation *Taurus*. During six dynasties these gods were worshipped peacefully, their incarnations and religious rites being protected by the kings; but about the year B.C. 3800 the kingdom appears to have dropped to bits, its religion to have been mixed up in a most confused manner, and its people divided into a number of small nationalities, with separate kings and separate laws; until, at length, the whole country was once more united under the reigning monarchs of the eleventh dynasty (Second Empire), whose capital was Thebes, and whose popular deity was Amen, the hidden god, called also Amen-Ra, to signify that he was not only the sun-god in the under-world, but also the rising and conquering sun-god of the early morn and spring of the year. In fact, Amen was the sun-god of the whole revolution, the Theban Yao, one with his father Osiris in the mid-day and mid-summer, one with his counterpart Horus at the early morn and spring of the year, and one with Tum in the darkness of night and winter; just as Zeus of the Greeks was Zeus Amen (Jupiter Ammon), Olympian Zeus, Zeus Yao, and Stygian Zeus, according to the season of the year.

Between the Middle Empire and the New Empire another catastrophe occurred to the Egyptians, in the form of an invasion of the Hyksos, or shepherd kings of Arabia, who overran the whole country, destroyed the temples, and levied heavy tribute on the people, eventually settling down for four centuries as Kings of Egypt, adopting many of the native customs, and introducing many Semitic deities and observances. At last the Hyksos were driven forth, and the New Empire commenced with the eighteenth dynasty; but a considerable difference was now found to exist in the religion of the country, partly on account of the introduction of Semitic rites, and partly owing to the change that had taken place at the vernal equinoctial point, by the precessional movement of the zodiacal constellation *Taurus*. The vernal equinoctial point was now (B.C. 2000) in the sign *Aries*, and therefore the principal deities should be no longer represented as incarnate bulls, but as incarnate rams. Accordingly, we find that after this date the bull-god Apis, or Serapis, gradually fell into disrepute; and Amen, who was now the supreme and representative god, was worshipped as an incarnate ram, being depicted as a man wearing ram's horns.

Another mode of worshipping the young sun-god, born at the winter solstice, December 25th, was that known as the Mysteries of the Night, or Passion of Osiris, at which an idol of the infant Horus, or Amen, called also the Holy Word, was presented to the people in its mother's arms, or exposed to view in a crib for the adoration of the people by the priests, who were, according to Adrian, called Bishops of Christ (χριστός, the anointed one); and when King Ptolemy, B.C. 350, asked

the meaning of the custom, he was informed that it was a sacred mystery. During these mysteries, which took place annually, bread, after sacerdotal rites, was mystically converted into the body of Osiris, to be partaken of by all the faithful, who were called Christians; and an idol representing the body of the god, stretched on a cross within a circle, was placed upon the mystic table for adoration and praise.

The winter solstitial point is really December 21st; but the ancients always kept the festival of the birth of the sun-god on December 25th, because at twelve o'clock, midnight between December 24th and 25th the uppermost stars in the constellation *Virgo* made their appearance above the horizon, being the first indication of the birth of the new sun, which had taken place exactly three days and three nights previously. This gave rise to the popular superstition that the new sun-god was born of a virgin, from whose womb he had been trying to extricate himself for the space of three days and three nights. From this the idea prevailed that the sun-god underwent similar periods of struggle also at the summer solstice and the two equinoctial points; and thus arose the legend of the two crucifixions, the one at the vernal equinox, when the sun in *Aries* crossed the Equator and was crucified as the "Lamb of God" on March 21st, commencing the ascension to heaven on March 25th; and the other at the autumnal equinox, when the sun in *Libra* (the balance of justice) crossed the Equator and was crucified as the "Just Man" on September 23rd, descending to hell for three days and three nights, after which he emerged into the shades until born again at the winter solstice.

A very popular deity of the Lower Nile was Mises (drawn from water), the sun-god of wine and mirth, who was born on Mount Nyssa (Sinai), and was found as a babe in a box floating on the Red Sea, and who, by means of his magic wand, took his army dry-shod through the Sea and the rivers Orontes and Hydaspes, drew water from rocks, and caused the land through which he passed to flow with milk, wine, and honey. He was depicted with a ram's horn on his forehead, being the personification of the new-born sun delivering the world from the powers of darkness, and was afterwards worshipped in Phœnicia as Iēs, in Greece as Dionysos (Διόνυσος, God of Nyssa), son of Zeus, and in Rome as Bacchus. The temples dedicated to this sun-god were, in the time of the Greek kings of Egypt, very gorgeous, the mystic table having upon it, not only the infant in its cradle, the transubstantiated bread, and the Osirian crucifix, but also a bleeding lamb, the emblem of the sun-god at the vernal equinox, over which was placed the Phœnician name of Mises, Iēs, in Greek capitals (ΙΗΣ), surrounded by the rays of glory, to signify that he was the risen and crucified sun-god, and one with Horus and Amen-Ra.

Turning to the third great division of the Iranians—viz., the Semites, who migrated to the Valley of the Euphrates, we find a more or less complicated religious system, varying in accordance with the amount of intercommunication which took place between the Semites and the tribes belonging to the Aryan, Mongolian, and Egyptian families. The earliest Semitic settlement was in the district stretching from the Euphrates to the Red Sea and Mediterranean, and their religion was, at first, one of pure animistic polydæmonism, varying enormously in details of drama in the different tribes, but exhibiting in all common characteristics.

All early Semitic peoples worshipped the sun-god, Shamsh, and all were moon, planet, and star-worshippers to a very large extent; but, as the race became divided into Northern and Southern Semites, a distinct difference gradually arose between the religious cults of the two branches. The Southern, or Arab, tribes, on account of their more isolated situation, retained the original Semitic mythology, worshipping the sun as their chief god, Shamsh, the moon as his consort, and the stars and planets as inferior gods and goddesses, the *Pleiades* being objects of special homage. Shamsh was father of all, and disappeared to the underworld at night to rest in slumber until awakened into activity in the morning as Yachavah, his son, who became one with his father.

The Northern Semites, on penetrating, at a later period, the borders of Mesopotamia, came in contact with a powerful and advanced civilisation, which had been already established by the Akkadian branch of the Northern Mongolian family, and thus the original Semitic religion became very much modified by the introduction into it of many of the Mongol, as well as some also of the Aryan, myths.

Very little is known of the Akkadian mythology; but it is pretty certain that they were, at a very early period, acquainted with the science of astronomy, and that the Chaldeans, their successors, who were a mongrel race, partly Akkadian and partly Semitic, invented the cuneiform writing to take the place of the old Mongolian hieroglyphic characters. From what we know of the religion of the old Mongol Chinese empire prior to 1200 B.C., it was a kind of spirit-worship, the Shang-ti, or supreme spirit, being Thian (Heaven), who, in co-operation with Heu-thu (earth), produced everything. Man, according to this cultus, had two souls, one of which ascended after death to heaven, while the other descended into the earth, both being absorbed respectively into Thian and Heu-thu.

The Akkadians, who were but a branch of the same race as the progenitors of the ancient Chinese, also worshipped spirits, the greatest of whom was Ana (the highest heaven), the next Mulge (the hidden

heaven in the interior of the earth), and the third Ea, the god of the atmosphere and of moisture. After these came an inferior group—Uru-ki, the moon-god; Ud, the sun-god; and Im, the wind-god. The spirits were divided into good and bad, which were constantly at war with each other; and thus was introduced into the religion of the semi-Semitic Chaldeans the dualistic notion of good and evil existing in conflict throughout all time.

The Northern Semites may be conveniently divided into four distinct nations—viz., the Chaldeans (Babylonians and Assyrians), who were partly Semitic and partly Akkadian, the Aramæans, the Canaanites, and the Phœnicians. These peoples soon became acquainted with the astronomical learning of the Akkadians, and were taught the wonderful phenomenon of the precession of the equinoxes; and it is highly probable that the fact of the vernal equinoctial sign having changed shortly before B.C. 2000 from that of the Bull to that of the Ram or Lamb had much to do with the changing of the old Semitic name Shamsh to that of El, as a designation of the sun-god, El (אל) being the old Chaldean word for Ram.

Owing to the mixed character of the Chaldean nation, their religion was a peculiar blending of the Akkadian and Semitic mythologies, El Ilu, or Ilah, being their chief deity; but, instead of sinking into the lower world each night for peaceful slumber, as the older Shamsh had done, he became the victim of the wicked demons, who tormented him all through the dark hours, until he was avenged by his son Yachavah, who thereby became the conqueror and saviour god, one with his father Ilu, and yet different. To a great extent the religion of the purely Semitic tribes of the north was affected by this Chaldean myth; but there arose many points of difference between them. The Assyrians worshipped El under the name of Asur, their national deity, the Babylonians converting the name into Bel; while the pure Semites worshipped him as Bel and Baal in the west, and as Al in the south. Out of the story of El and Yachavah was fabricated the great Adonis myth of the Chaldeans, which became so popular in future times among all the Semites except the Arabs of the south, who retained the original character of the supreme Shamsh, El or Al (afterwards Allah), and his son Yachavah, afterwards Yahouh. This Adonis drama, as originally conceived, was that El reigned in supreme power and glory in the highest heaven, enjoying the delights of his spouse Istar, but that in the autumn the wicked gods of winter overcame him, separating him from his lover, and tormenting him all through the winter months, until in the spring he conquered the evil demons as Adon, the beautiful youth, who is restored to his mourning Istar. The worship of Adonis, or Adon was generally adopted by all the Northern Semites, the god becoming

eventually the most popular deity of the Semitic people, being known as Yao (IAΩ of the Greeks) to the Phœnicians, Yahoo (יהוה) to the Canaanites, and Tammuz to the Aramæans, while his lover Istar became the Phœnician Ashtoreth. Iēs, the god of wine, and Greek Dionysos, was another saviour sun-god worshipped largely by the Phœnicians; but was most probably of Egyptian origin, being identical with Mises, the Egyptian Bacchus. As already stated, the Southern Semites of Arabia retained, in common with their Ethiopian brethren, the old and simpler worship of the supreme god El and his son Yahouh, although, owing to their propinquity to Egypt, many strange inferior deities had been introduced into Arabia from that country, which resulted, in much later times, in the formation of various religious sects, each having a particular tribal deity, or patron god, though all recognising El as supreme. One of these tribes, with Yahouh as their tribal god, on which account they were called Yahoudi, having left their native Arabian home, penetrated far into the country of the Northern Scmites, learning from the Canaanites, Phœnicians, and Babylonians the strange legends of the Northern Semitic deities, including the Adonis myth; and, after wandering about for many years, one large portion of their tribe settled in the delta of the Nile, while the remainder crossed the desert of Syria and approached the confines of Babylonia, finally settling in the barren and rocky interior of Syria. and making the spot where now stands the small town of El-Khuds (Jerusalem) their headquarters. During their long wanderings they became acquainted not only with the various Semitic myths of the north, but also with the Babylonian and Persian legends, and incorporated a quantity of strange deities and customs into their own rude and primitive religion, thus manufacturing a very complicated and weird system of mythology.

The date of the Yahudean migration into Syria was certainly not earlier than about B.C. 250, despite the declaration of interested parties that these people were known as Israelites and Jews for centuries before that time. The following quotation from Major-General Forlong's "Rivers of Faith" is worth reproducing on this point:—"The first notice of the Jews is, *possibly*, that of certain Shemitic rulers of the Aram, paying tribute about 850 B.C. to Vool-Nirari, the successor of Shalmaneser of Syria, regarding which, however, much more is made by Biblicists than the simple record warrants. This is the case also where Champollion affirms that mention is made on the Theban temples of the capture of certain towns of the land we call Judea, this being thought to prove the existence of Jews. Similar assumption takes place in regard to the hieratic papyri of the Leyden Museum, held to belong to the time of Rameses II.; an inscription read on the rocks of El-Hamamat, and the discovery of some names like Chedor-

laomer in the records of Babylonia; but this is all the 'evidence' as to the existence of ancient Jews which has been advanced, and the most is made of it in Dr. Birch's opening address on 'The Progress of Biblical Archæology,' at the inauguration of that Society. The only *logical* conclusion justifiable, when we give up the *inspiration* theory, is that Arabs and Syro-Phenicians were known to Assyrians and Egyptians, and this none would deny. Indeed, we readily grant with Dr. Birch that, 'under the nineteenth and twentieth Egyptian dynasties, the influence of the Armencean nations is distinctly marked; that not only, by blood and alliances, had the Pharaohs been closely united with the princes of Palestine and Syria, but that the language of the period abounds in Semitic words, quite different from the Egyptian, with which they were embroidered and intermingled.' Could it possibly be otherwise? Is it not so this day? Is a vast and rapidly-spawning Shemitic continent like Arabia not to influence the narrow delta of a river adjoining it, or the wild highlands of Syria to its north? Of course, Arabs, or Shemites, were everywhere spread over Egypt, Syria, and Phenicia, as well as in their ancient seats of empire in Arabi Irak (Kaldia), and on the imperial mounds of Kalneh and Kouyunjik, *but not necessarily as Jews.* I cannot find that these last were anything more than possibly a peculiar religious sect of Arabs, who settled down from their pristine nomadic habits, and obtained a *quasi* government under petty princes or sheks, such as we have seen take place in the case of numerous Arabian and Indian sects."

Again, the author of "Rivers of Faith" remarks: "No efforts, say the leaders of the Biblical Archæological Society, have been able to find, either amid the numerous engravings on the rocks of Arabia Petrea or Palestine, *any save Phenician inscriptions*—not even a record of the Syro-Hebrew character, which was once thought to be the peculiar property of Hebrews. '*Most of those inscriptions hitherto discovered do not date anterior to the Roman Empire*' (Dr. Birch, President of Soc., op. cit., p. 9). 'Few, if any, monuments (of Jews) have been obtained in Palestine' or the neighbouring countries of any useful antiquity, save the Moabite Stone, and the value of this last is all in favour of my previous arguments on these points. At the pool of Siloam we have an 'inscription, *in the Phenician character*, as old as the time of the kings.....It is incised upon the walls of a rock chamber, apparently *dedicated to Baal, who is mentioned on it.*' So that here, in a most holy place of this 'peculiar people,' we find only Phenicians, and these worshipping the Sun-God of Fertility, as was customary on every coast of Europe, from unknown times down to the rise of Christianity. The Biblical Archæological Society and British Museum authorities tell us frankly and clearly that no Hebrew square character can be proved to

exist till after the Babylonian captivity, and that, 'at all events, *this inscription of Siloam shows that the curved or Phenician character was in use in Jerusalem itself under the Hebrew Monarchy, as well as the conterminous Phenicia, Moabitis*, and the more distant Assyria. No monument, indeed,' continues Dr. Birch, 'of greater antiquity, inscribed in the square character (Hebrew), has been found, *as yet, older than the fifth century*, A.D.; and the coins of the Maccabean princes, as well as those of the revolter Barcochab, are impressed with *Samaritan* characters.'" As to the Moabite Stone, I would refer my readers to a little work entitled "An Inquiry into the Age of the Moabite Stone," by Samuel Sharpe, the celebrated author of "The History of Egypt," in which will be found abundant evidence to prove that the inscription on the Stone is a forgery of about the year A.D. 260.

Apart from the history contained in the books of the Old Testament, there is absolutely no record of the Jews as an independent people, except that contained in the writings of Josephus (about A.D. 100); and, although that author may be tolerably trustworthy when relating matters near to his own time, yet in his description of Jewish antiquities he evidently, as he himself asserts, rests only on tradition. For instance, he alone records the story of Alexander entering the holy place at Jerusalem and offering sacrifice on the altar; but Arrian, in his "Anabasis of Alexander the Great," where he specially treats of the life and actions of this great conqueror, says not one word about such a place as Jerusalem, or about such a story as that recorded by Josephus. Curtius, who wrote a far more detailed account of the life and conquests of Alexander, mentions neither Jerusalem nor the story of Alexander and the holy place. Herodotus, about B.C. 430, when narrating the two raids of the Scythians through Syria, as far as Egypt, says not a word about any Jews. Xenophon, who wrote 150 years after they were said to have returned from Babylon, or about B.C. 386, appears to have been unconscious of their existence, only mentioning the Syrians of Palestine. Neither did Sanchoniathon, Ctesias, Berosus, nor Manetho even once mention them as a nation. Diodorus also, when writing of the siege of Tyre by the soldiers of Alexander, neither mentions the Jews as a nation nor Jerusalem as their chief town. In fact, we have no account of them at all, except that contained in the Old Testament and that in the writings of Josephus, until we find them subject to the Romans, under Antiochus Epiphanes, about B.C. 165, when in all probability they had just settled down into a dependent nation, having been driven into Syria by the Babylonians, whose fertile valleys these Arabian nomads had attempted to colonise. Being surrounded on all sides by nations whose religions so very far surpassed their own in development, it did not take long for the Yahoudi (afterwards called

Jews) to become affected by the mythological dramas of their neighbours; and, in carefully examining the mythical records of their tribe, we find that they very soon became acquainted with, and in some cases offered worship to, almost all the purely Semitic and Chaldean, as well as to a few of the Egyptian, deities. Their principal god always remained as before, El (אל) signifying the zodiacal sign *Aries*, the heavenly ram and first of the twelve zodiacal figures. Combined with Yah (יה), the abbreviation of Yahouh (יהוה), their tribal deity, it formed a compound word, Eloh (אלוה), or Elyah (אליה, the ו and י being interchangeable), the plural of which was Elohim (אלהים), a word used frequently in the Bible to signify the supreme God. Bearing in mind the fact that the fables of the Bible are not actual history, but merely so many accounts of the ever-recurring phenomena of the sidereal heavens, and that in the various saviour myths the vernal equinoxial sign, or saviour sign, *Aries*, was looked upon as the supreme god, who housed the new-born sun on his first appearance in the upper world, just as in the present day the song of praise on Easterday is "Worthy is the lamb who was slain (crucified) to receive the power and bring back salvation to the world," the meanings of these names of the supreme deity become apparent at once. All the words—and, in fact, almost every divine name found in every divine record—signify the sun in one or other of the divisions of his annual or daily apparent march, or else one of the divisions itself. El signifies the first and saviour sign of the zodiac, the celestial ram, and is always used when the winter period is referred to, because from the autumnal to the vernal equinox the sun-god, Yahouh, is separated from the ram, El, which remains god of the lower world, until again united with its spouse, the sun, at the vernal equinox, becoming the ram-sun-god, El-Yah or Eloh, whose plural is Elohim, the ram-sun-gods, from the vernal to the autumnal equinox, when the sun and *Aries* are together for six months. At a later time, when the old Bacchus worship was revived at Alexandria in the person of the young Semitic Yahoshua, who was named Iesous, we have a good illustration of this when the sun-god, in his agony at being separated from the ram at the autumnal equinox or crucifixion, exclaimed: "Eloi, Eloi, lama sabachthani?"—"My ram, my ram, why hast thou forsaken me?" In, I believe, every instance in which the plural word, Elohim, is used in the Bible the reference is to the summer half of the year, from the vernal to the autumnal equinox, when El and Yah are together. We meet with El—in its Babylonian form, Bel; in its Aramæan forms, Bel and Belus; and in its Phenician form, Baal—frequently in the Bible, and often in combination with other deities, as El-Shaddai and Bel-Shaddai (בעלשדי), signifying the "breasted ram," or the ram

at the vernal equinox, the period of suckling.* Other forms of the same divine name were Baal-Berith, god of the equinox or covenant (*co-venire*, to come together, as when the ecliptic crosses the equator at the two equinoxes or crucifixions); Baal-Yah and El-Yah, rendered in the authorised version respectively Bealiah and Elijah, when in reality they signify the god Yahouh, or ram-sun-god; El-Yah also does duty for Joel; Elishah signifies the saviour ram; Eliakim, the setting ram; Eleazar, the creating ram; Samuel, the god of fame, or famous ram; Daniel, the ram judge; and Israel, the struggle with El. The Phenician Hercules wrestled with Typhon (the sun at the meridian) in the sand, just as Israel or Jacob wrestled with Elohim in the dust—Hercules, like Jacob, being wounded in the thigh; and the Canaanites knew the Greek Hercules, who wrestled with Zeus, by the name of Ysrael.

Baal-gad (בעלגד) was the god of Fortune, Gad being a Babylonian deity representing fortune, which was placed at the foot of Hermon for public worship. From this deity G D (גד) are derived the English words God and Good, the German Gott and Gut, the Danish and Swedish Gud, and the Wesleyan Methodist Gawd. Baal-Peor was the Phallic deity (*Deus Vulvæ*), god of the opening, worshipped largely by the Hebrews, who, as General Forlong points out, "had a strong solo-phalik fire-and-serpent cult. They all had Bâal, Nebu, and Peor on their high places; Yachavah or Yahuê, the 'Grove,' or Asherah [Ashtoreth] and fire in their central groves." Baal Zephon was the god Typhon; Baal Hermon was another name for Gad, god of Fortune; Baal Hazor was the god Hathor; and Baal Hamon (בעלאמון) was the god Amen, or Jupiter Ammon. The word Yahouh, in various terminal forms, was frequently used to designate the sun at different times and seasons—as Joseph, the lamented Yah; Jehu, Yahouh himself; and, according to Gesenius, Jehozabad, Yeho the giver; Jehohanan, Yeho is good; Jehoiada, Yeho is knowing; Jehoshua, or Joshua; Jehoshaphat; Jehoiakim; Hoshea; Zedekiyah, etc. Yahoshua (Joshua) was the Canaanitish name for the Phenician Yēs or Iēs, and Egyptian Mises, and became in Latin Josue, or Jesus, according to whether the Romans referred to the Phenician or Canaanitish Bacchus, whose histories, though similar in the main, differed considerably in details. The Egyptian Mises became also the Jewish law-giver and leader, Moses, and is described in Ex. xxxiv. as being horned like Bacchus (*vide* my "Popular Faith Unveiled"). The Adonis myth occurs over and over

* El not only signified a ram, but also a lamb, or any other kind of sheep. The vernal equinoxial sign, for instance, of the Persians was a lamb, while that of the Egyptians was a ram.

again in fragments throughout the Bible, the Babylonish name Adon frequently being found in that form (אדן), in its Hebrew rendering Adonai (אדני), and occasionally in its Aramæan form of Tammuz. It occurs alone, as in Psalm cx. 1, "Yahouh said to Adonis, sit at my right hand;" in Isaiah vii. 14, "Therefore our Adonis himself shall give you a sign;" and in conjunction with Yahouh, as in Isaiah vii. 7, "Thus saith Yahouh, our Adonis," and numerous other places. It also occurs with different terminations, to signify different forms and positions of the sun-god—as Adoniyah or Adonijah, Adonis is Yahouh; Adoni-zedek, the liberated Adonis; Adoni-bezek, the rising Adonis; etc. The old Semitic sun-god Shamsh remained, as of old, the Hebrew שמש (Shemosh), signifying the sun; and his Greek *alter ego*, Hercules, the sun-hero, was not forgotten either, for we find a very poor attempt to reproduce him in the history of Samson. Moloch, Dagon, and other Semitic deities are also introduced into the Jewish Scriptures. There is one other deity frequently met with which must now be named, and that is the Egyptian Amen—the Zeus Amen (Σεύς Ἀμήν) of the Greeks, and the Jupiter Ammon of the Romans. This god Ammon (אמן or אמון) was worshipped by the Jews as the equal in power to, and the very counterpart of, Yahouh, and was called by the very same names by which he was known to the Egyptians—viz., the hidden god, true and faithful witness (which epithet gave origin to the Greek adverb, Ἀμην, truly), and saviour of the world, or regenerator of nature. In Isaiah xlv. 15 we read, "Truly thou art the hidden god of Israel, the saviour;" and, again, in chapter lxv. 16, "He who blesses himself on earth shall bless himself by his god Ammon (אלהיאמן); and he who sweareth in the earth shall swear by the god Ammon, because the former troubles are delivered to oblivion, and because they are hidden from mine eyes." This hidden or occult god, Ammon, or Amen, is frequently addressed in the Psalms and other places, and is there identified with Yahouh and Adonis. In Psalm xxvii. 8, 9, we read, "Seek ye my face. My heart said to thee, Thy face, O Yahouh, will I seek. O hide not thy face from me;" and Psalm x. 1, "And why standest thou so far off, Yahouh, and hidest thy face in the needful time of trouble?" Psalm lxxxix. 46 says, "Yahouh, how long wilt thou hide thyself?" Verses 49, 50, "O our Adonis, where are thy loving kindnesses of old, which thou swearest to David in thy truth?" and verse 52, "Blessed be Yahouh for evermore (who is) Ammon, even Ammon." In Isaiah i. 15 we also read, "When ye spread forth your hands I will hide myself from you; yea, when ye make many prayers I will not hear you." We find the same god also in the New Testament Scriptures of the later Christian sect of Eclectic Egyptian Jews. In the Apocalypse, for instance, the word Ἀμην is rendered "Amen" in the authorised

version, and is sometimes met with as a Greek noun, Ὁ Ἀμὴν (never heard of in the classics), when it is rendered "the Amen," which senseless rendering is no doubt intended to conceal the real and obvious meaning. In Rev. i. 18 we read, "I am he that liveth and was dead, and behold I, Ammon, am alive for evermore," the word Ἀμὴν being rendered "Amen;" and in chap. iii. 14, "These things saith Ammon ["the Amen" in the authorised version], the true and faithful witness, the beginning of the creation of God." As the celestial ram or lamb, *Aries*, Amen is again mentioned in chap. xiii. 8, "The lamb which has been slain from the foundation of the world"—that is, each year at the vernal equinox, when the occult god rose from his hiding-place in the lower hemisphere to bring salvation to the world.

This concludes the examination of the old sun-myth religions; but there are yet three very important religious systems to be dealt with—viz., Confucianism, Mohammedanism, and Christianism.

Confucianism took its birth in the sixth century B.C., at a time when the old solar myth was very extensively believed in China and the neighbouring countries, and was, strictly speaking, a system of morality and conduct. Its author, Confucius (Kong-fu-tse), was born B.C. 550, in Lu, a province of China, and at a very early age commenced to preach a higher and purer morality among the Chinese people, many of whom became regular followers of the young reformer, and followed his good example by likewise teaching the people at every favourable opportunity. He was strongly opposed to all false show, hypocrisy, and deceit, and abhorred the life of a hermit as unnatural and mischievous. He preferred not to speak of heaven as a personal being, as was the habit of his countrymen, but was exceedingly fond of quoting its example as the preserver of order, frequently alluding to its commands, ordinances, and purposes. He attached no value to prayer, preached the doctrine that good and evil are rewarded on the earth by prosperity and adversity, and expressed his disbelief in special revelations to men. The canonical books of the Confucians are known as the five *Kings* (the historical *Shu-King*, the psalms of the *Shi-King*, and the ritual of the *Li-ki*, the chronicles of the *Tshun-tsiew*, and the magical *Yi-King*), and the three volumes containing the remarkable and benevolent utterances of the master Confucius himself—viz., the *Lun-yu*, the *Ta-hio*, and the *Tshung-yung*. In the *Ta-hio* occur those celebrated and beautiful moral passages which have so justly immortalised the name of Confucius. The one is the 24th moral: "Do unto another what you would he should do to you, and do not to another what you would should not be done to you. Thou needest this law alone; it is the foundation and principle of all the rest." The other is the 53rd moral: "Acknowledge thy benefits by return of other benefits, but never avenge injuries."

Notwithstanding the great persecution of Confucians in B.C. 212, by the Ts'in rulers, and other smaller attempts to destroy the new system of morality in favour of the sun-gods, the moral code of Confucius was publicly permitted to be used in A.D. 57, and since the seventh century has almost entirely taken the place of god-worship, a few only of the more uneducated classes still professing to worship Fo-hi.

Mohammedanism, or Islamism, the reformed faith of Arab polytheists, arose in the sixth century of our era. Mahomet, or Mohammed, was a young religious enthusiast, a camel-driver of Mecca, who determined to uproot the idolatry and superstition of the Arab tribes, and was singularly successful in his arduous undertaking. He had a powerful aversion to all kinds of priestcraft, sacrifices, and superstitious ordeals, and boldly preached the unity of God, declaring that "there is but one God, and Mahomet is his prophet." Of all the religions of the world, perhaps none has been more successful than this; and, certainly, not one ever spread so rapidly over the face of the earth. In less than 100 years after the decease of the prophet the Khalifs of Islamism were masters of the whole of Northern Africa, Spain, and part of France, besides a great portion of Asia; which vast territories they retained possession of for about 600 years, encouraging the while philosophical and scientific studies, establishing libraries, schools, and universities, and otherwise benefitting the human race. At the present day upwards of 100,000,000 people embrace this faith, whose God is Allah, the great unity, whose prophet is Mahomet, and whose Bible is the Koran.

We now come to Christianism, that widely-spread faith, whose cradle was Alexandria, whose nursery was Rome, and whose workshop was Europe. The founder of this religion, if he ever lived at all, about which there is considerable doubt, was a young ascetic monk belonging to the Essenes—a Syrian branch of the large order of Therapeutæ—whose headquarters were in Alexandria. His name was Yahoshua ben Pandira and Stada; he was born about B.C. 120, in the reign of Alexander Jannæus; and he preached the doctrines of Confucius, declaring publicly that the priests were liars and hypocrites, and inculcating communistic and socialistic theories. He gained many lowly followers, who followed him about preaching in the open air, and begging their bread from day to day, and, at last, was publicly executed for his seditious conduct.

At the same time a remarkable mental revolution was taking place in Greece and Egypt, the natural homes of mythology; the University of Alexandria and the Academic Groves of Athens were fast sending to the right-about-face the old superstitions, much to the dismay of the priests and religious fanatics, who were driven to their wits' end to know

how to counteract this dangerous tendency of the age towards infidelity and science. The idea struck them of utilising for their purpose the new sect of religious reformers, who lived according to the teaching of the young socialist, Yahoshua; they boldly declared that this man was, when on earth, an incarnate deity, and proceeded to attribute to him all the miraculous performances that had been previously imputed to the sun-god Bacchus; and commenced forthwith to prepare their documentary evidences ready for the ignorant and credulous multitudes. A new sect of the Therapeut monks of Alexandria came into existence, called Eclectics, whose mission was to collect all that was good and useful in the religions of their neighbours, and commit them to manuscript for the use of their monasteries and the priestly class generally. It did not take long to fabricate a very imposing story of the young man Yahoshua, whom they now called Iesous (Ἰησοῦς, a name used by the Greeks to signify a hero personification of the sun-god Bacchus, the Phœnican Ιης), Greek being at that time the prevailing language of Lower Egypt. The performances of the ancient sun-gods of Egypt, Persia, Arabia, India, Greece, Phœnicia, and Italy were recalled to the minds of these Eclectic monks, by diligent search among their old musty MSS., and, after carefully and judiciously collating the fables, they were enabled to clothe their new Iesous, or Jesus, with all the leading characteristics of these various deities. He was born of a virgin at midnight between December 24th and December 25th, as were all the sun-gods: his birth, like that of Mithra and that of Krishna, was foretold: a star pointed out the place of his nativity, as in the case of Mithra: his birth-place was a manger in a stable, as in the case of Hercules; or, according to another account, a cave, as in the case of Mithra and Horus: he cured the sick, as did Æsculapius: he fasted in the wilderness, as did Buddha: he performed miracles, as did Bacchus, Hercules, and others: he turned water into wine, as did the Egyptain Bacchus, and as was done at the Bacchanalian orgies: he was crucified, as were also Krishna, Osiris, and Prometheus: he rose from the dead after having been in the grave three days and three nights, as did all the sun-gods: he descended to hell, as did all the sun-gods: he was called Saviour (Σωτήρ, Gr., and Saotès, Egyp.) and Lamb of God *(Agnus Dei)*, as were all the sun-gods (Ζεύς Σωτήρ, Mises Saotès, etc.); Amen, as was Jupiter Ammon (Ζεύς Ἀμήν); Christ, or the Anointed (χριστός), as was Osiris; Son of God, as were Plato's Logos (λόγος), Bacchus, Mithra, and Horus; Holy Word (of Plato and Philo), as also was Horus; God of Love, as were Adonis, Mithra, and Krishna; Light of the World, as were all the sun-gods; and, like his *alter ego*, Krishna, The Resurrection, The Incarnate, The Beginning and the End, Existing before All Things, Chief of Prophets, and Messenger of Peace: he was the

incarnation of one third of a trinity, as were also Horus, Krishna, and Plato's Logos: his day was called the Day of the Sun: his followers were called Christians, and his priests Bishops of Christ, just as were those of Osiris: his priests absolved sins, received confessions, and practised celibacy, as did the priests of Bacchus, Adonis, Mithra, Krishna, Buddha, etc.: his feast was called the Lord's Supper and the Mystery of the Night, as were those of Bacchus, Adonis, and Osiris: these suppers became, in course of time, obscene midnight orgies, as did those of Bacchus and Adonis: at these suppers the insignia over the table were the letters I H Σ (the Phœnician name of Bacchus, in Greek capitals), surrounded by the rays of light and surmounted by a crucifix and a bleeding lamb, precisely as was the case with the Bacchanalian orgies: at the Lord's Supper bread and wine were transubstantiated into the body and blood of Jesus, exactly as was done in the case of Bacchus and Osiris: and lights were used at these feasts just as they were at the Bacchanalian orgies.

These fables were carefully compiled together, attributed to various imaginary authors, and finally issued to the people as an appendix, or New Testament, to the volume of the old Jewish Scriptures, or Old Testament. Thus were gathered together by the Alexandrian Eclectics the principal essentials of all the old mythological cults, and thus came into existence the huge and powerful system of religion called Christianism, which has been the great curse of Europe for well nigh two thousand years. From the brutal murder of Hypatia, in a Christian church, by the fanatical mob of a Christian bishop, down to the last poor wretch burnt alive at the stake by the orders of the Church of Jesus, the story of Christian infamy is not relieved by one bright spot. Humanity stands aghast, and shudders at the hideous tale of crime which the history of Christian Europe unfolds. It is one long wail of anguish, poured forth by suffering man, finding relief only in the silence of the grave—that stronghold of peace within which neither god, devil, priest, nor tyrant can wreak their diabolical vengeance further. How terrible have been the sufferings of poor Humanity under the ghastly shadow of the Cross is beautifully expressed in Shelley's "Queen Mab," in the dialogue between the spirit of Ianthe and the Fairy Queen:—

SPIRIT. I was an infant when my mother went
To see an Atheist burned. She took me there:
The dark-robed priests were met around the pile
The multitude was gazing silently;
And as the culprit passed with dauntless mien,
Tempered disdain in his unaltering eye,
Mixed with a quiet smile, shone calmly forth:

The thirsty fire crept round his manly limbs ;
His resolute eyes were scorched to blindness soon ;
His death-pang rent my heart ! the insensate mob
Uttered a cry of triumph, and I wept.
Weep not, child ! cried my mother, for that man
Has said, There is no God.

FAIRY. There is no God !
Nature confirms the faith his death-groan seal'd :
Let heaven and earth, let man's revolving race,
His ceaseless generations, tell their tale ;
Let every part depending on the chain
That links it to the whole, point to the hand
That grasps its term ! Let every seed that falls,
In silent eloquence unfold its store
Of argument : infinity within,
Infinity without, belie creation ;
The exterminable spirit it contains
Is Nature's only God ; but human pride
Is skilful to invent most serious names
To hide its ignorance.
The name of God
Has fenced about all crime with holiness,
Himself the creature of his worshippers,
Whose names and attributes and passions change,
Seeva, Buddh, Foh, Jehovah, God, or Lord,
Even with the human dupes who build his shrines,
Still serving o'er the war-polluted world
For desolation's watchword ; whether hosts
Stain his death-blushing chariot wheels, as on
Triumphantly they roll, whilst Brahmins raise
A sacred hymn to mingle with the groans ;
Or countless partners of his power divide
His tyranny to weakness ; or the smoke
Of burning towns, the cries of female helplessness,
Unarmed old age, and youth, and infancy,
Horribly massacred, ascend to heaven
In honour of his name ; or, last and worst,
Earth groans beneath religion's iron age,
And priests dare babble of a God of peace,
Even while their hands are red with guiltless blood,
Murdering the while, uprooting every germ
Of truth, exterminating, spoiling all,
Making the earth a slaughter-house !

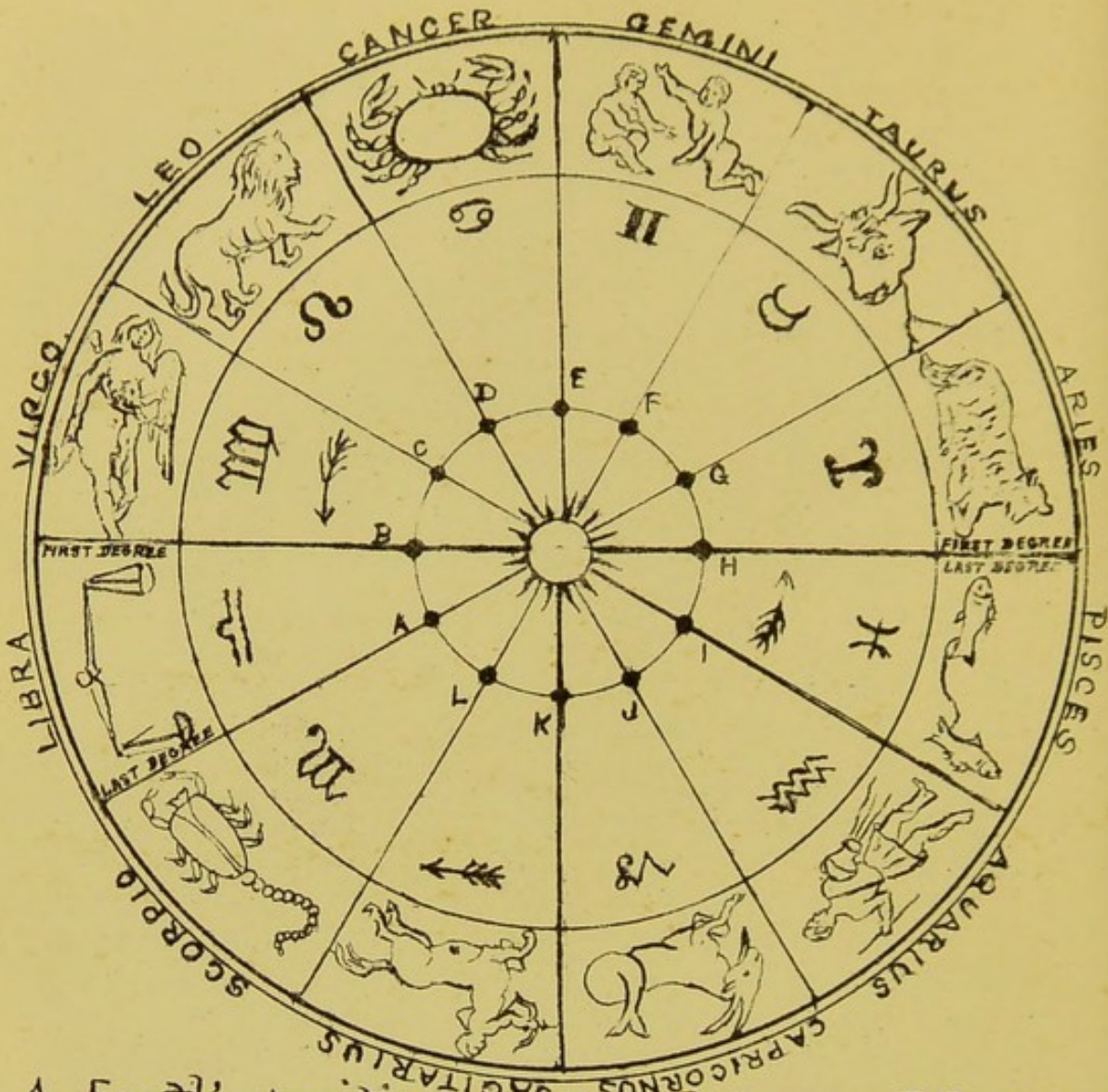
There is no God ! What, then, caused this mighty universe ? To be caused implies a cause, certainly ; and that cause must, in the very nature of things, be adequate for the production of the effect manifested. But, inasmuch as cause and effect are but relative terms, the cause could not exist independently of the effect, and *vice versâ*. Therefore, as far as the human mind is capable of mentating, the universe could not

have been caused. It is, therefore, eternal. What that inherent power of matter is that hides itself so mysteriously behind the phenomena of nature we cannot tell, further than that, being the inherent property of eternal matter, it also is eternal. This point is the limit of the human understanding, beyond which it is apparently impossible at present for the mind of man to soar. In the words of Mr. Herbert Spencer, "there is a power behind humanity and behind all things; a power of which humanity is but a small and fugitive product; a power which was, in the course of ever-changing manifestations, before humanity was, and will continue through all other manifestations when humanity has ceased to be." This power, of which matter and motion, thought and volition, are but the phenomenal manifestations, and which regulates the varied movements of those myriads of stellar systems interspersed throughout the infinity of space—this exhaustless power of life and energy is to the human mind, as at present constituted, unknowable. Call it Law; call it Gravity; call it the Mysterious Unknown; but call it not God, that word which has brought so much bitter anguish to humanity, and which blighted the beauty of nature, causing hate where love should be, and tears to fall where smiles should gladden the heart of man. Whether or not the mind of man in future ages will be able to lift the veil that at present lies between him and the Great Unknown time alone can tell.

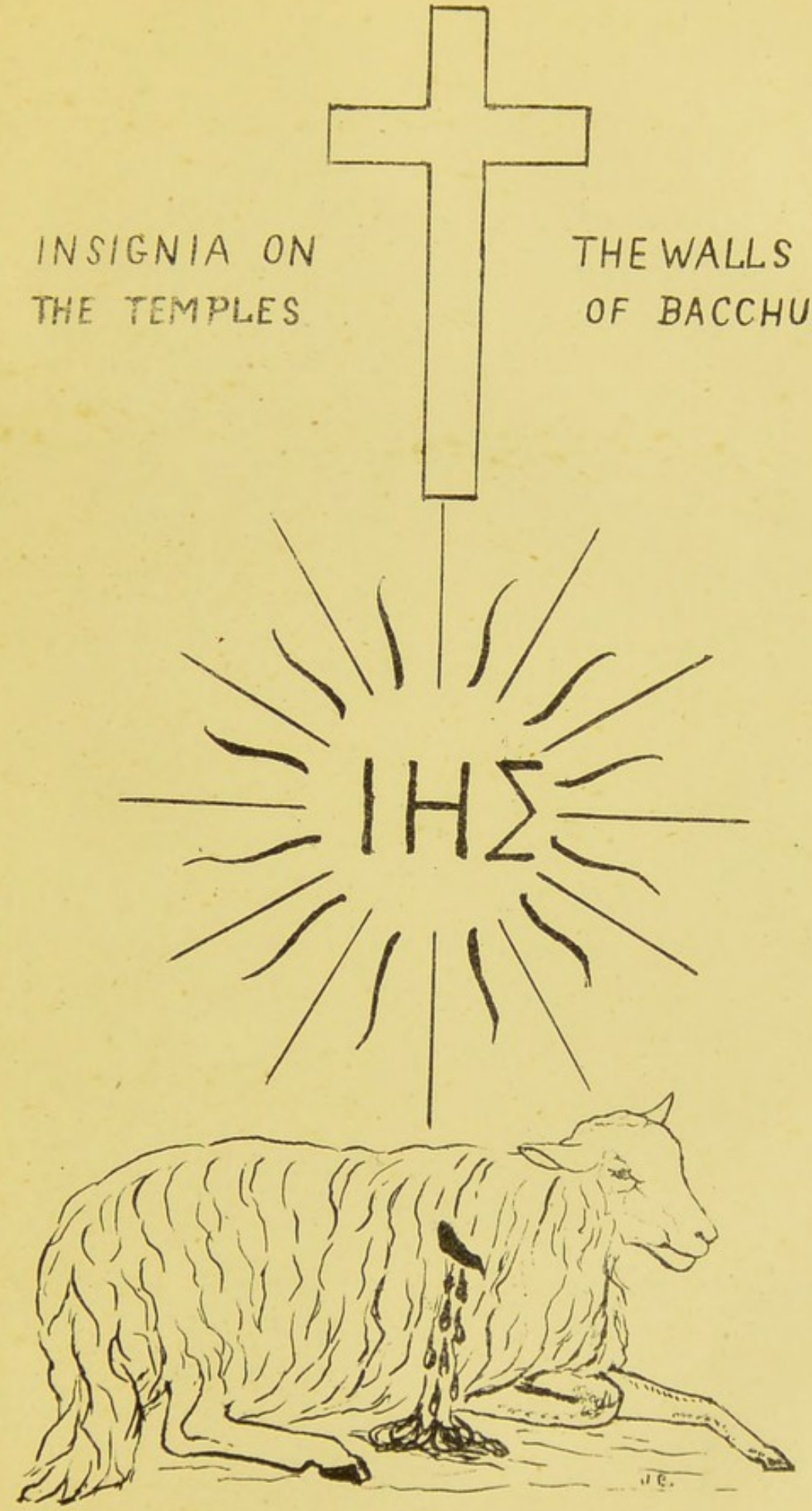
At present we are at the mercy of an imperfectly-developed nervous organisation, with its five special senses, which, though very far superior to the lowly nervous development of our remote ancestors of millions of centuries back in the history of life, is perfectly inadequate for the solution of the great problem of existence. But a time will probably arrive in the dim and misty future when other and more important senses will be evolved within the human frame, which may bring man nearer the elucidation of this greatest of all mysteries. Meanwhile let us apply ourselves boldly to the uprooting of the old Upas tree of religious faith—that pernicious development of the god-idea that has been the constant blight of all ages, stifling reason by fostering blind faith and gross credulity, robbing the race of all that is noble, manly, and honest, by the propagation of those canker worms, hypocrisy and cant, and retarding the temporal salvation of man by the substitution of the vain and foolish theory of future rewards and punishments.

Printed by Watts & Co., 17, Johnson's Court, Fleet Street, London, E.C.

ZODIACAL SIGNS



A	Earth's position at Vernal Equinox	B.C. 4340.
B	.. ..	2188.
C	.. ..	36.
D	.. .. .. Winter Solstice ..	4340.
E	.. ..	2188.
F	.. ..	36.
G	.. .. .. Autumnal Equinox	4340.
H	.. ..	2188.
I	.. ..	36.
J	.. .. .. Summer Solstice ..	4340.
K	.. ..	2188
L	.. ..	36.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THE TEMPLES
THE WALLS IN
OF BACCHUS
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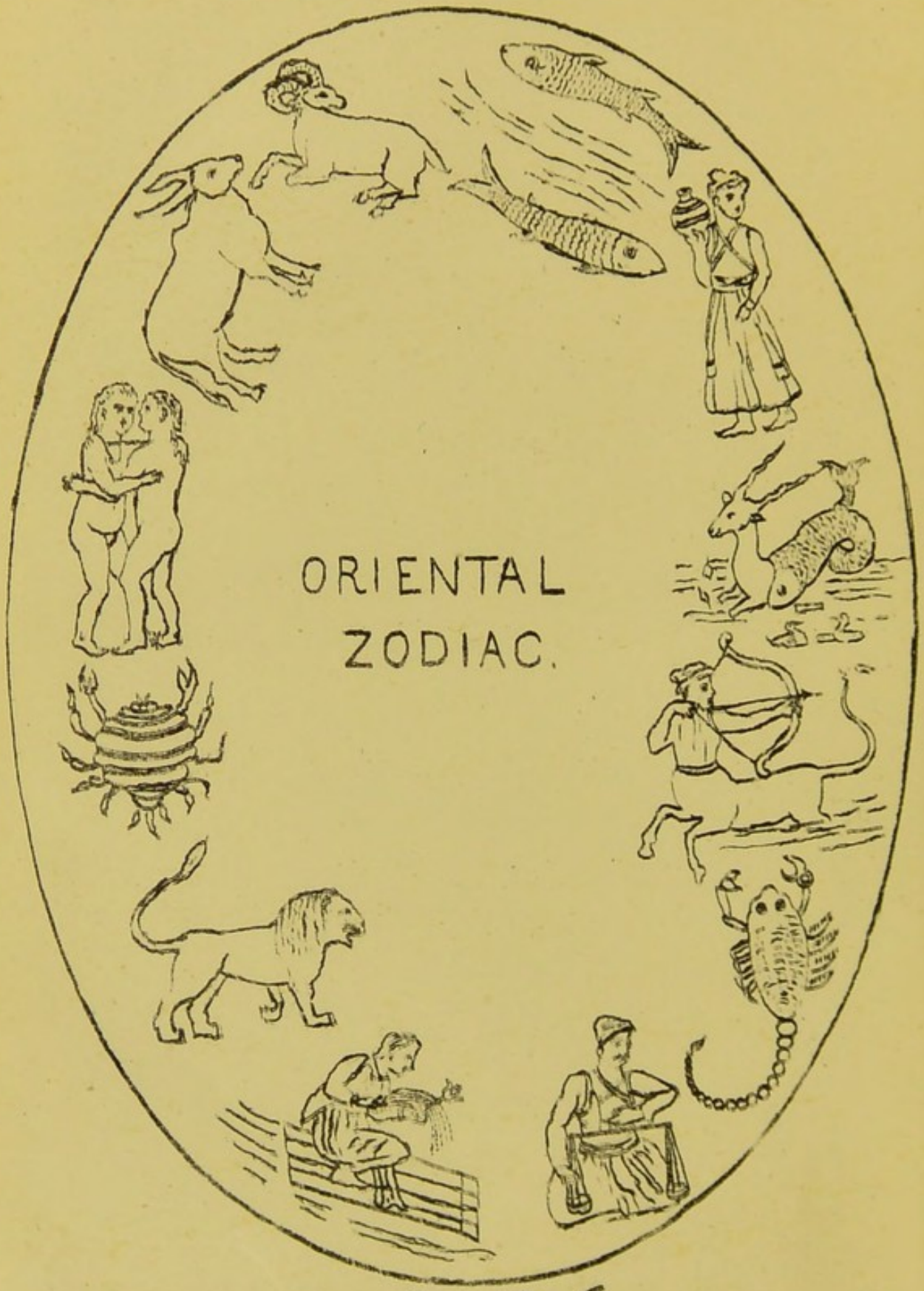
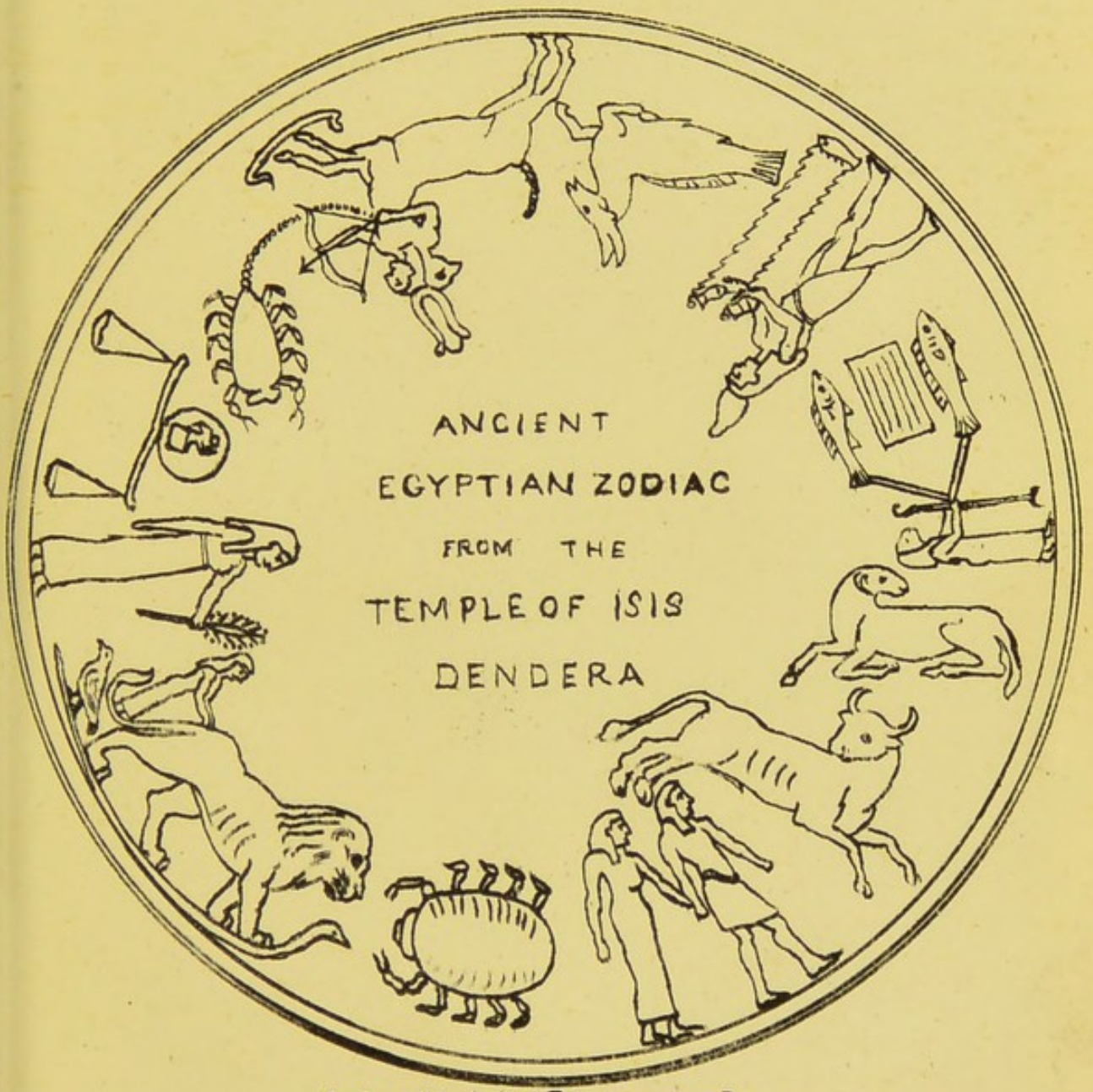
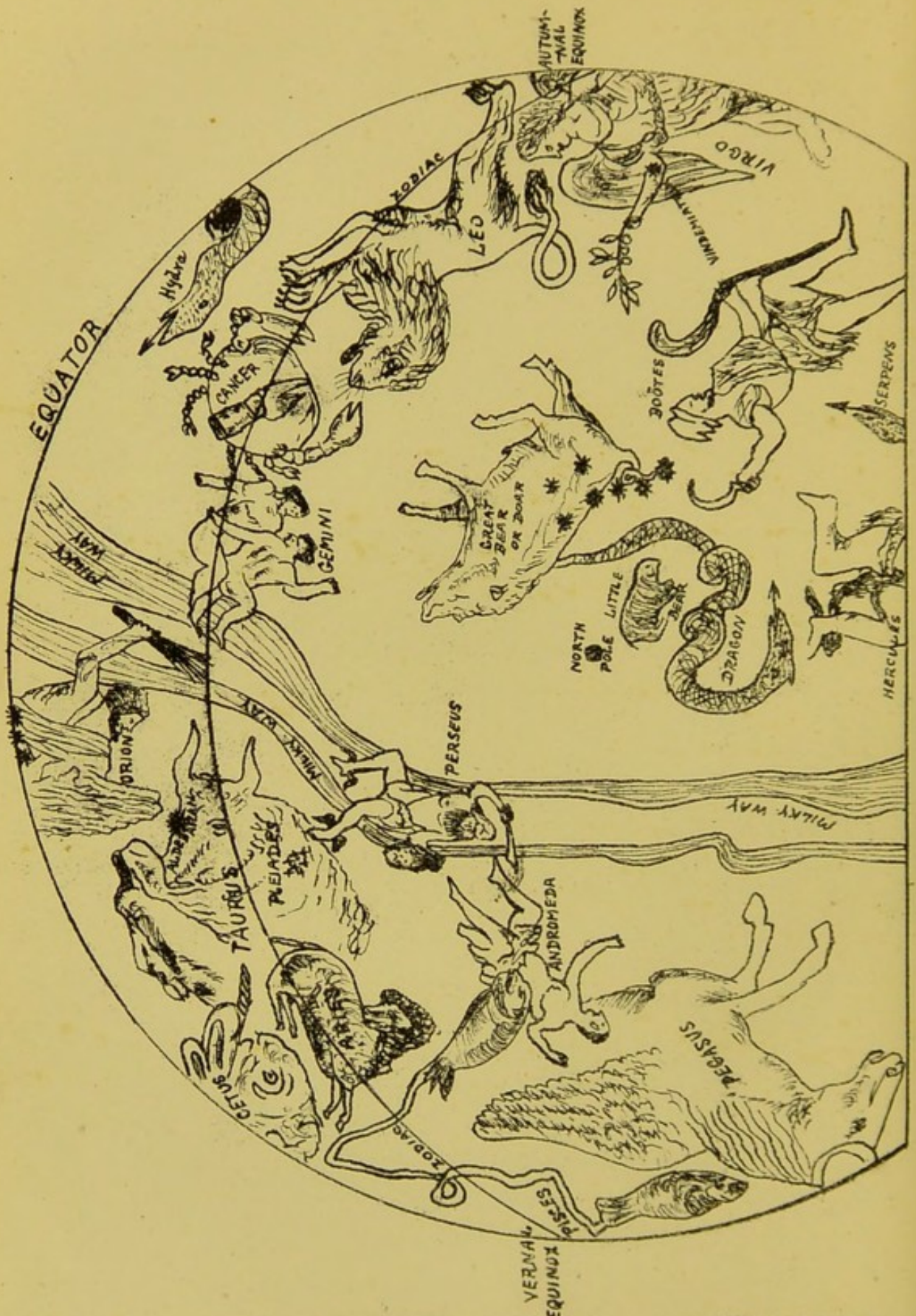


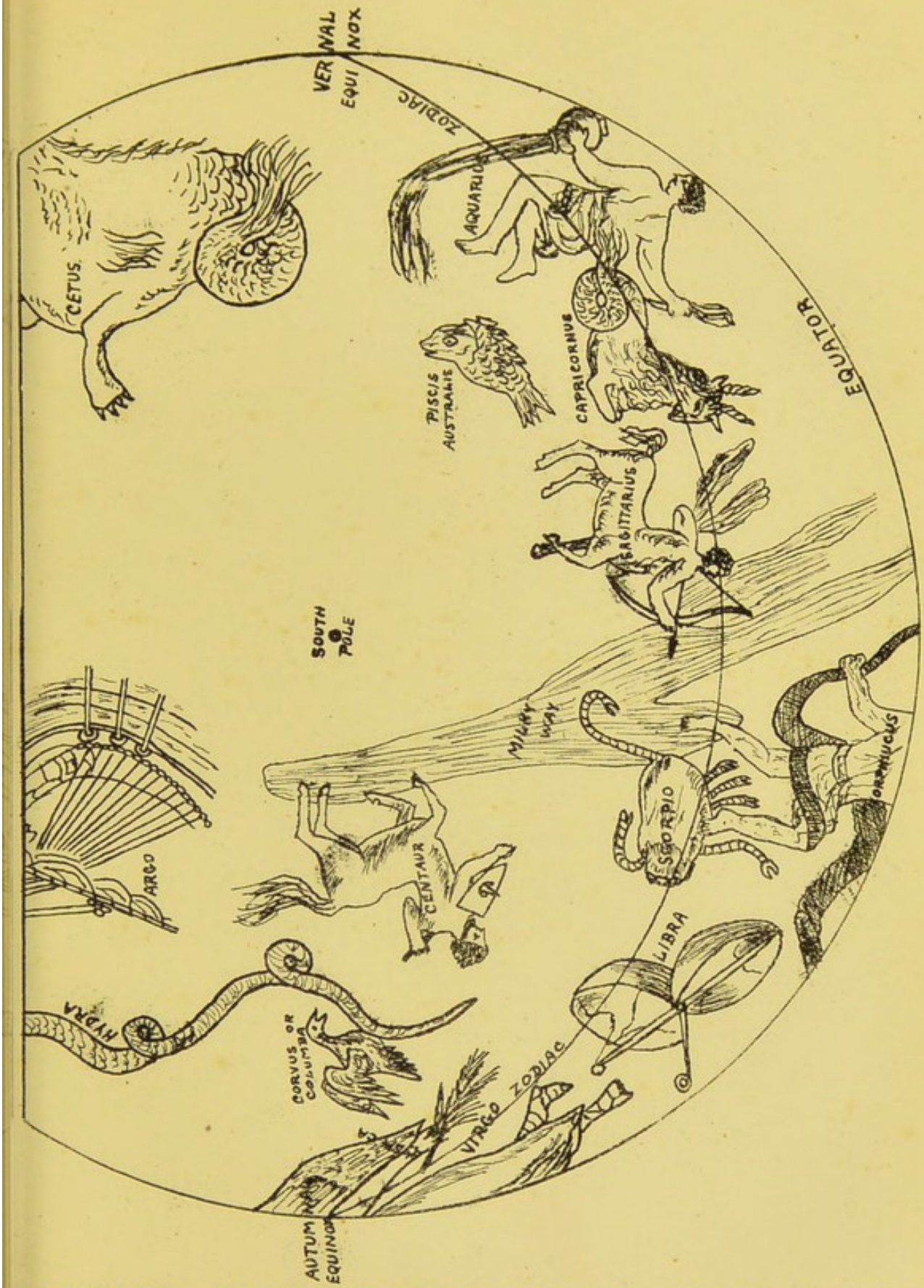
After Sir Wm. Jones.



Agter Sir Wm. Drummond.

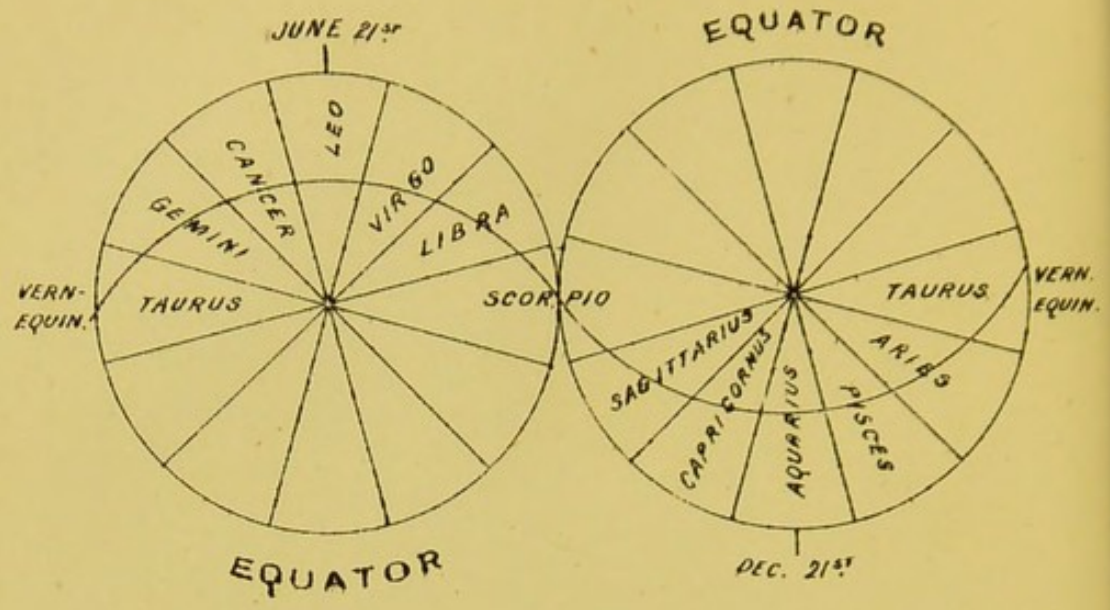


NORTHERN SIGNS AND EXTRA-ZODIACAL CONSTELLATIONS
B.C. 36 to A.D. 2116.

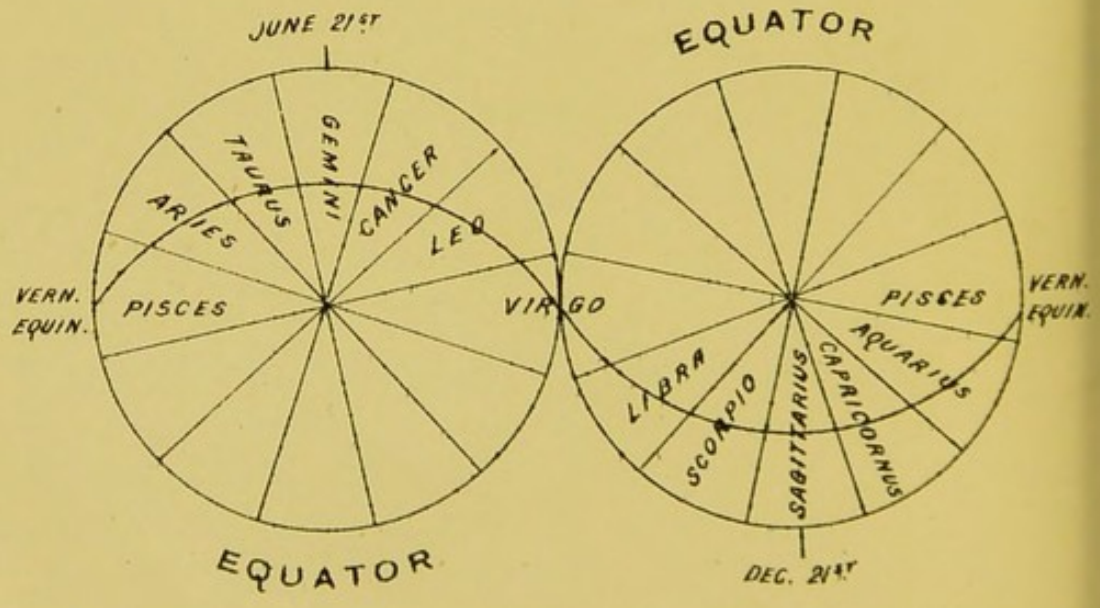


SOUTHERN SIGNS AND EXTRA-ZODIACAL CONSTELLATIONS.
B.C. 36 to A.D. 2116.

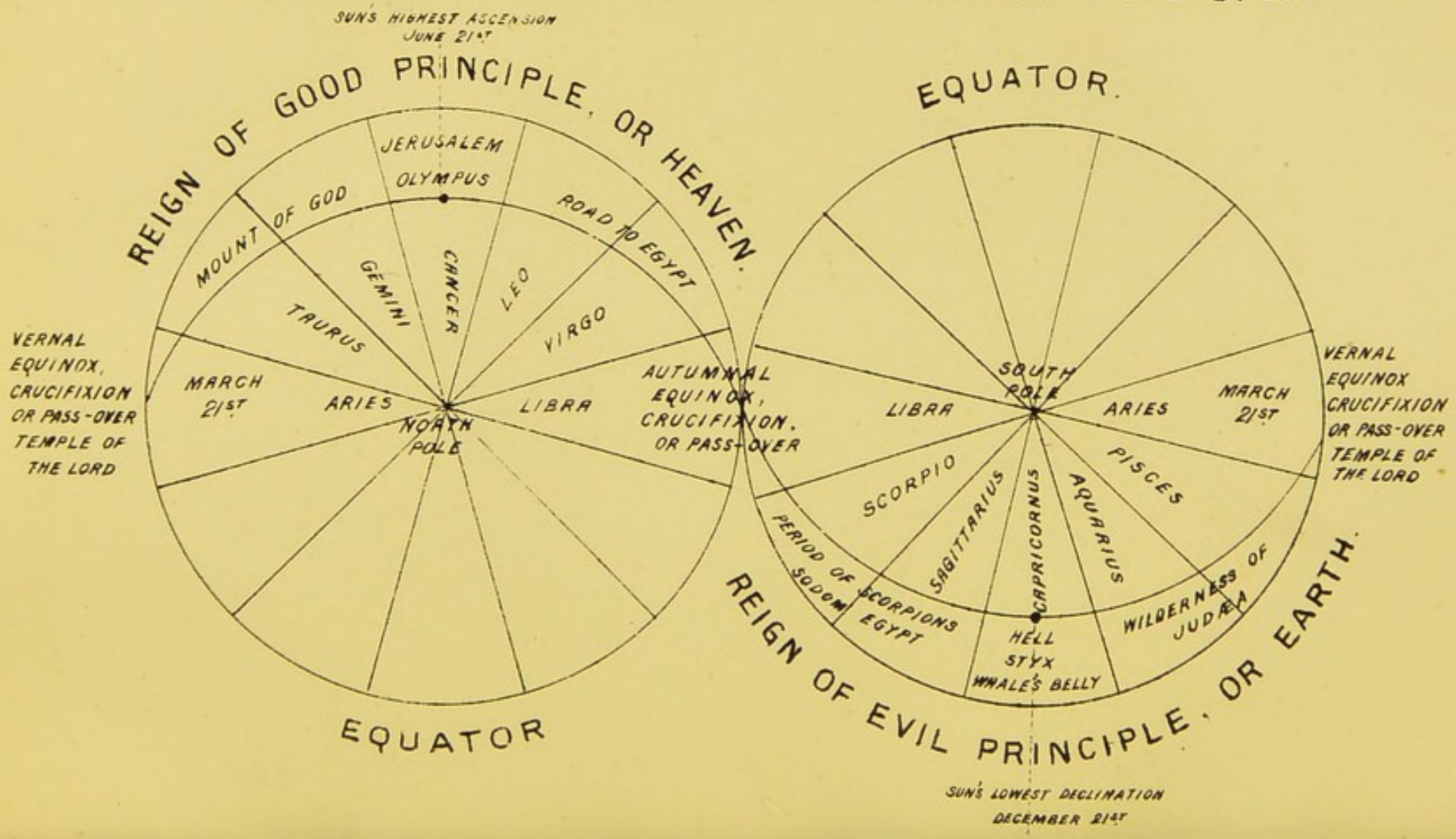
B.C. 4340 TO B.C. 2188.

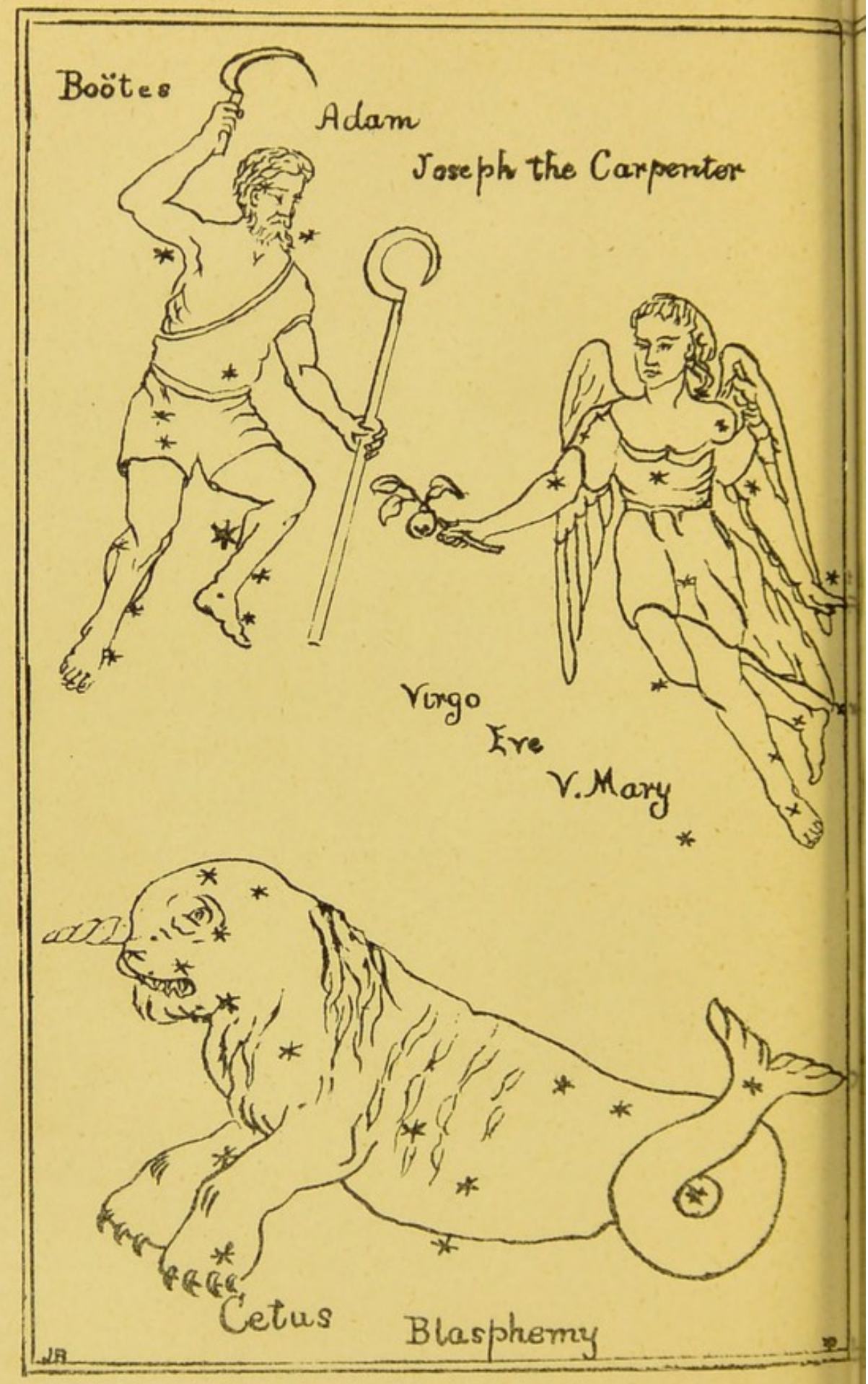


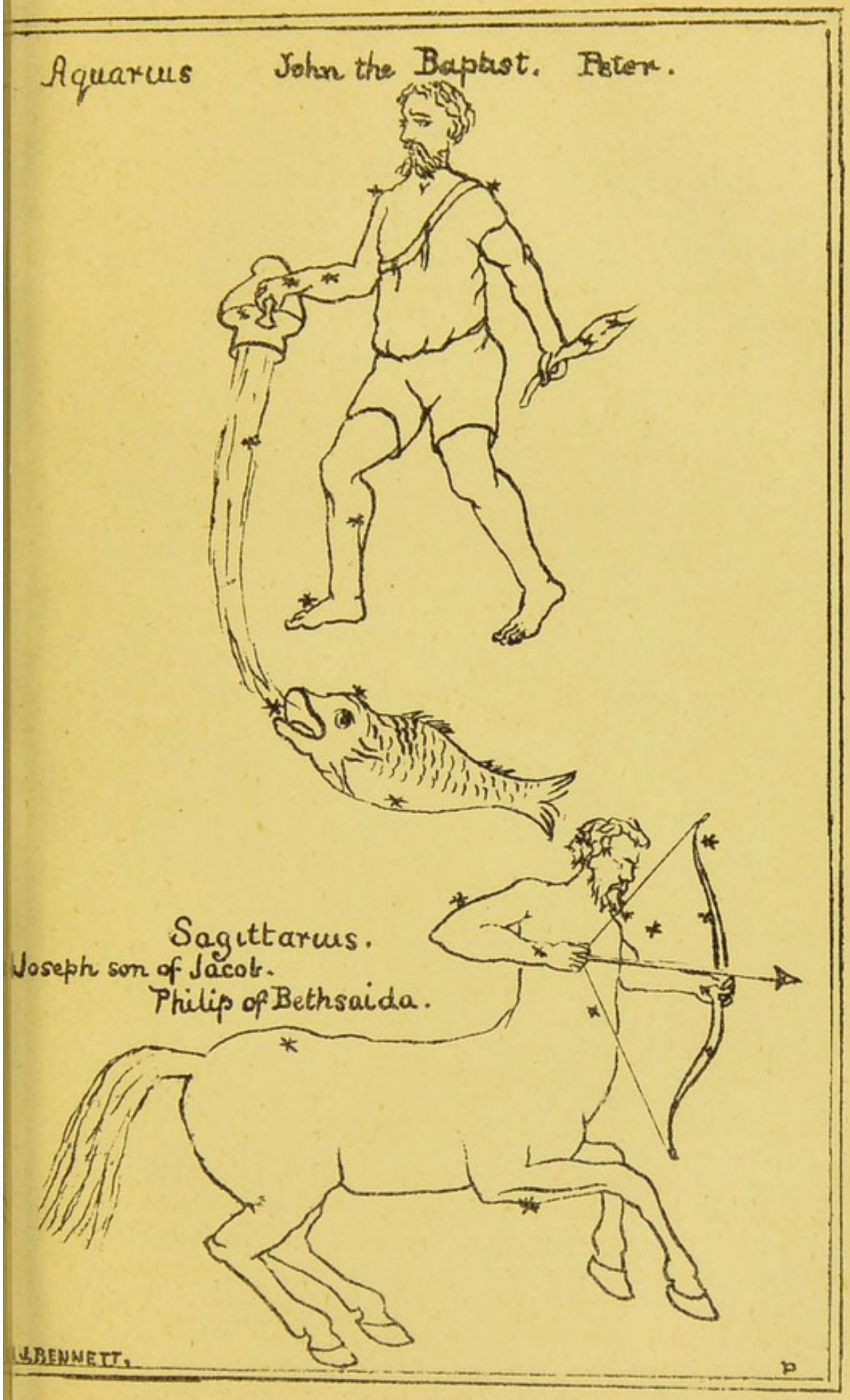
B.C. 36 TO A.D. 2116.

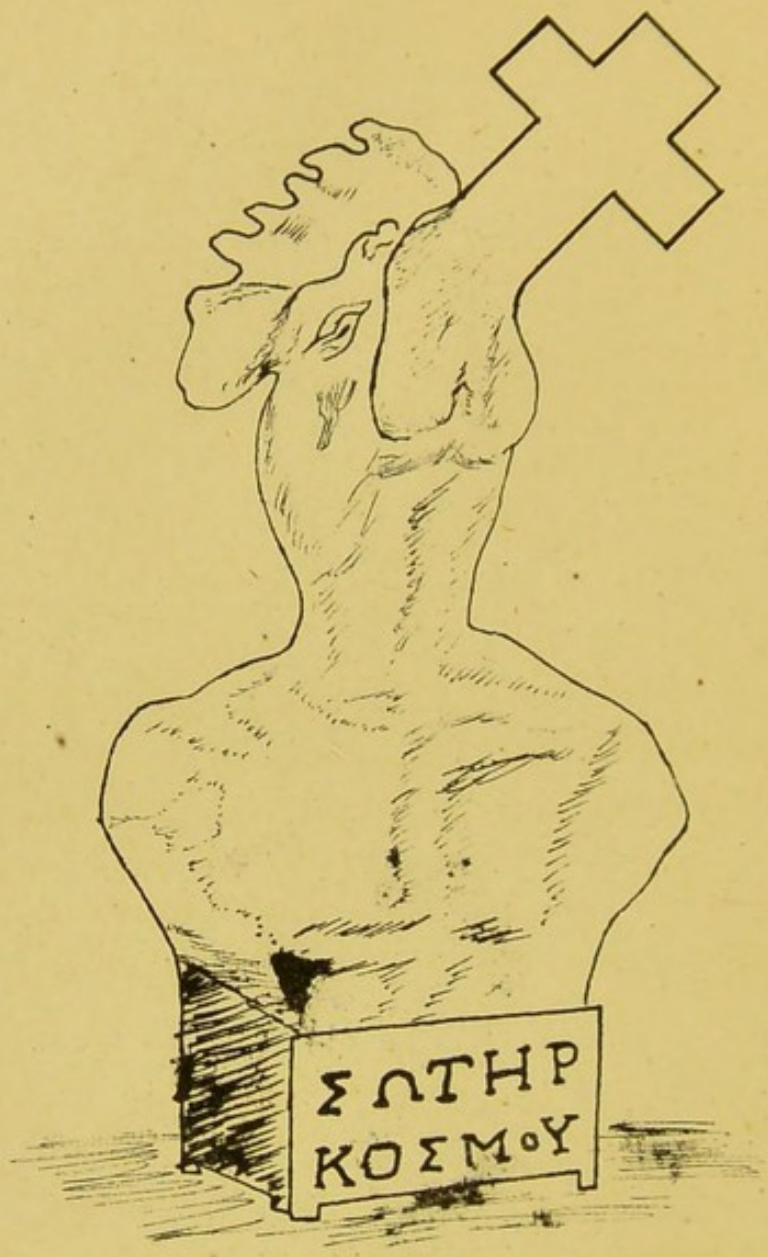


ZODIACAL LINE OR ECLIPTIC. B.C. 2188 TO B.C. 36.




Boötes
Adam
Joseph the Carpenter
Virgo
Eve
V. Mary
Cetus
Blasphemy
JR


Aquarius
John the Baptist. Peter.
Sagittarius.
Joseph son of Jacob.
Philip of Bethsaida.
J. BENNETT.



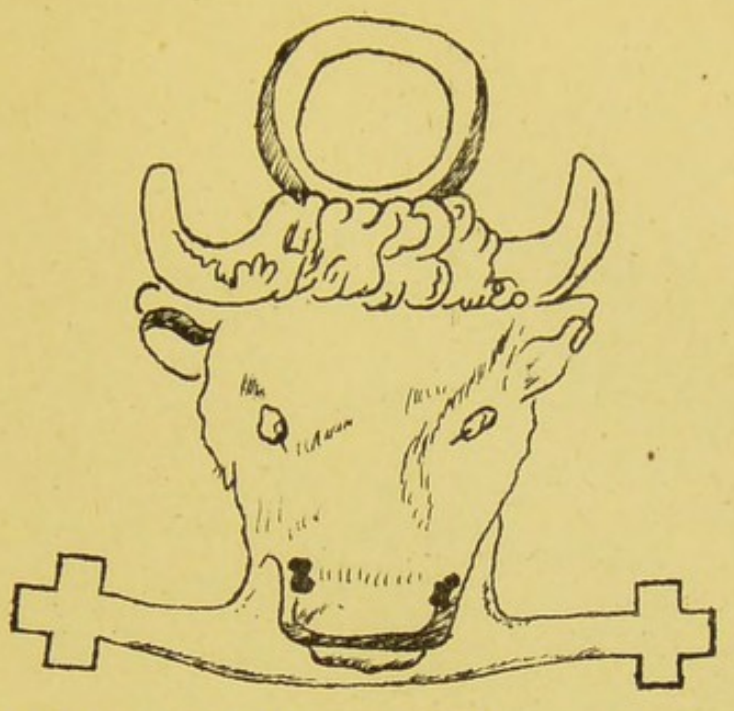
GOD INCARNATE WITH MAN

COPY OF CELEBRATED BRONZE IN THE VATICAN

ΣΩΤΗΡ ΚΟΣΜΟΥ – SAVIOUR OF THE WORLD

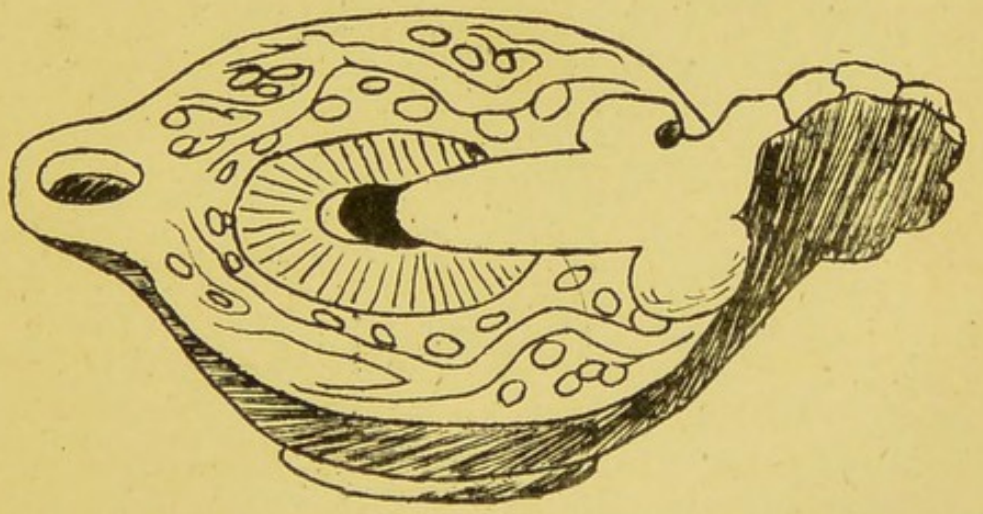
Taken from Payne Knight's "Priapus Worship."

A Cross, the Phallic symbol, has been substituted for the male organ erect of the original.



AMULET IN TOWNLEY'S MUSEUM

Representing the sexual union of the bull-sun-god, or Active principle of generation, with the Passive, or female principle of nature or earth.
Crosses have been here substituted for the erect male organs of the original.



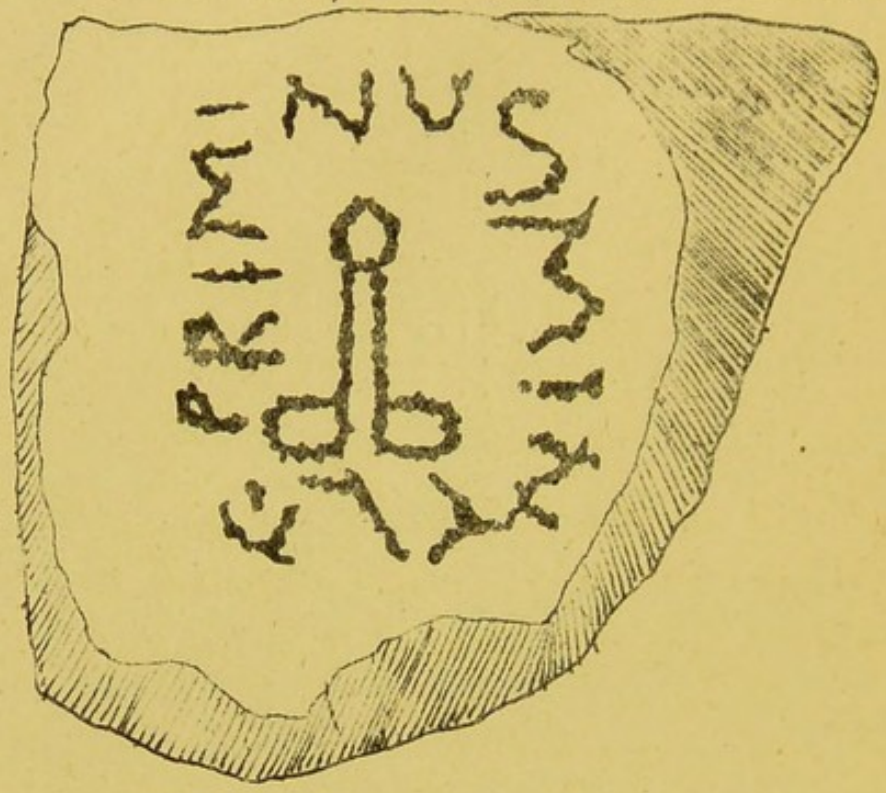
PHALLIC LAMP

Found buried in London.
Both figures are copied from "Priapus Worship."

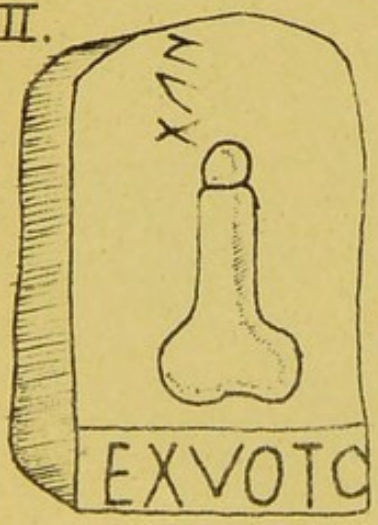
VOTIVE OFFERINGS TO GOD PRIAPUS

I. The god's assistance was sought on behalf of a couple, PRIMINUS and MENTILA, who were probably childless. Found in Roman camp at Adel, Yorkshire, and now in

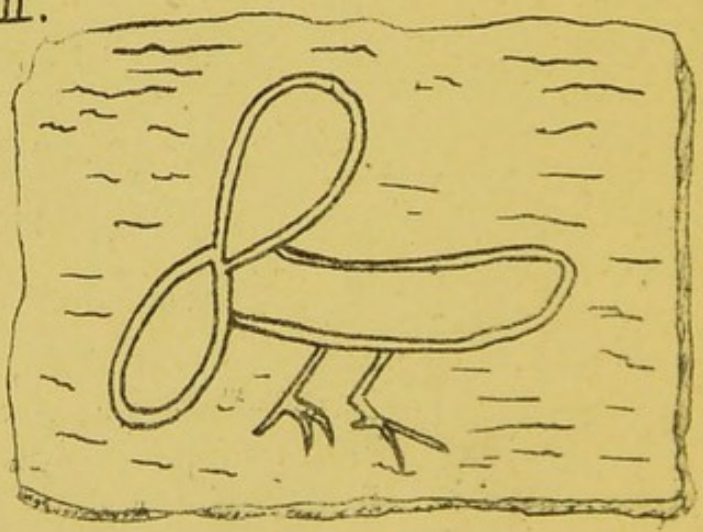
I.



II.



III.

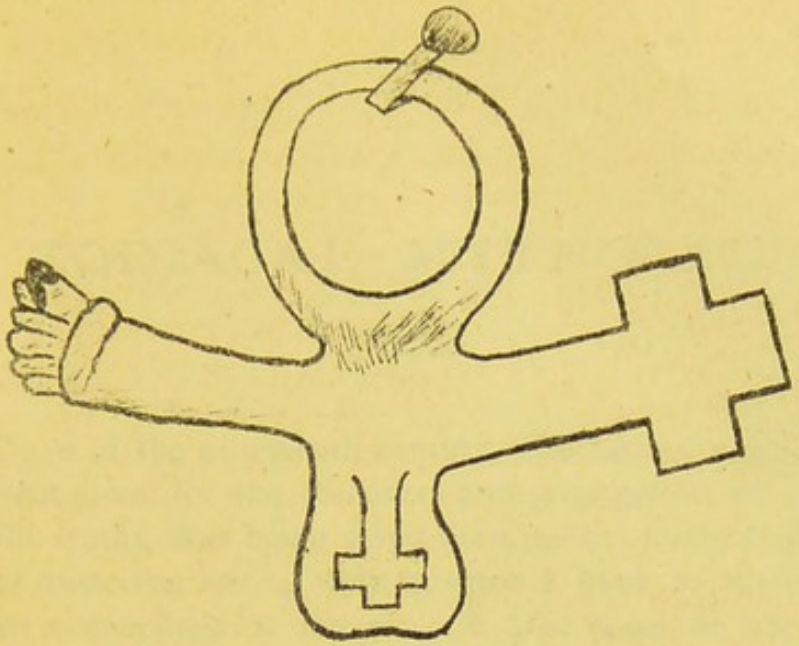


Leeds Philosophical Society's museum.

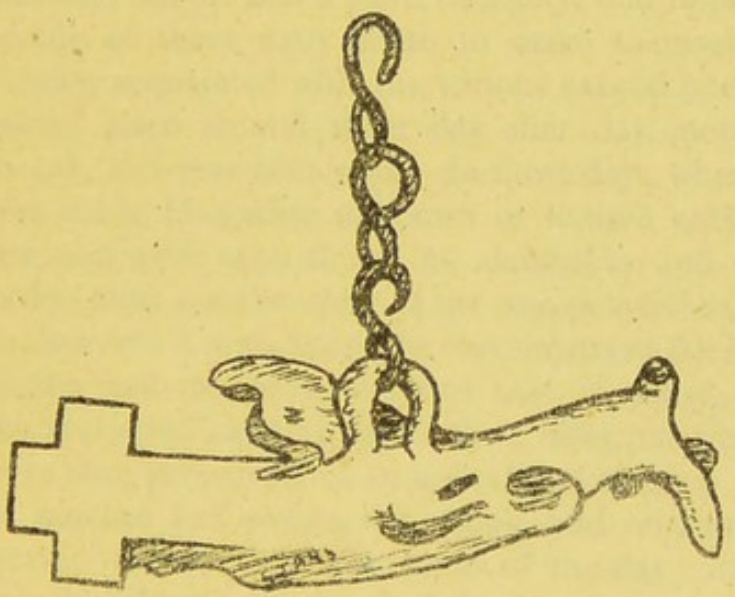
II. Found in Roman camp at Westerford Fort, Scotland, upon the wall of Antoninus.

III. Found on one of the gateways of Hadrian's wall, in the Roman camp at Homesteads, Northumberland.

The above are taken from "Priapus Worship".



AMULET FORMING DOUBLE CRUX ANSATA
From "Priapus Worship." Two Crosses are here substituted for the male organs of the original.



ANCIENT AMULET
Copied from one in the British Museum. A Cross is here substituted for the male organ of the original as shewn in "Priapus Worship."

ZODIACAL MYTHOLOGY.

To us of the nineteenth century, who have our national institutions for the discovery and propagation of scientific truths, thus being saved the trouble of investigating for ourselves, having only to open a book to see when the next eclipse of the sun will take place, or whether the Easter holidays fall later or earlier than usual, it seems almost incredible that there once existed races of men who devoted almost all their time to the study of astronomy; but such is nevertheless the fact; and when we consider the different conditions under which society existed in very remote times from what we are now subject to, we shall at once see that it was not altogether a pleasure, but in fact a stern necessity, that impelled the people of those early times to make themselves thoroughly acquainted with the various natural phenomena taking place around them day after day, month after month, and year after year. In those days, when writing was either altogether unknown or limited entirely to a few, and when such things as almanacks and encyclopedias were not the order of the day, people had to trust to their own knowledge of the movements of the heavenly bodies and the properties and uses of plants, etc., for the successful carrying on of their daily pursuits, which were then principally of an agricultural nature. Instead of watches and clocks, the people had only the sun in heaven to tell them the hours of the day; instead of monthly almanacks, they had the moon for their guide; and, instead of annual calendars to mark the commencement of the seasons, they had only the stars above to teach them the proper times to till their lands and sow their grain. Consequently, it was absolutely necessary that they should be well acquainted with all the movements of the heavenly bodies; and we need only glance at the earliest records of the human race to find that

they were more or less full of astronomical allusions—in fact, that the principal study which engaged the attention of primitive man was the study of the starry heavens.

In my lecture on "The Evolution of the God Idea" I have already pointed out how the earliest religious conceptions arose from this study; and in my "Popular Faith Unveiled" I have endeavoured to show that, in naming the constellations, the ancients adopted the wise device of giving to groups of stars the names of the particular earth productions or earth phenomena that happened to take place at the time when such star groups made their appearance in the heavens. Now, it is a very remarkable fact that in those ancient countries of which we have any exact knowledge the heavenly bodies received very similar and, in many instances, identical names, which is just what we should expect if the above theory of the naming be correct. Take the zodiac, for example, which is the line of the apparent annual circuit of the sun, and we find that in Egypt, India, Persia, and Greece it was divided into twelve portions of 30 degrees each, the whole circuit consisting of 360 degrees; and the equivalent signs bore a wonderful similarity to each other. In the old Indian zodiac published in the "Philosophical Transactions" of 1772 the signs are as follows, commencing at the vernal equinoxial point:—Ram, Bull, Man with two shields, Crab, Lion, Virgin, Balances, Scorpion, Bow and Arrow, Monster with goat's head and fish's hindquarters, Urn, Fish. In the Indian zodiac published by Sir W. Jones they are as follows:—Ram, Bull, Youth and Damsel, Crab, Lion, Virgin in a boat, holding an ear of rice-corn, Man holding the balances, Scorpion, Centaur shooting with a bow and arrow, Monster with antelope's head and fish's hindquarters, Man carrying a water-pot on his shoulder, Two Fishes. The ancient Persian zodiacal signs were: Lamb, Bull, Twins, Crab, Lion, Ear of Corn, Balances, Scorpion, Bow, Goat, Pitcher of Water, Two Fishes. In the zodiac depicted on the ceiling of the Egyptian temple of Isis at Dendera the following are the signs:—Ram, Bull, Twins, Beetle, Lion, Virgin holding an ear of corn,

Balances, Scorpion, Centaur shooting with bow and arrow, Monster with goat's head and fish's hindquarters, Man pouring water from two water-pots, Two Fishes. In Kircher's Egyptian zodiac the signs are:—Man with ram's horns, Bull, Twins, Hermes with head of an Ibis, Lion, Virgin holding an ear of corn, Man holding the balances, Man with serpents for legs and having a serpent twisted round his body, Centaur shooting with bow and arrow, Monster with goat's head and fish's hindquarters, Man with an urn from which water was falling, Woman with fish's tail. Ancient Greek zodiacs had the following signs:—Ram, Bull, Twins, Crab, Lion, Virgin, Balances, Scorpion, Centaur shooting with bow and arrow, Goat with fish's hindquarters, Canobus with his pitcher of water, Two Fishes. The Romans followed the Greeks, and these signs have since remained unchanged in all modern zodiacs, being now known under the following names:—Aries, the ram; Taurus, the bull; Gemini, the twins; Cancer, the crab; Leo, the lion; Virgo, the virgin; Libra, the balances; Scorpio, the scorpion; Sagittarius, the centaur-archer; Capricornus, the goat-fish; Aquarius, the water-bearer; Pisces, the fishes.

Each of these signs corresponds with a particular portion of the year, varying according to the slow movement known as the precession of the equinoxes, by which all the signs are moved forward very slightly year by year, at the rate of one degree in 71 or 72 years, until, at the end of about 2,152 years, a whole sign has moved forward into the position previously occupied by the sign immediately preceding it. This is caused by the failure of the sun to reach the same point in the same time in his apparent circuit each year; and thus it happens that, in a period of rather less than 26,000 years, each sign will have moved completely round the zodiacal band. Now, by careful calculation it has been found that the vernal equinoxial point coincided with the first degree of Aries about 28,000 years ago, with the first degree of Libra about 17,000 years ago, with the first degree of Taurus B.C. 4,340, with that of Aries B.C. 2,188, and with that of Pisces B.C. 36; so that, at the present time, the vernal equinoxial point is really occupied by the sign of the

fishes, although, for astronomical purposes, the sign of the ram is always placed in that position, and will, for the future, always be considered as the first sign of the zodiac, no matter what sign may really occupy that position. Thus there is now what is called a fixed zodiac, which never changes, and which is an arbitrary arrangement made for scientific purposes, and a real zodiac whose figures move steadily and slowly year by year, until at the end of rather more than two thousand years the vernal equinoxial point is occupied by the sign immediately following the one which occupied it during that period of time.

Although now the fixed zodiac is an established fact, such an arrangement was undreamed of by the ancients, who regulated their almanacks from the actual sign at the time occupying the vernal equinoxial point; so that between the years 4340 B.C. and 2188 B.C. the sign of the bull was the first and chief sign of the zodiac, while during the two thousand years following—that is, until 36 B.C.—the sign of the ram or lamb took its place. The vernal equinox falls on March 21st each year, at which time the sun, having ascended from its lowest point of declination (December 21st), arrives at that portion of its annual course at which the equator and the ecliptic cross each other; and thus during the period when the sign of the bull was the vernal equinoxial sign the sun was said to be in *Taurus*, while in the following period, when the sign of the ram took the place of that of the bull, the sun was said to be in *Aries*. In order to understand thoroughly the apparent annual march of the sun round our earth, it will be necessary to observe the actual double motions of our earth round the sun and upon its own axis. Let us suppose that we are again in the period when the sun was in *Aries* at the vernal equinox; on the 21st of March our earth, in travelling round the sun (annual motion), has reached a point at which the sun is placed between us and the first stars of *Aries*, which are then, of course, invisible, because when the sun is visible it is daytime—that is, the part of the earth on which we stand is opposed to the sun, which renders all the stars in that part of the heavens invisible; but, as the earth continues to turn upon its

axis (daily motion), we gradually lose sight of the sun, and as the darkness closes around us the stars upon the opposite side of the heavens become visible; so that, when the sun is in *Aries*, or any other sign, that sign is always invisible to us, and at night we see the sign that occupies the opposite side of the zodiac. Day after day, as the earth continues to move round the sun, a few more stars in the sign *Aries* are covered, until at the end of a month the sun reaches the next sign, *Taurus;* and the opposite signs, which we see at night, have also moved on to the same extent. Thus at noon on March 21st the sun is at its highest daily ascension, south of the zenith, or highest point of the heavens, obliterating by its effulgence the first stars of the sign *Aries*, through which it is apparently about to pass, and at midnight following the opposite sign, *Libra*, is seen at the same distance from the nadir, or highest point of the darkened heavens; while a month later, when the sun at noon is in *Taurus*, the sign *Scorpio* is seen at the opposite point at midnight; and so on through all the signs, one month being occupied by the passing of the sun through each sign, so that it passes through *Aries* in March, *Taurus* in April, *Gemini* in May, *Cancer* in June, *Leo* in July, *Virgo* in August, *Libra* in September, *Scorpio* in October, *Sagittarius* in November, *Capricornus* in December, *Aquarius* in January, *Pisces* in February. This was precisely what occurred in the zodiac during the years from B.C. 2188 to B.C. 36; but in the period of two thousand years immediately preceding this, owing to the precession of the equinoxes, the order was changed, so that *Taurus* was the sign of March, *Gemini* of April, and so on, each sign being a month earlier; while at the present time *Pisces* is the sign of March, and each other sign one month later than when *Aries* was at the vernal equinoxial point. Each of these signs occupies 30 degrees of the zodiac, the whole twelve making up 360 degrees, which is the total length of the imaginary sphere of the heavenly vault; and the ancients again divided each of these signs into three portions of ten degrees each, called decans making 36 decans for the complete zodiacal circle. When the sun was passing through a sign the astrologers publicly proclaimed the

exact moment of its entry upon the first decan, which they called the upper room, the whole sign being called the house of the sun; the second decan they called the middle or inner room, and the third the lower room. On each side of the zodiacal band there are also a number of what are called extra-zodiacal constellations, which never vary their position with regard to the zodiacal signs, the constellations on either side of *Aries* always rising and setting at the same time with that sign, those on each side of *Taurus* doing likewise, and so on through all the signs.

As the various astronomical figures became endowed by the ancients with divine honours, each of these signs became associated with a number of romantic stories, until at length the struggles, victories, and defeats of the gods were told in such a variety of ways that sufficient lore existed to fill, if written down, whole libraries. The zodiacal signs were all gods of great importance; the planets were gods, the sun was a god, the moon was a goddess, and the extra-zodiacal constellations were either gods or heroes; but all were not of equal importance, and, owing to the constant changing of positions, some were powerful and victorious at one time and weak and dying at another. The chief deity, which to the Aryans was Dyaus, the day-father, became in later times a concentrated essence of all the gods, and was supposed to undergo all the vicissitudes to which they were subjected; but, inasmuch as the new-born sun was the life of the world, bringing back happiness, and the vernal equinoxial sign was the one at which his influence began to be felt, these two deities were looked upon as god *par excellence*, a dual deity, separate yet conjoined, and of equal power and authority. So, when the bull was the vernal equinoxial point, the sun-in-*Taurus* was supreme god; and when the ram, or lamb, was the vernal equinoxial point the sun-in-*Aries* was supreme God; and, although it was only in March that the sun was at the vernal equinoxial point, yet the bull-god, for two thousand years prior to B.C. 2188, was always supreme, and the ram-god (in Egypt) or lamb-god (in Persia) after that date. On leaving the vernal equinoxial sign the sun passed into the next in order; but, although

then not actually in conjunction with the chief sign, it yet was but slightly removed from it, the distance growing larger as each fresh sign was occupied; and never were the sun and the principal sign actually separated from each other in the zodiac, so as to pass into opposite hemispheres, until the autumnal equinoxial point was crossed, after which the sun passed successively through all the winter constellations, being separated for the space of six months from the sign of the vernal equinox. Therefore the six summer signs were accounted specially bountiful and holy, the sign of the vernal equinox being the head and chief of the six, while the six winter signs were accounted less holy, but quite as powerful for evil as the others were for good.

From this was formed the main drama of all subsequent mythological systems, the groundwork of which was, briefly, as follows:—The saviour-sun-god was born at the winter solstice, and ascended to the vernal equinox, where he was united with the bull, becoming the bull-god, and in aftertime with the ram or lamb, becoming the ram-god or lamb-god; after crossing the equator at the spring covenant, or coming together of the equator and ecliptic, he ascended to the summit of the heavens, becoming the lion-god, at the height of his power, and then descending again to the autumnal covenant, or equinox, to pass through the winter or scorpion signs, alone, and mourning the loss of the vernal equinoxial sign, which was torn from him at the autumnal equinox. This simple narrative received numerous embellishments in after times, according to the fancy of the astrologers and priests, who, in many cases, contrived to make out of it a beautiful poem or a sublime allegorical drama.

In describing the entry of the sun upon any particular sign the ancient astrologers were in the habit of referring, not only to the sign itself and to its decans, but also to the accompanying extra-zodiacal constellations, as well as to the visible zodiacal signs and extra-zodiacal constellations of the opposite hemisphere. For instance, during the period of the lamb's supremacy (B.C. 2188 to B.C. 36) the position of the stars at the moment of the commencement of the annual apparent march of the sun round the

zodiac was as follows:—The first stars of the zodiacal sign *Capricornus* were at the winter solstitial point, December 21st, and invisible to the eye, being directly south of the zenith at noon, the extra-zodiacal constellations *Piscis Australis* on the south, and *Aquila* on the north, being on either side of it, and the zodiacal signs *Sagittarius* in front and *Aquarius* behind, accompanying it in its march; while on the opposite side of the zodiac, at midnight, was seen, directly to the south of the nadir, the sign *Cancer*, in which were the *Præsepe*, or stable of Augias; the *Io-sepe*, cradle of Jupiter or manger of Jao; and the *Aselli*, or two asses; on the east the sign *Virgo* was just about to appear above the horizon; on the western horizon was the sign *Aries*, above which, and crossing the equator, was the extra-zodiacal constellation *Orion*, with the three large stars in his belt; and immediately below which was the sea monster *Cetus*, just sinking below the horizon. In proclaiming the birth of the sun at Christmas, therefore, the astrologers would make mention of all these points; and, consequently, the more prominent and interesting of them would become impressed more or less upon the minds of the people, to be converted in after times into various fantastic and romantic fables, as the manufacture of gods out of these astronomical phenomena proceeded.

The principal astronomical features of this annual sun-birth were, therefore, as follows:—The birth took place in the house of the goat, exactly opposite to which were the manger of Jao and the stable of Augias, between two asses; at the same moment the virgin was about to appear above the eastern horizon; the lamb was, as it were, hurling the sea monster *Cetus* below the western horizon; and the three brilliant stars, called the three kings, in the belt of *Orion*, were shining above the lamb, on the opposite horizon to where, after the lapse of sixteen days (January 6th), would appear that brilliant star *Vindemiatrix*, the Virgin by that time having risen sufficiently high above the horizon for that orb, which is situated in her elbow, to be seen at midnight.

All the subsequent fables concerning the birth of a saviour-god were but modifications of this. Mithra, Krishna, Horus, Bacchus, Jesus, and, in fact, all the sun-

gods, were born on December 25th, at midnight; and the stories related of each bore a marked resemblance to each other. The real birthday of the sun-god was December 22nd, at the first hour; but it was always reckoned from the same time on December 25th, because at that moment, and not before, the first stars of *Virgo* appeared above the horizon, which was the sign by which it became known that the birth had actually taken place three days and three nights previously. This gave rise to a popular notion that the sun-god struggled for that length of time at each of the solstitial and equinoxial points, and accounts for the fable of the two crucifixions when the sun-god, in crossing the equator in March and September, was, for three days and three nights, in torture before he finally ascended to heaven in the one case, and descended to hell in the other.

The Christian myth of the birth and death of the saviour-god, although now considerably amplified and converted into a long history, was originally, no doubt, of a much simpler form, and, probably, of the following nature:—Jesus, the sun-god, was born at midnight, between December 24th and December 25th, his mother, *Virgo*, having been three days and three nights in the agony of childbirth; the virgin, not being allowed to enter the house of the goat, being on the opposite side of the zodiac, was obliged to seek refuge in the stable of Augias (*Cancer*), and place her baby in the manger of Jao, at which moment the lamb of god, *Aries*, hurled into the abyss the great monster of evil, or *Cetus*; the three kings in the belt of *Orion*, perceiving, on January 6th, the great star *Vindemiatrix* rise in the east, which was their guiding star, made obeisance to the new-born god and disappeared below the horizon, going down by the west, instead of returning by the east, or way they had come. Growing from this moment, the young sun-god commenced his journey towards the city of god, the summer solstice, at the top of the hill, or height of annual ascension, meeting at the outset *Aquarius*, the man with the pitcher of water, or John the Baptist, with whom he remained for a time; after which he entered upon the season of fasting, or the sign *Pisces*, the fishes, and prepared by austerities for the coming feast of the

Passover, or coming together (covenant) of the ecliptic and equator, when he would be crucified—that is, be placed cross-wise on the two lines (ecliptic and equator). After this he entered into the sign, *Aries*, the lamb, having been shown the way by the man with the pitcher of water, *Aquarius*, and partook of the feast in the upper room or first decan, immediately after which he was crucified as the lamb of god—that is, passed the crossing of the equator and ecliptic in the sign of the lamb. For three days and three nights he struggled in the tomb, or suspense, and then ascended into heaven, accompanied by the lamb, passing the signs *Taurus* and *Gemini*, saying to the twins that he could stay with them but a little while, and where he was going they could not go (John xii.), and finally reaching the city of heaven, Jerusalem, or *Cancer*, passing over the two asses (*Aselli*) at the entrance to it. Here, on the top of the mount, or at the height of his annual ascension, he had another three days and three nights of tribulation, struggling with the devil, the heavenly serpent, who had led or preceded him up the mount, but who left him as soon as he arrived at the top; for *Serpens*, at this point, returns while the sun commences his descent towards the autumnal crucifixion. Passing into *Leo*, he was transfigured on the mount—that is, became more resplendent than ever, after which he entered *Virgo*, where the seductions of the lady sorely tempted him, for being offered the juice of the autumn grape he drank copiously with the damsel until none was left; whereupon she suggested that he should turn water into wine, but he resisted further temptation, exclaiming, "Woman, what have I to do with thee?" and pursued his course towards the autumnal equinox, where he passed into *Libra* and crossed the equator and ecliptic again, or, in other words, was crucified in Egypt as the "just man," being at length separated from *Aries* for six months, which caused him to exclaim in grief, "My ram! my ram! why hast thou forsaken me?" After three days' and three nights' struggle he descended into hell, the tomb, or the dark regions, to be born again at the winter solstice as before; after which he would reconquer the powers of evil, or the winter signs, and again become the lamb of god,

"slain from the foundation of the world" (Rev. xiii. 8) the Amen, or Jupiter Ammon, of the Apocalypse, at which moment he exclaims, "I am he that liveth and was dead, and behold I, Amen, am alive for evermore" (Rev. i. 18), and "These things saith Amen, the true and faithful witness, the beginning of the creation of God" (Rev. iii. 14). The winter period, commencing with *Libra*, was called by the ancients the period of scorpions, because *Scorpio* was the principal sign of the period, and next after the equinoxial sign; Egypt (see Rev. xi. 8), because, that being the most southerly country then known, the sun appeared to descend into it at that time of the year; and Sodom, Gomorrah, etc., because it was a period of evil. The sea-monster, *Cetus*, is the same that is referred to in Rev. xiii. as blasphemy, with a mouth like a lion, feet like a bear, and leopard-like marks on its forequarters, and whose number was declared to be 666, which figure being made up of ס 60, ת 400, ו 6, and ר 200, stands for the word סתור, Setur, the concealed one, the Latin equivalent of which is *Cetus*. This was probably something like the original Christian myth, which, as time wore on, became converted into the absurd story presented to us in the four Gospels.

The story of Adonis being separated from his darling Venus for six months, and being afterwards re-united to her in love for another six months, was fabricated from the same source; as also were the legends of Osiris and Horus, Vishnu and Krishna, Ormuzd and Mithras, Jupiter and Apollo, Jupiter and Bacchus, and Jupiter and Hercules. The cult of Bacchus, indeed, was almost a *fac simile* of those of Jesus and Adonis, the three being but representations in different countries of the very same drama. The twelve labours of Hercules were no more than the passage of the sun through the twelve signs of the zodiac, just as the twelve patriarchs, the twelve tribes, the twelve stones, and the twelve apostles were the twelve signs themselves. In my "Popular Faith Unveiled" I have pointed out the reasons for thinking the twelve sons of Jacob and the twelve apostles to be the twelve zodiacal signs; but I may here state that, on re-consideration, I am inclined to modify the order maintained there in regard to the twelve sons

of Jacob (p. 122) by changing the places of Benjamin and Zebulun, the former being, in my present opinion, the sign *Gemini*, and the latter *Capricornus;* and as to the twelve apostles, I may here supply an omission made in the same work, by stating that Andrew (p. 198) represents *Aries*, of March, being always depicted with a ×, which forms the angle made by the crossing of the equator and ecliptic on March 21st. The mystic number seven was derived from the summer signs of the zodiac, including the two equinoxial signs, which were called the pillars of the temple, the vault of the summer heavens being the temple itself. Thus arose the allusions to the seven trumpets, the seven candlesticks, the seven churches, and the seven seals in the Apocalypse, each of which was a summer zodiacal sign; and here I may again supply an omission in my "Popular Faith Unveiled" (p. 246) by stating that the church of Smyrna represented *Virgo*, of August, in which month bundles of myrrh were always offered to the sun, the word Σμυρνα signifying "myrrh."

Besides mystic numbers, there were a number of mystic symbols in use among the ancients, by which the great and important phenomena in nature were kept constantly before the eyes of the people. The chief and most widely known symbol is the cross, representing the ascending sun bringing back fresh life to the world at the vernal equinox; but the cross was by no means the only symbol of this important occurrence; trees, torches, the male organs of generation, or phallus, and various animals were frequently used for the same purpose—in fact, the symbolical worship of the ancients assumed gigantic proportions, almost every conceivable device being seized upon to render homage to the great re-fertiliser of the earth. No one of the religious cults was free from a large admixture of what is known as phallic worship—that is, worship of the fertilising principle; and it was a common custom for people to swear by their generative organs, as being the most sacred things on earth, representing the divine energy in a state of procreative activity. Thus we find in Psalm lxxxix. 49 the following words (literally translated): "O my Adonis, where are thy endearments of old, which thou swearedst

for the sake of love by thy phallus, O Ammon?" The Hebrew letter ת was the sign of the cross, or phallus, which was also used by the Phœnicians, being derived from the Arabic תוי, the symbol of the life-giver. This passage evidently had reference to the violent death of Adonis, who, at the autumnal equinox, was attacked by a wild boar, which tore away his generative organs and rendered him consequently impotent, until he was born again, when he acquired fresh powers and grew in beauty and stature, ready to re-unite with Venus at the spring equinox.

On the mithraitic monuments the spring equinox is represented by lighted and elevated torches, trees covered with leaves, entire bulls, and young men holding lighted torches; while the autumnal equinox is represented by a hydra, or long serpent, a scorpion, reversed and extinguished torches, trees loaded with autumn fruits, a bull with its generative organs torn away, and old men holding reversed and extinguished torches. The Rev. G. W. Cox, M.A. and scholar of Trinity College, Oxford, in his "Mythology of the Aryan Nations," says: "The male and female powers of nature were denoted respectively by an upright and an oval emblem, and the conjunction of the two furnished at once the altar and the ashera, or grove, against which the Hebrew prophets lifted up their voice in earnest protest.....In the kingdom both of Judah and Israel the rites connected with these emblems assumed their most corrupting form. Even in the temple itself stood the Ashera, or the upright emblem on the circular altar of Baal-Peor, the Priapos of the Jews, thus reproducing the Linga and Yoni of the Hindu. For this symbol the women wove hangings, as the Athenian maidens embroidered the sacred peplos for the ship presented to Athene at the great Dionysiac festival. Here, at the winter solstice, they wept and mourned for Tammuz, the fair Adonis, done to death by the boar. .....Here, also, on the third day, they rejoiced at the resurrection of the lord of light. Hence, as most intimately connected with the reproduction of life on earth, it became the symbol under which the sun, invoked with a thousand names, has been worshipped throughout the world as the restorer of the powers of nature after the long sleep or death of winter."

This symbol was from the earliest times venerated as a protecting power, and Jacob, on his journey to Laban, slept under its protecting influence: placed erect—sometimes as a tree, at others as a cross, and often as a phallus—and resting on a crescent, the modified form of the yoni, this symbol set forth the marriage of heaven and earth; and in the form of a serpent, representing life and healing, it was worshipped by the Egyptians and Jews. In the book of Genesis the phallic tree is introduced, where it is called the tree of knowledge of good and evil. From Plutarch we learn that the Egyptians represented Osiris with the organ of generation erect, to show his generative and prolific power, and that he was the same deity as the Bacchus of the Greek mythology and the first begotten love (Ερως πρωτογονος) of Orpheus and Hesiod. In an excellent work entitled "Discourse on the Worship of Priapus," by Richard Payne Knight, there are a number of plates illustrating the mode in which this phallic worship was carried on by the ancients, some of which are very curious and well worth the trouble of studying carefully. One plate represents a celebrated bronze in the Vatican, with the male organs of generation placed on the head of a cock, the emblem of the rising sun, supported by the neck and shoulders of a man, the whole being emblematical of god incarnate with man, and on the base of which are inscribed the words ΣΩΤΗΡ ΚΟΣΜΟΥ, "Saviour of the world." Another figure on the same plate represents an ornament in the British Museum, consisting of a male organ with wings and the foot of a man suspended from a chain. Another plate shows two representations of the god Pan, one with the organ erect, the symbol of power, or spring, the other with the organ in a state of tumid languor, and loaded with the productions of the earth, the symbol of the results of prolific efforts. Both these last are copies of bronzes in the museum of C. Townley. On another plate is a copy of another of Mr. Townley's treasures, representing the incarnation of deity, in the shape of a man having sexual intercourse with a goat, the emblem of the new-born deity at the winter solstice, to which is appended the following note by Mr. Payne Knight: "At Mendes a living goat was kept as the image of the

generative power, to whom the women presented themselves naked, and had the honour of being publicly enjoyed by him. Herodotus saw the act openly performed (ες επιδειξεν ανθρωπων), and calls it a prodigy (τερας). But the Egyptians had no such horror of it; for it was to them a representation of the incarnation of the deity, and the communication of his creative spirit to man. It was one of the sacraments of that ancient church, and was, without doubt, beheld with that pious awe and reverence with which devout persons always contemplate the mysteries of their faith, whatever they happen to be." This figure represented the human male symbol as incarnate with the divine, instead of the divine male incarnate with the human, as in the well-known one found among the ruins of Herculaneum and kept concealed in the Royal Museum of Portici. It is unnecessary to describe the whole of the interesting plates which illustrate Mr. Knight's work, copies of all of which I have carefully taken.

There is abundant evidence in ancient authors as to the prevalence of this worship of the generative organs, and all agree as to the real meaning of the symbol. In every part of the then known world the conquering sun bringing back life to the world at the spring equinox was represented in some phallic form or other, either as a cross, a phallus, a tree, a serpent, a goat, a bull, a torch, or some other device emblematic of the sexual union of the powers of heaven with mother earth. The cross was the most commonly used phallic symbol, and was generally of the following form—$\frac{\circ}{\top}$, the o being the emblem of the earth, or female organ, and the T that of the sun, or fecundating principle, the combination forming a *crux ansata*, which was worn as a charm by devout people. This was converted into a simple cross, in which form, as well as in many others, it is found on ancient temples of the most remote periods, as well as at the corners of roads, where it evidently was used as a sign-post, as well as a religious symbol. Among the paintings found at Pompeii there are some in which the god Priapus is represented as a Hermes, on a square pedestal, with an enormous phallus; and others in which he is represented with the usual prominent feature, and,

in addition, with a long stick in his hand to point out the way to travellers. Herodotus thus describes a festival in Egypt :—"The festival is celebrated almost exactly as Bacchic festivals in Greece. They also use, instead of phalli, another invention, consisting of images a cubit high, pulled by strings, which the women carry round to the villages. The virile member of these figures is scarcely less than the rest of the body, and this member they contrive to move. A piper goes in front, and the women follow, singing hymns in honour of Bacchus."

Among the royal offerings to the god Amen by Rameses III. in the great Harris Papyrus are loaves (called "Taenhannur") in the form of the phallus.* In the Pamelia the Egyptians exhibited a statue provided with three phalli ; and in the festivals of Bacchus, celebrated by Ptolemy Philadelphus, a gilt phallus, 120 cubits high, was carried in procession. St. Jerome tells us that, in Syria, Baal-Peor, the Hebrew Priapus, was represented with a phallus in his mouth ; and in Ezekiel xvi. 17 we find the Jewish women manufacturing silver and golden phalli.

According to Herodotus and Diodorus Siculus, the worship of Bacchus was imported into Greece by Melampus, who taught the Greeks the mysteries connected with phallic worship ; and Plutarch says that "nothing is simpler than the manner in which they celebrated formerly in my country the Dionysiaca. Two men walked at the head of the procession ; one carried an amphora of wine, the other a vine branch ; a third led a goat ; a fourth bore a basket of figs ; a figure of a phallus closed the procession."

Tertullian tells us that that which in the mysteries of Eleusis is considered as most holy, concealed with most care, and only explained to the initiated at the last moment, is the image of the virile member. The festival of Venus, held at Rome in the beginning of April each year, was in honour of the sexual union of the powers of heaven and of earth. The Roman ladies led a cart, in which was a huge phallus, to the temple of Venus, outside the Colline gate, and there presented the member

* "Primitive Symbolism," by Hodder M. Westropp.

to the sexual part of the goddess. Spring was, indeed, the special season for phallic processions, as we learn from a passage of "Iamblichus de Mysteriis," given by Mr. Westropp: "We say the erection of the phalli is a certain sign of prolific power, which, through this, is called forth to the generative energy of the world; on which account many phalli are consecrated in the spring, because then the whole world receives from the gods the power which is productive of all generation."

It is sufficiently obvious that the return of the sun to the vernal equinoxial sign each year, or the union of the active and passive principles, formed the cornerstone of the various religious systems, and that this marriage, as it were, of heaven with earth, occurring each spring-time, and bringing with it such a train of good results, gave rise to the most sacred institutions and rites, which to us may appear disgusting, but which, to the ancients, were looked upon with the greatest awe and veneration.

It was not to the generative organs that the ancients offered homage, but to the principles represented by them—to the active and procreative power of the god of nature, the prolific ram-sun, at the spring equinox, and to the passive and recipient mother-earth, the womb of nature, from which we all emanate and to which we all return. It is, however, reasonable to imagine, with the Rev. G. W. Cox, that "it is clear that such a cultus as this would carry with it a constantly-increasing danger, until the original character of the emblem should be as thoroughly disguised as the names of some of the Vedic deities when transferred to Hellenic soil." Indeed, it is matter of history that these rites, which were held so sacred by the Egyptians, were turned to the basest and most wicked purposes in after times by the worshippers of Bacchus, Adonis, and other deities. The Bacchanalian mysteries and secret rites called *Dionysia*, or Supper of the lord Dionysos, were publicly denounced by the Roman authorities at the commencement of our era, as were also the *Adonia*, or Suppers of the lord Adonis, and the Love Feasts, *Agapae*, or Suppers of the lord Jesus. From Gibbon we learn that the early Christians were in the habit of committting at their Love Feasts the most unnatural crimes with sisters, mothers,

and others, as is also clearly testified by Justin Martyr, Athenagoras, Tertullian, and Minucius Felix ; and Livy's account of similar practices indulged in by the Bacchanalians at their *Dionysia* leaves no doubt as to their participation in these horrors. So widely spread was this phallic worship that, within one hundred years of the present time, it was openly followed in some parts of Europe, as appears from a letter of Sir William Hamilton, K.B., British Minister at the Court of Naples, to Sir Joseph Banks, Bart., President of the Royal Society. Accompanying the letter the writer sends an amulet worn by women and children of Naples and the neighbourhood as ornaments of dress, which they imagine will be a preservative against *mal occhii* ("evil eyes"), or enchantment. It represents a hand clenched, with the point of the thumb thrust between the index and middle finger, on one side, and a male organ erect on the other side, with a ring, or female organ, above, and a flaccid male organ and scrotum beneath, the whole in the form of a cross. The letter is so remarkable that it is worth while reproducing a considerable portion of it, as it appears in Mr. Knight's work.

"The following is the account of the Fête of St. Cosmo and Damiano, as it was actually celebrated at Isernia, on the confines of Abruzzo, in the kingdom of Naples, so late as in the year of our Lord 1780. On the 27th of September, at Isernia, one of the most ancient cities of the kingdom of Naples, situated in the province called the Contado di Molise, and adjoining to Abruzzo, an annual fair is held, which lasts three days. The situation of this fair is on a rising ground, between two rivers, about half a mile from the town of Isernia ; on the most elevated part of which there is an ancient church, with a vestibule. The architecture is of the style of the lower ages ; and it is said to have been a church and convent belonging to the Benedictine monks in the time of their poverty. This church is dedicated to St. Cosmus and Damianus. One of the days of the fair the relics of the saints are exposed, and afterwards carried in procession from the cathedral of the city to this church, attended by a prodigious concourse of people. In the city, and at the fair, *ex-voti* of wax, representing the male parts of

generation, of various dimensions, some even of the length of a palm, are publicly offered to sale. There are also waxen vows, that represent other parts of the body mixed with them; but of these there are few in comparison of the number of Priapi. The devout distributors of these vows carry a basket full of them in one hand, and hold a plate in the other to receive the money, crying aloud, 'St. Cosmo and Damiano!' If you ask the price of one, the answer is, *Più ci metti, più meriti* —'The more you give, the more's the merit.' In the vestibule are two tables, at each of which one of the canons of the church presides, this crying out, *Oui si ricevina le Misse, e Litanie*—'Here Masses and Litanies are received;' and the other, *Oui si riceveno li Voti*—'Here the Vows are received.' The price of a mass is fifteen Neapolitan grains, and of a litany five grains. On each table is a large basin for the reception of the different offerings. The vows are chiefly presented by the female sex; and they are seldom such as represent legs, arms, &c., but most commonly the male parts of generation. The person who was at this fête in the year 1780, and who gave me this account (the authenticity of every article of which has since been fully confirmed to me by the Governor of Isernia), told me also that he heard a woman say, at the time she presented a vow, like that which is represented in Plate I., Fig. I., *Santo Cosimo benedetto, cosi lo voglio*—'Blessed St. Cosmo, let it be like this;' another, *St. Cosimo, a te mi raccommendo*— 'St. Cosmo, I recommend myself to you;' and a third, *St. Cosimo, ti ruigrazio*—'St. Cosmo, I thank you.' The vow is never presented without being accompanied by a piece of money, and is always kissed by the devotee at the moment of presentation. At the great altar in the church another of its canons attends to give the holy unction, with the oil of St. Cosmo; which is prepared by the same receipt as that of the Roman Ritual, with the addition only of the prayer of the Holy Martyrs, St. Cosmus and Damianus. Those who have an infirmity in any of their members present themselves at the great altar, and uncover the member affected (not even excepting that which is most frequently represented by the *ex-voti*); and the reverend canon anoints it, saying,

Per intercessionem beati Cosmi, liberet te ab omni malo, Amen. The ceremony finishes by the canons of the church dividing the spoils, both money and wax, which must be to a very considerable amount, as the concourse at this fête is said to be prodigiously numerous."

At the present day phallic symbolism is perpetuated in our church steeples, in the crosses and circles on our altars and prayer-books, in the pictures of the lamb holding a cross within a circle on our church windows, in the cross-buns eaten at the paschal feast, in the Easter eggs, and in various other ways; while the Pyramids of Egypt and the Luxor obelisks—one in London, one in Paris, and one in St. Petersburg—form a connecting phallic link between the ancient Egyptians and ourselves. The sphynx has been said by some to be a phallic figure; but I do not subscribe to this view at all, holding the opinion that it is simply a union of two zodiacal signs, July and August of the fixed zodiac. It appears to me that at a very remote time, when the sign *Virgo* was about to be supplanted at the vernal equinox by the next sign, *Leo*—somewhere about fifteen thousand years ago, or rather later—the priests or astrologers hit upon the idea of placing the head of *Virgo* upon the shoulders of *Leo*, thus manufacturing a new kind of figure, which, on account of its partaking of the dual nature of the then most prominent of the gods, became very popular, and was depicted in various forms and in many parts of the country. This may also have been the *modus faciendi* of *Capricornus* and *Sagittarius*, if we can imagine a still earlier period when the zodiac was so different from the present form as to have signs represented by a fish, a goat, a horse, and an archer respectively.

Next to the vernal equinoxial sign the ancients held the winter solstitial sign in the greatest veneration, and consequently the goat was a very sacred animal and occupied a prominent place in all symbolical mythologies. It was from this point that the Egyptians calculated their new year, although the Persians always reckoned theirs from the vernal equinox; and it was on December 21st that the Egyptians fixed the creation of the world, which gave origin to the fable of a goat

having been the creator, thus accounting for the fact of the early copies of the Samaritan Pentateuch commencing with the following words: "At the commencement the goat (העז) renovated the heavens and the earth" (Genesis i. 1). Here we meet with a very good example of the patchwork style in which the Bible was compiled. In Egypt the new year reckoned from December 21st, and the creation was supposed to date from the same time of the year, and consequently in all records emanating from the Nile district the celestial goat was honoured for the occasion with the chief godship; but in Persia the new year commenced on March 21st, the date of the creation being fixed at the same point of the zodiac, so that the chief godship was assigned to the celestial lamb or ram and its five fellow signs of the summer hemisphere. Therefore, as the Hebrews derived their creation fable from the Persians, using also the Egyptian mythology with which to embellish their newly-made cosmogony, the two fables became mixed somewhat in the minds of these ignorant wanderers, the consequence being that in some of their MSS. the creation was said to have been the act of the goat (העז), while in others it was attributed to the ram-sun, Elyah (אליה), or the six summer signs commencing with the ram-sun, and called on that account the Elohim (אלהים), this word being the plural form of Eloh (אלוה) or Elyah (אליה), a compound word made up of Yah (יה), the Hebrew name for the sun-god, and El (אל), the celestial lamb or ram.

Not only were the three principal signs—the bull, the ram, and the goat—held in great veneration by the Egyptians, but all the zodiacal signs were worshipped in various degrees; indeed, each figure of the zodiac can be easily assigned to one of the principal gods of Egypt, as they were known prior to B.C. 2188. The ram was Amen, the Egyptian Jupiter, called Zeus Amen (Ζεὺς Ἄμην) by the Greeks and *Jupiter Ammon* by the Romans, who was represented with a ram's head and horns. The bull was Apis, or Serapis, worshipped as a living bull, the incarnation of the principal deity at the vernal equinox. The twins were the Greek Castor and Pollux,

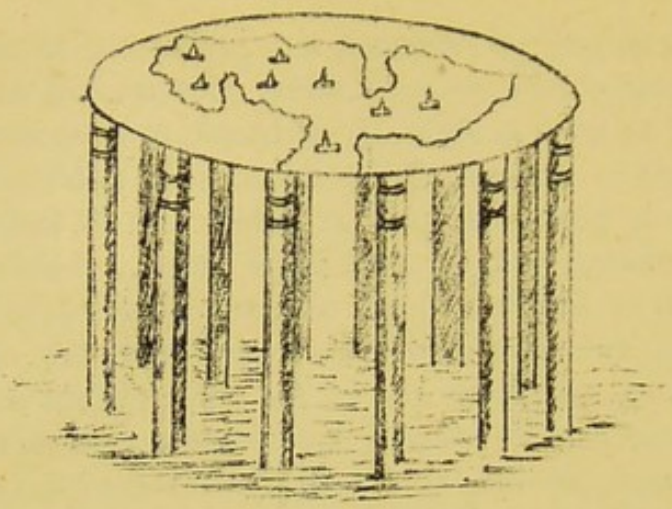
who were worshipped by the Egyptians under similar names. The crab was Anubis, the Egyptian Mercury. The lion was Osiris, Ra, or Phthah, according to the district and age, the sun-god at the height of his power at the summer solstitial point, June 24th. The virgin was Isis, the beloved of Osiris. The balances were included with the scorpion, the two being worshipped as Set-Typhon, Tum, or Sekru, according to the district and age, the sun-god at the autumnal equinox, suffering defeat at the hands of the powers of darkness. The centaur-archer was the Egyptian Hercules. The goat was Pan, or Mendes. The water-bearer was Horus, the avenger of his father's defeat, born December 21st, and a conqueror on March 21st; also Mises, the Egyptian Bacchus, who, being the sign of the sun-god's birth, leads the twelve signs out of the land of bondage, and institutes the feast of commemoration at the sign of the lamb, whose horns he wears; and also Harmachis. The fishes are Oannes, the Egyptian saviour-fish, who, when that sign was at the winter solstitial point, saved the world as the new-born sun.

These twelve signs of the zodiac were, in fact, the twelve principal gods of all races; the seven summer signs, including the two equinoxial signs, being the seven specially sacred gods, inhabiting the upper temple of the most high god, which was the vault of the summer heavens, supported by the two pillars of the equinoxes or covenants. Almost every race had temples divided into upper and lower courts or rooms, the upper one being the residence of their chief gods; and these temples were originally meant to represent the universe, having an upper hemisphere, governed by the good principle, and a lower hemisphere, governed by the bad principle, this idea being frequently further represented by a closed ark or chest, representing the lower or dark hemisphere, upon which sat the chief deity, representing the good principle of the upper hemisphere. The Egyptians, according to Plutarch, enclosed the body of Osiris in an ark every year at the autumnal equinox, when the sun was in *Scorpio*, which was a rite emblematical of the annual death of the sun-god of summer; and the Jews, it will be remembered, suffered defeat at

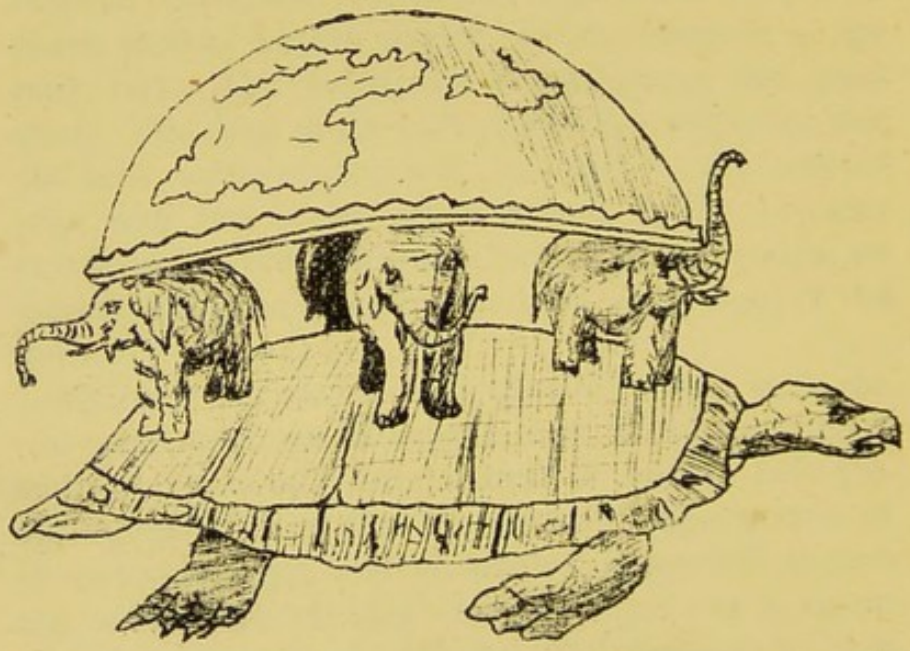
the hands of the Philistines, immediately after they had taken the ark out of Shiloh, where it had been deposited, the word Shiloh being the name of a tiny group of stars in the sign *Scorpio*. The movable temple of the Hebrews, or tabernacle, as described in Exodus, is the best example we have of this representation of the universe, being described in such minute detail as to betray its meaning to the dullest mind. It was divided into two portions—the lower or outer portion, and the upper or inner portion, the holy of holies, where dwelt the Hebrew chief tribal god, Yahouh, or Yah, sitting upon the ark of the covenant, representing the winter part of the heavens between the two covenants or equinoxes. On each side of Yah was a cherub, or monster with four faces (or, according to some, with four bodies)—one like a bull, another like a man, a third like an eagle, and the last like a lion, as we find fully described by Ezekiel (chap. i.). In my "Popular Faith Unveiled" (pp. 131, 174, and 247) I have attributed these heads (or bodies) to the four zodiacal signs of ascension after the vernal equinox, that like a bull to *Taurus*, that like a man to *Gemini*, that like an eagle to *Cancer*, and that like a lion to *Leo;* but, according to Sir W. Drummond, in his "Œdipus Judaicus," they correspond with the signs at the four quarters of the sphere—viz., the man to *Aquarius*, the ox to *Taurus*, the lion to *Leo*, and the eagle to *Scorpio*, this calculation being based on the supposition that the cherubim were first introduced during the period prior to B.C. 2188, when *Taurus* was the vernal equinoxial point, while mine supposes *Aries* to have been the chief zodiacal sign. Which calculation is right the reader must decide for himself, after carefully studying the reasons given for both conclusions. Clement of Alexandria, in his "Stromata," says of these cherubim: "Each of them has six wings, whether they typify the two bears, as some will have it, or, which is better, the two hemispheres.....Both have twelve wings, and thus through the circle of the zodiac, and of self-marrying time, they typify the world perceived by the senses." The table in the temple was symbolical of the earth, as we learn from Clement of Alexandria again, when he says: "The table, as I think, signifies the

image of the earth; it is sustained by four feet, answering to the summer, autumn, spring, and winter." The shew-bread was placed on the table in front of Yah, and was divided into twelve pieces, typical of the twelve signs, as we find stated in Ex. xxv. 22 and 30 (literally translated): "And I will hang [or be deposited] there, set [or sitting] before thee; and I will talk to thee from above the mercy seat, from between the two cherubim, which are upon the ark of the testimony.....and thou shalt set shew-bread always upon the table in front of me." The candlesticks, with three branches on each side and one in the centre, having seven lamps burning on them, represented the seven summer signs, including both the equinoxial ones. Josephus tells us that the candlesticks were divided into seventy parts, answering to the seventy decans of the seven signs. The veil of the temple was of blue, purple, and scarlet, and represented the atmospheric vault of heaven tinged, as it frequently is, by the sun's rays. The pomegranates represented the fixed stars. The dress of the high priest was ornamented with 566 bells, corresponding with the days of the sidereal year, with two bright emeralds and twelve precious stones, which, according to Clement of Alexandria, represented the sun and moon and the twelve signs of the zodiac.

Sufficient has been said to leave no doubt as to the real meaning of the tabernacle and its appurtenances, and, I think, to establish the truth of what I have previously stated—viz., that the ancient religions were of astronomical origin and abounding in symbolical rites and ceremonies. It only remains for me now to repeat what I have maintained before in other essays—that the Christian religion of to-day, although modified by time and circumstances, having been considerably manipulated so as to be brought within touch of modern requirements, is nothing more or less than a rehash of the Egyptian, Persian, Hindu, and Phœnician mythologies—an old worn-out faith, in fact, dressed in gaudy and attractive garments.



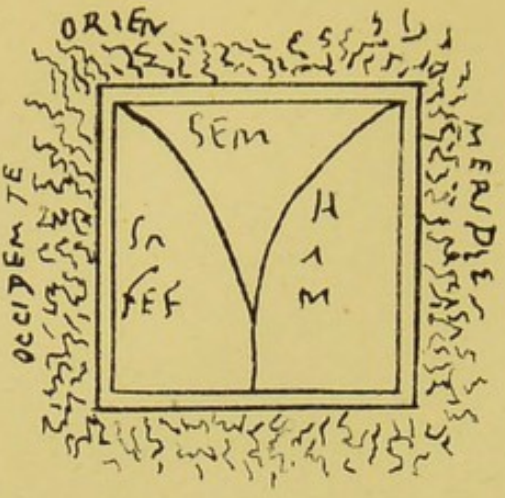
THE EARTH OF THE VEDIC PRIESTS.



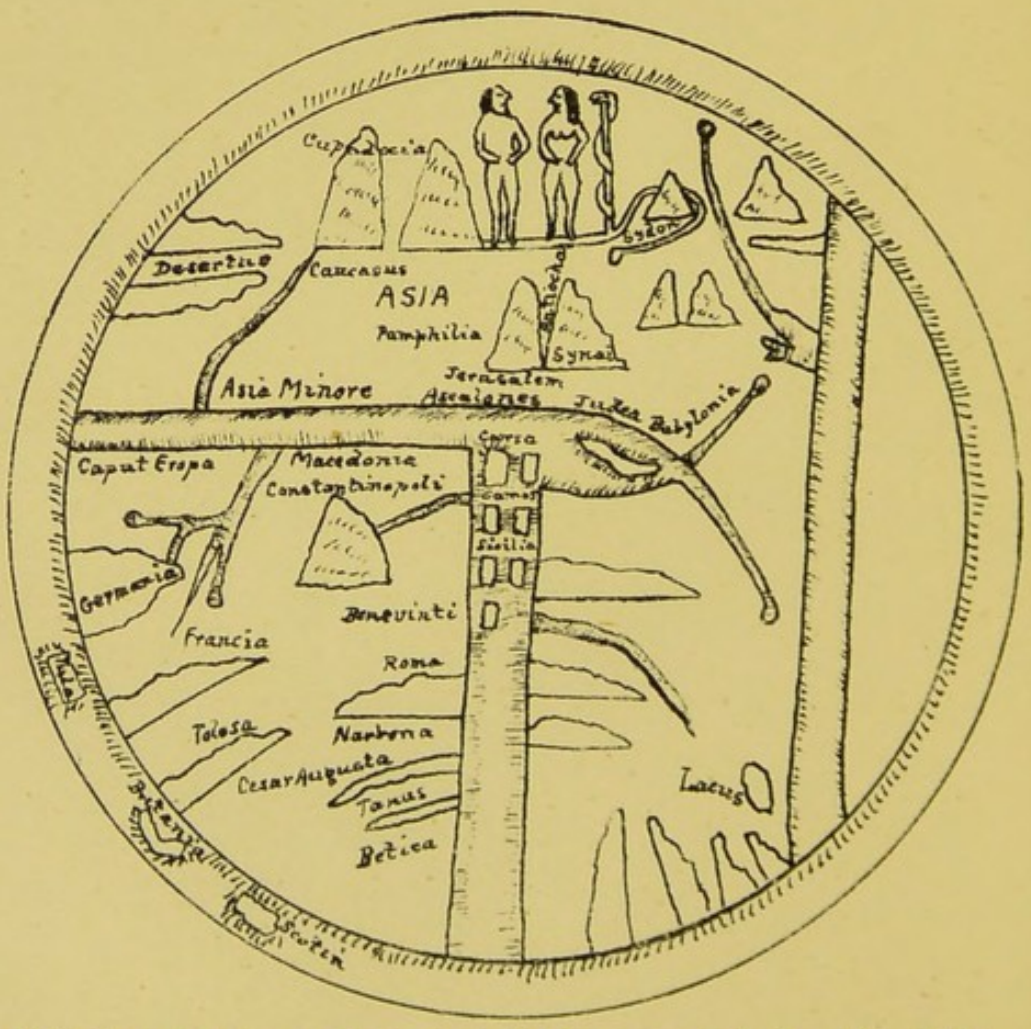
HINDU EARTH.

THE EARTH OF THE LATER GREEKS.
B.C.

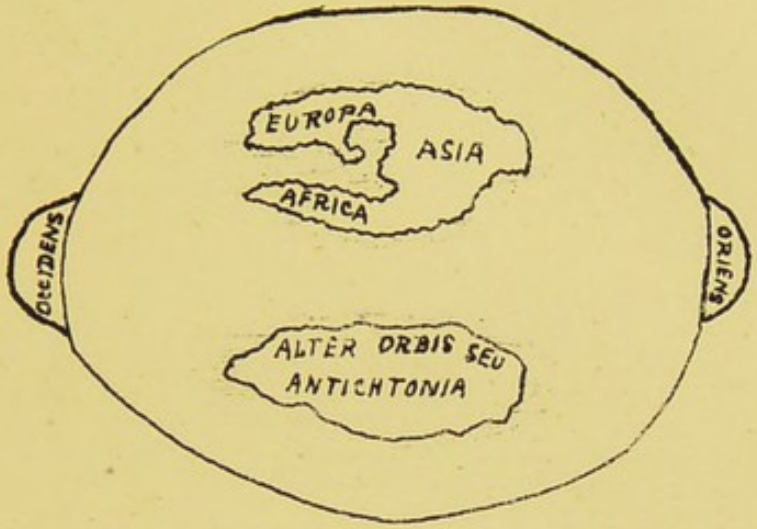
POMPONIUS MELA'S COSMOGRAPHY.
1st Century. Heathen.



CHRISTIAN MAPS OF THE WORLD IN the 10th. Century.

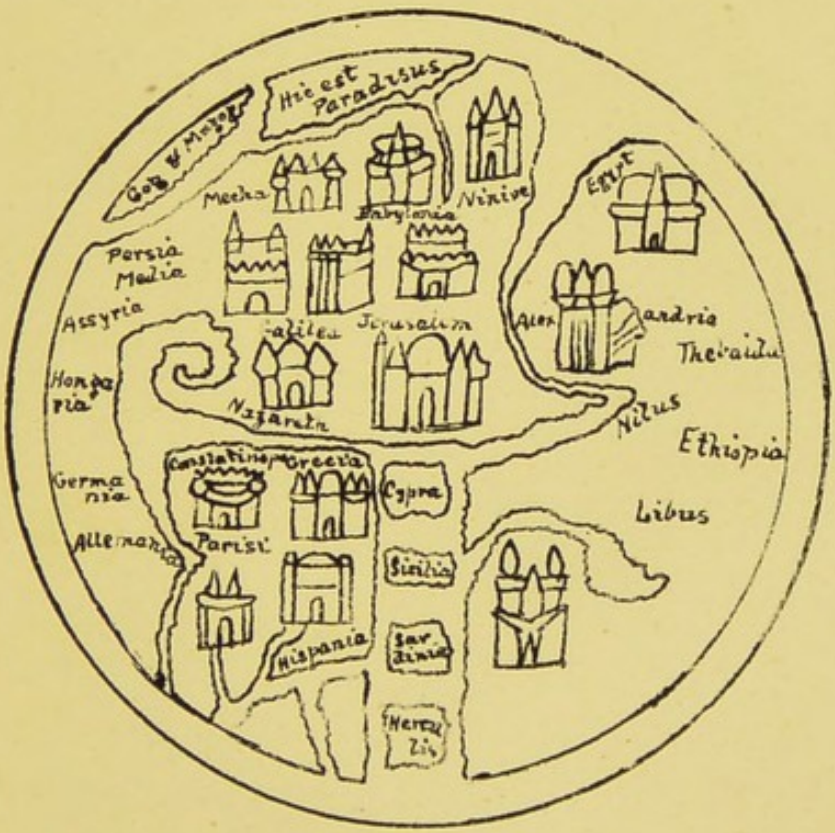


CHRISTIAN MAP OF THE WORLD IN THE 8th. Century.



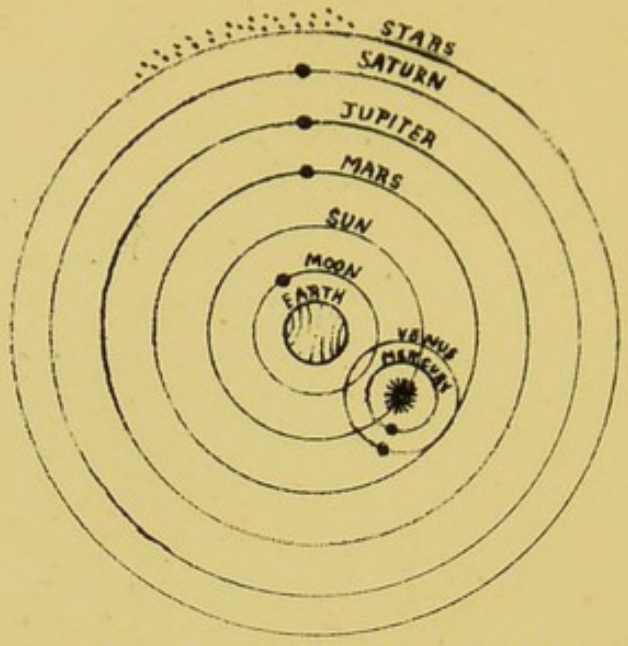
MAP OF MARCO POLO

End of 14th. Century.

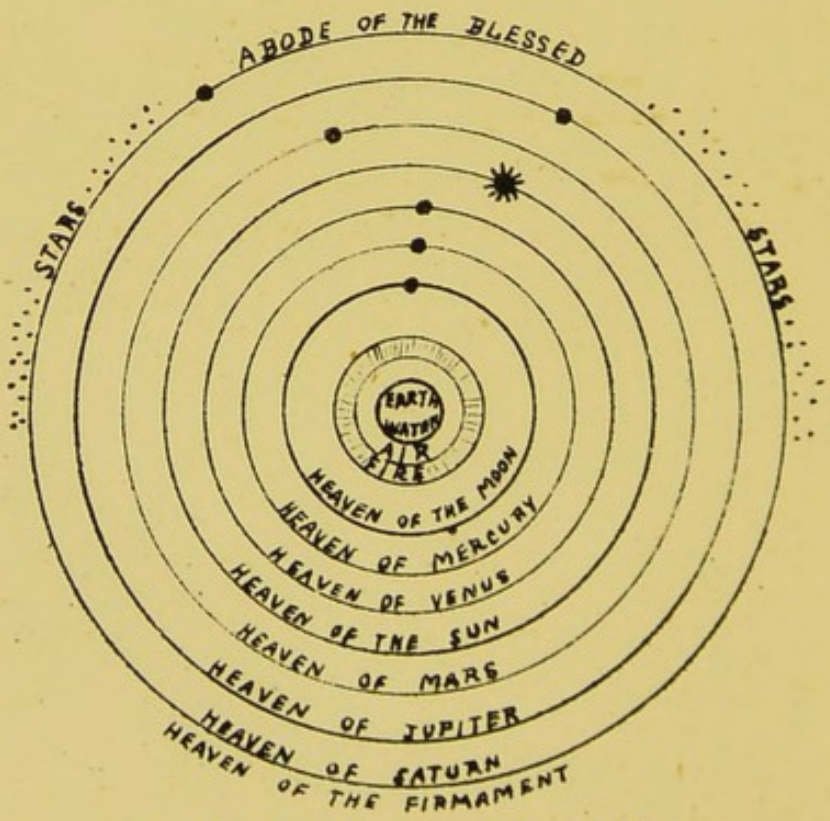


COSMOGRAPHY OF St DENIS

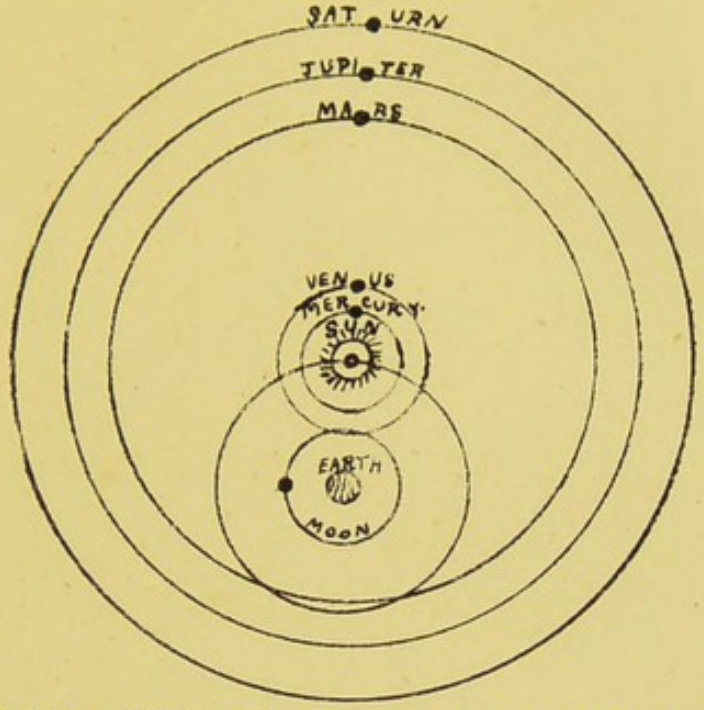
Mid 14th. Century



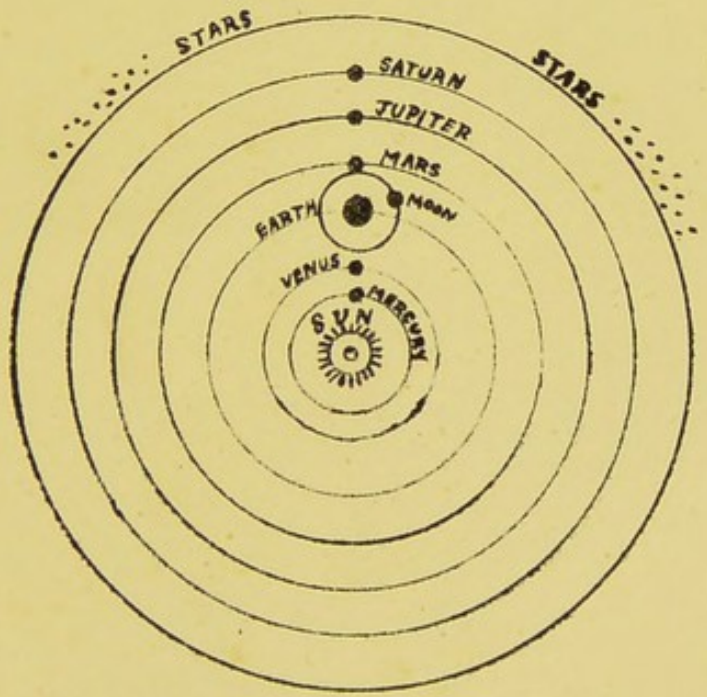
EGYPTIAN PLANETARY SYSTEM



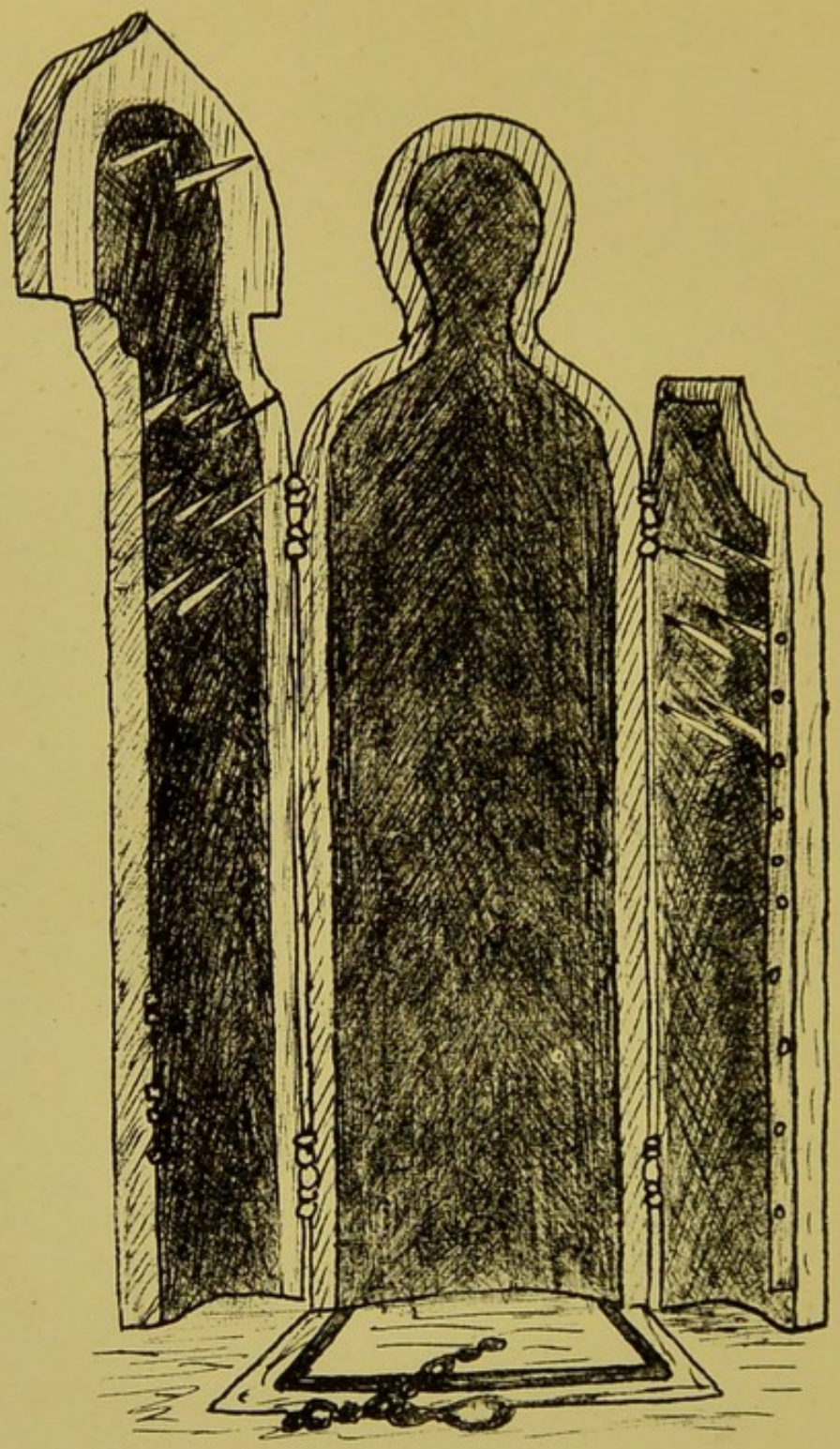
PTOLEMAIC SYSTEM



TYCHO BRAHE'S PLANETARY SYSTEM

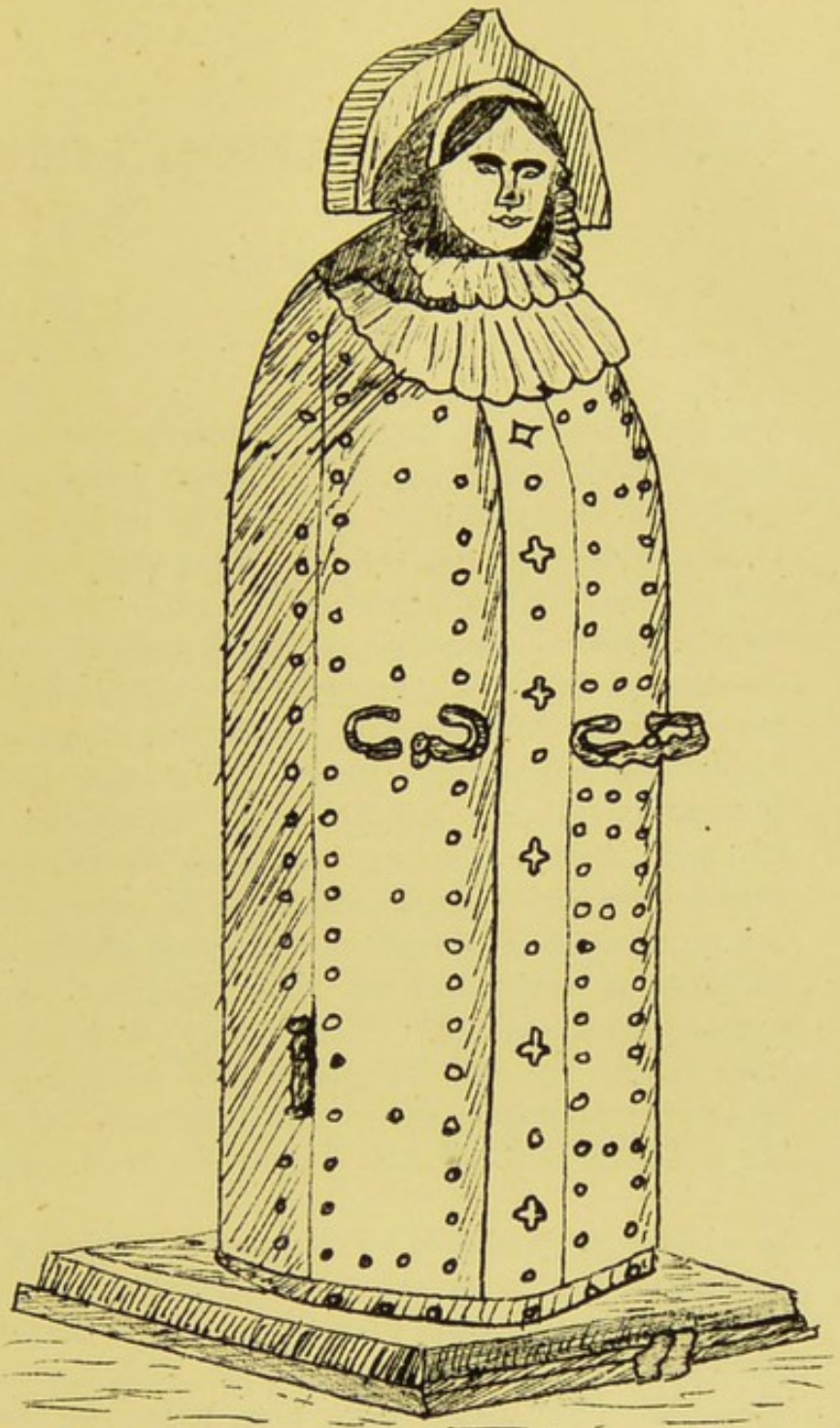


COPERNICAN SYSTEM



THE IRON VIRGIN. Inside View.

The unbeliever or heretic was placed upright inside the virgin, and the doors were closed so that the spikes penetrated the victim's eyes & chest, after which the body was dropped through the floor into the river Pegnitz.



THE IRON VIRGIN. Outside View.

Fixed in a vault cut out of the rock beneath the Nuremberg Town Hall, in Bavaria, and used as an instrument of torture by the Christian Church.

INTELLECTUAL PROGRESS

IN EUROPE.

No scientific student or observer of nature will have failed to notice that all phenomena around him are ever in a condition of progressive change, ever advancing from the simple to the complex, and ever conforming to specific laws. Just as the world in which we live has gradually developed from a condition of nebulous vapour to its present complex form, and just as man has evolved from a simple molecule of protoplasm by wonderful and manifold stages to his present commanding position, so have civilisation, trade, politics, arts, literature, and science all been slowly and gradually evolved from the primitive mind of prehistoric man. A continual change has ever been going on from the simple to the complex, from the homogeneous to the heterogeneous, from the imperfect to the more perfect. This continual progress has been in operation during all time, and will proceed in the future as of old, leaving the present day far behind in its march, as the present day has left behind it the past.

In considering the evolution of reform, or progress of civilisation, we are necessarily limited to a comparatively late period in man's history, for many thousands of years had passed away, during which time man had gradually established himself as a social animal, before any trustworthy records appeared to throw light in future ages upon the primitive condition and habits of the human family. From the patient and persevering studies of scientific men, we are now in possession of a number of facts which lead us to the conclusion that primitive man first lived the life of a wild beast, inhabiting caves, and devoting all his energies to battling with the ferocious

monsters around him. From this condition he developed into a more civilised being, becoming an agriculturalist, afterwards a manufacturer of stuffs and hardware, and still later a member of an organised state. These changes probably occupied hundreds of thousands of years, compared to which enormous lapse of time the period embraced between the Egypto-Greek or classic era and the present moment is a mere speck on the face of time. We are now tolerably well acquainted with the civilisation of the ancient Egyptians and Greeks, which had existed for many centuries before the time of Aristotle, and which some four or five centuries before our era had commenced its entry upon the wide field of scientific development which followed the conquest of Persia by Alexander the Great. These civilisations, which for centuries had been bound up with the vain superstitions connected with the legion of divinities of Olympus, of Memphis, and of Thebes, were gradually casting off the yoke of ignorance, and becoming more acquainted with the majesty of the operations of nature. Philosophers began to publicly declaim against the Olympian absurdities, and to ridicule the notion of miracles or prodigies; traditions began to be doubted and were fast being cast aside; Zeus and his court were ceasing to command respect; and the priests were often publicly insulted. The Ionian gods of Homer, as well as the Doric of Hesiod, appeared likely to be quickly committed to the darkness of oblivion. Powerful and influential resistance was, of course, opposed to the wave of progress and reason; the philosophers were branded as Atheists and their followers persecuted rigorously; Euripides was declared a heretic, and Æschylus narrowly escaped being stoned to death for blasphemy. So great was the opposition offered to the movement that the philosophers would undoubtedly have been silenced for some time to come had it not been for the sudden military expedition against the Persians. Alexander, with his 38,000 Macedonian soldiers, having crossed the Hellespont, B.C. 334, proceeded to subjugate the imperious monarch of Persia, and, after successfully conquering Asia Minor and Syria, completely defeated the Persian army led by King Darius, and took possession of the great city of Babylon.

This war engrossed the attention of all classes at home, so that the philosophers were enabled to prosecute their studies unmolested. It also in many other ways was a means of furthering the scientific efforts of that and of future ages. For the first time the Macedonians beheld the ebbing and flowing of the tides; they discovered and examined the Chaldean astronomical instruments, and learnt their calculations, extending over several thousand years; and they observed the Chaldean division of the zodiac into twelve portions, and of the day and night into twelve hours each. The particulars of these they sent home to Aristotle. What a field was here opened out for Greek speculation! The Chaldeans had detected the precession of the equinoxes, and were well acquainted with the causes of eclipses; they printed from a revolving roller, on which they had engraved cuneiform letters; they possessed magnifying instruments; and were, in fact, the tail-end of a mighty and advanced Accadian civilisation which had been in existence for thousands of years. Not satisfied with these achievements, the conquering Alexander next subdued the ancient monarchy of Egypt, learnt the great feat of the Pharaohs—viz., the circumnavigation of Africa by the Cape of Good Hope and the pillars of Hercules, and founded the celebrated city of Alexandria. He died at Babylon B.C. 323, after which his huge empire was divided among his generals; his half brother, Ptolemy Soter, who had been governor of Egypt during Alexander's lifetime, taking possession of that country, and establishing his seat of government at the new city of Alexandria.

This period marks the commencement of European civilisation. Owing to the excellent government adopted by Ptolemy, large numbers of Arabians, Jews, and Greeks were induced to take up their residence at Alexandria, which quickly became the centre of learning and first commercial city of the whole known world, and the resort of people of all nationalities. The celebrated museum, which was commenced by Ptolemy Soter and completed by his successor, Ptolemy Philadelphus, contained a library, which grew so largely that 400,000 volumes were soon acquired by it, and a daughter library, containing 300,000 volumes, built at the Serapion, or

Temple of Serapis. Books were freely bought, transcribers engaged, apartments set aside, at the king's expense, for the residence of Greek philosophers and students, and four faculties established, for literature, mathematics, astronomy, and medicine, including natural history. There were also in connection with the university botanical and zoological gardens, an astronomical observatory, with spheres, globes, parallactic rules, etc., and an anatomical theatre for the dissection of dead bodies. It was here that Euclid produced his celebrated geometrical demonstrations, which are at this day used in our schools. Here also Archimedes proclaimed his method for the determination of specific gravities, and invented the theory of the lever. Here Eratosthenes daily taught that the earth was a globe, and determined the interval between the tropics. The earth was described as possessing imaginary poles, axis, equator, arctic and antarctic circles, equinoxial points, solstices, climate, etc. Hipparchus taught the precession of the equinoxes, catalogued the stars, and adopted lines of latitude and longitude in describing the situations of places. Thus science progressed under the wise and beneficent rule of the Ptolemies.

But a dark cloud was already looming in the distance, which was destined to develop into a fierce storm, the effect of whose fury was felt for centuries afterwards. Julius Cæsar, in B.C. 30, defeated Cleopatra, then Queen of Egypt, and added that country to the Roman dominions, the museum and larger library being entirely destroyed during the siege of Alexandria. From this time learning and science began to decline. Numerous religious sects arose around Alexandria, the old mythologies were revived, and the priests once more gained influence. The temples of Jupiter Ammon and Apollo in Egypt, of Adonis and Ies in Phœnicia, of Dionysos in Greece, and of Bacchus in Rome, were again filled to overflowing, and miracles were performed in abundance. In the short space of about fifty years all the work of the Ptolemies appeared to have been undone, and the world once more given up to darkness, superstition, and ignorance, the popular frenzy being kept up by a number of ascetic monks, called Therapeutæ, who inhabited the

hills around Alexandria, the desert and rocky plains of Arabia Petræa, and the barren hills of Syria, and travelled about the country, preaching in the open air to the ignorant and credulous multitudes. Matters progressed favourably for the revivalists for a short time; but there had shortly before occurred a circumstance which proved to be, for us, the most important event in the world's history, and which considerably modified the Therapeut programme.

According to ancient records, it appears that a monk, of the ascetic order of Essenes, called Yahoshuah (Joshua) ben Pandira, was born in Syria, in the fourth year of the reign of Alexander Jannæus, or about B.C. 120; and, being educated in Egypt, under the supervision of Yahoshuah-ben Perachia, soon made himself specially obnoxious to the priests by his heterodox teaching. From the exceedingly scanty information to be obtained from the historical writers of the time, it appears that this young man had, in addition to his knowledge of Egyptian sorcery, a large acquaintance with the sublime and moral teachings of Confucius, for whose memory he appears to have had a profound respect. Observing the despicable manner in which the priests manipulated their sacred offices for their own advantage, robbing the poor and credulous people of their hard earnings and indulging in all kinds of immoralities, this young man boldly attacked these human parasites in the public places, calling them liars and hypocrites, preaching Socialistic and Communistic doctrines, and declaring that there was but one law necessary for man—viz., the golden rule of Confucius, "Do unto another," etc. The wrath of the priests knew no bounds; a council was called to consider the matter, and the bold reformer was, it is said, sentenced to death for his noble efforts on behalf of suffering humanity. Whether or not this young man ever lived, or whether he was merely an ideal creation of the fanatical minds of these therapeut monks, suggested by necessity, it is impossible to say positively; for there are no really trustworthy records from which a safe conclusion can be deduced. It is, however, probable that such a man did actually exist, for it is not likely that, had he been but an idea, the fact of his having

declared one law to be sufficient for man's moral guidance would have been included among the fabulous performances afterwards attributed to him, as such a declaration was destructive of all priestcraft; besides which, we are told in the Babylonian Gemara to the Mishna that Yahoshua, "son of Pandira and Stada," was stoned to death as a wizard in the city of Ludd, or Lydia, after which he was crucified on a tree on the eve of the Passover, about B.C. 70, which was the punishment generally inflicted on preachers of heresy and sedition. Whether he had an actual existence or was but an idea, it is an undisputed fact that his name has been, during the past eighteen hundred years, a household word, and that the whole face of European history has been moulded by the various sayings and doings fabulously attributed to him.

The reason of this is as follows. The therapeut monks of Alexandria, who flourished in the first and second centuries of our era, in attempting to revive the old mythological systems, and thus to deprive scientists and philosophers of their late rapidly-increasing power, were at a great disadvantage, owing to the length of time that had elapsed since the wonderful feats of the gods had been performed. They well understood the absolute necessity of keeping alive in the memories of the people the older miraculous events by the performance of fresh wonders in their own day; but the difficulty they had to encounter was in finding suitable individuals for the occasion. The Syrian Essene monk, who had infected a great number of the lower classes of society by his heretical and revolutionary teachings, which, at first sight, appeared likely to be damaging to the cause of the priesthood, was quickly requisitioned by these astute monks for the great purpose they had in view—viz., the reproduction on earth of the popular god Bacchus, the Greek Dionysos, and Phœnician Ies. They boldly declared that this man was, when on earth, an incarnate deity, and proceeded to attribute to him all the wonderful performances that had previously been imputed to the young sun-god Bacchus, such as miraculous birth from a virgin, resurrection from the grave three days after death, ascension to heaven, etc.; and, finally, gave him the

Phœnician name of Bacchus, Ies, in its Greek form Iesous—Greek being, at that time, the prevailing language around Alexandria. The new religion gradually spread from Egypt over the European provinces of the Roman empire, and soon became such a great political power in the State that the incarnate fiend and Emperor Constantine, in A.D. 312, was induced to place himself at its head, and use its increasing influence to further his own wicked projects. The new Church, by this act, gained an enormous power; its priests became arrogant, the philosophers were even more persecuted than before, and learning was fast approaching its end. The only scientific work which the Church retained was the "Syntaxis" of Ptolemy, the Alexandrian astronomer, which taught that the earth was the fixed centre of the universe, around which all other heavenly bodies rotated. It also treated of the precession of the equinoxes, the milky way, and the distances of the various bodies in the heavens from the earth; but, as the geocentric theory was clearly taught in conformity with the Bible records and the religious convictions of the people, this system was gradually adopted by all classes of society, and became the recognised authority on astronomy.

A furious and important controversy about this time broke out between Arius, the leader of those who retained the original belief in the manhood of Jesus, and Athanasius, the leader of the Christians, who declared him to be divine, which culminated in the celebrated Council of Nicea, A.D. 325, at which it was decided that he was actually god. From this moment not only Arians, but all others who refused to believe in the god Jesus, were savagely persecuted, until, at last, science and learning received their death-blow by the destruction of the Serapion, under the order of the Emperor Theodosius, and the murder of Hypatia at Alexandria. This philosopher was in the habit of lecturing on mathematics at the university, and was so popular that the jealousy of Cyril, Bishop of Alexandria, was aroused; she was seized by his fanatical followers as she was going to her lecture-room, stripped naked, dragged into a Christian church, and there brained by the club of Peter the Reader, in A.D. 414.

Justinian next ordered the teaching of philosophy to be discontinued at Athens, and closed all the schools. The sciences were made to conform to Genesis, which was declared to be the only true account of the origin of nature; and the earth was declared to be flat, the sky spreading over it like a dome—or, in the words of St. Augustine, like a skin—in which all the bodies moved to give light to man. Lactantius declared the globular theory to be heretical. "Is it possible," he said, "that man can be so absurd as to believe that the crops and the trees on the other side of the earth hang downwards, and that men have their feet higher than their heads? If you ask them how they defend these monstrosities, how things do not fall away from the earth on that side, they reply that the nature of things is such that heavy bodies tend towards the centre, like the spokes of a wheel, while light bodies, as clouds, smoke, fire, tend from the centre to the heavens on all sides. Now, I am really at a loss what to say of those who, when they have once gone wrong, steadily persevere in their folly, and defend one absurd opinion by another." St. Augustine also said that "it is impossible there should be inhabitants on the opposite side of the earth, since no such race is recorded by Scripture among the descendants of Adam;" and again: "In the day of judgment men on the other side of a globe could not see the Lord descending through the air." Thus perished all the grand work effected by the Ptolemies. Science was annihilated, progress arrested, and the dark ages had commenced, which lasted until the time of Luther and Copernicus, in the commencement of the sixteenth century. Throughout this long and dreary period the most cruel enormities were practised upon unoffending people; the Church became gorged with wealth; the clergy gave themselves up to all kinds of lust and debauchery; relics were sold, dispensations bartered; and no one's property or person was safe. Progress was, however, only arrested for a time.

About the year 570 Mohammed was born in Arabia, and in 610 he declared to the world that he had been commissioned by the angel Gabriel to preach the unity of god. He appears to have been a very remarkable religious enthusiast, who believed himself in his divine

mission, and was eminently successful in his arduous undertaking. Idolatry was quickly abolished among the Arabs, and replaced by the religion of Mohammed. On the death of the prophet his successors as vigorously pursued the course he had entered upon. Ali, the general of Khalif Omar's army, in A.D. 637, captured Jerusalem and conquered Syria in the name of the one true god and his prophet Mohammed. The Khalif rode from Medina to Jerusalem upon a red camel, and, as he entered the conquered city, issued the following proclamation: "In the name of the most merciful God. From Omar Ebno'l Alchitâb to the inhabitants of Œlia. They shall be protected and secured, both in their lives and their fortunes; and their churches shall neither be pulled down nor made use of by any but themselves." Sophronius, the chief Christian priest, having invited the conqueror to pray in a Christian church, received a polite refusal, Omar contenting himself with kneeling on the steps outside, so that his followers might not have any excuse for seizing the edifice or otherwise annoying the conquered Christians. The Khalif and his followers then pressed northwards, conquered the Roman Emperor Heraclius, sent a fleet to the Hellespont, defeated the Roman fleet, and laid siege to Constantinople, then called Byzantium. Egypt was next conquered, the remnants of the Serapion destroyed, and the whole of North Africa added to the dominions of the Khalif. Spain was then seized upon, and the entire country, as far north as the Loire, annexed to the growing empire. In 732 Charles Martel succeeded in stopping the Saracen foe at Poictiers and driving him back to Spain, thus relieving the anxiety of the Church, which was now becoming intense. In 846 a Mussulman fleet sailed up the Tiber, menaced Rome, and carried away St. Peter's altar to Africa, the Christian empire being saved from further trouble only by the Mohammedan power being divided into three Khalifates.

According to the Koran, the earth was a square plane, on the edges of which rested the heavenly vault, divided into seven stories, in the topmost of which dwelt god in his omnipotence. This theory, however, was quickly given up by the learned Saracens, Al-Mamun declaring

it to be unscientific, and asserting that the earth was globular, with a circumference of about 24,000 miles, which was not far wrong. In 661 the Khalif Moawyah encouraged this new teaching, and ordered the writings of the Greek philosophers to be translated into Arabic. In 753 the Khalif Almansar recommended the study of astronomy, medicine, and law at Bagdad; and his grandson, Haroum-al-Raschid, ordered that every mosque should have a school attached to it, and established a large library at Bagdad for the use of learned men. The sciences of chemistry and geometry were revived, and algebra invented by the Saracens. At Cairo the Fatimist Library became the wonder of the world; and the great library of the Spanish Khalifs had 600,000 vols., its catalogue alone occupying 44 vols. Gibbon tells us that they "diffused the taste and the rewards of science from Samarcand and Bokhara to Fez and Cordova, and that the vizier of a sultan consecrated a sum of two hundred thousand pieces of gold to the foundation of a college at Bagdad, which he endowed with an annual revenue of fifteen thousand dinars." The first medical college in Europe was founded by the Saracens at Salerno in Italy, and the first astronomical observatory was erected by them at Seville in Spain. The streets in Spain were lighted, baths were erected, and total abstinence universally practised. Thus we see that, while the power of the Church was gradually steeping central Europe in darkness, ignorance, and wretchedness, progress was on the march again in Western Asia, Africa, and Spain. During this period, however, there were not wanting in Europe bold men who attempted a revival of philosophy; but these were quickly suppressed by the Church. In A.D. 800 there appeared a man in Britain called John Erigena, who, having read Aristotle's works, adopted his views and attempted to reconcile them with the Christian religion. There were also many Christian divines who had crossed the Mediterranean to study philosophy secretly from Mohammedan doctors. Erigena declared that every living thing evolved from something that had previously lived; that each particular life-form was but a part of general existence or mundane soul; and that all life must be eventually re-absorbed in deity. The

Church became infuriated and alarmed at this heretical barbarian, who taught the pernicious doctrines of emanation and absorption, and steps were immediately taken to suppress him.

During the period of quiet which followed a certain priest of Thuringia, Bernhardt by name, created a great sensation in central Europe by declaring that the end of the world was fast approaching; that the prophecy contained in the twentieth chapter of Revelation would be fulfilled on December 31st, in the year 1000—or possibly immediately before that time—when the devil would be unbound; and that unutterable calamity or annihilation would come upon the world. The clergy quickly followed suit, and as the fearful day approached every church and cloister in Europe resounded with the frantic appeals of the monks and priests for their flocks to prepare for the awful doom. Europe was turned upside down; business was suspended; kings, princes, senators, nobles, and peasants all alike left their occupations to seek refuge in some holy sanctuary against the coming event. As the dread moment approached there was not a church or convent in Europe that was not crowded to suffocation, the people imagining that, if they were found at the last moment in some consecrated place, their chances of being saved would be better. Hundreds and thousands of these poor wretches never had opportunity of obtaining the coveted shelter, having been bereft of their reason under the awful excitement of the hour. Amid prayer, faintings, hysterical screaming, and chanting of choirs—priests, monarchs, and beggars all huddled together anyhow—the clock struck twelve, and dead silence prevailed. Gradually the people roused themselves from their stupor to find themselves the victims of a cruel hoax. Strange to say, not any attempt was made to punish those who had produced such a melancholy state of things. Kings and nobles had endowed monasteries and churches with lands and wealth, which they believed would soon be of so little use to them, and became suddenly penitent, assuming the monk's shirt of hair, and otherwise showing evidence of their piety and humility. William of the Long Sword, Duke of Normandy, Hugh Duke of Burgundy, Hugh Count of Arles, the Emperor Henry II.,

all renounced their wealth and position to become monks. Nobles had left lands and castles to the Church, the deeds being drawn up by monks and witnessed by prelates and sovereigns, as though no day of reckoning was at hand, the form being invariably as follows: "Seeing that the end of the world is now approaching, and that every day accumulates fresh miseries, I, Baron ——— (or King ———), for the good of my soul, give to the monastery of ———," etc. The Church, which before was poor, now became gorged with wealth, and the ignorance and credulity of the people secured the treasures to the now powerful prelates.

During this period of excitement and terror the number of pilgrimages to the Holy Land had enormously increased, so much so that the Saracen masters of Jerusalem, with the view of putting a stop to the now troublesome and inconvenient influx of Christians to the Holy City, commenced to persecute the pilgrims, thus creating a very great ill-feeling against themselves throughout Europe. Peter the Hermit, a monk of Amiens, took up the cause of his ill-treated brethren, and forthwith commenced to preach a holy war against the Saracens of Syria, Pope Urban II. and his priests promising absolution from all sin to those who took up arms against the Infidel. A vast multitude of rabble from all parts of Europe soon started on their march to the Holy Land, being divided into three large armies, one led by Walter the Penniless, another by Peter the Hermit, and the third by Gottschalk, a monk. The armies gave themselves up to unheard-of iniquities, spreading poverty and misery on all sides in their march, braining all who refused to give up their provisions and property to them, and, at last, arriving in Constantinople footsore and diseased, having left two-thirds of their comrades to die of starvation on the road. Crossing over into Syria, they met the Saracen foe, who quickly put an end to their sufferings by annihilating the whole lot. Seven other Crusades followed, one composed altogether of children, who, the priests declared, were to be the inheritors of the Holy Land, it being now apparent that full-grown men were too sinful to conquer the Infidel. The army of children was accordingly shipped off to destroy the

Saracen foe, but never reached Palestine, the boys having been sold as slaves, and the girls drafted into Turkish harems. When, at last, Acre surrendered to the Crusaders under Richard Cœur de Lion, the leniency displayed by the Khalif Omar in his capture of Jerusalem in 637 was repaid by 2,700 Saracen hostages being brutally beheaded outside the city walls for the sport of the Christian soldiers. All this time Europe was in a constant state of agitation and alarm, which was further intensified by the revival in 1180 of the doctrines of John Erigena by the Saracen philosopher Averroes, who boldly preached them in Spain, making converts in all directions, among whom was the great Jewish writer, Maimonides, who had been held by the Jews in the highest esteem, and considered second only in wisdom to Moses.

Under the tolerant and liberal rule of the Saracens Averroism made great progress in Spain, where Mohammedans, Christians, and Jews were permitted to live peaceably together, and where philosophical theories were openly and fearlessly taught ; but a day of reckoning was at hand. On the death of the Caliph Hakem, Almansor usurped the throne, and, in order to secure his position, entered into a secret treaty with the orthodox section of the Mohammedans, thus establishing a Church and State party of enormous power, which culminated in the expulsion of Averroes from Spain and the suppression of the study of philosophy. Thus were crushed again philosophy and progress in 1198. The Christians of Italy, Germany, and France followed suit, ordering all Averroists to be seized and punished, and shortly afterwards extending the order also to Jews and Mohammedans. From the accession of Almansor dates the downfall of the Mohammedan power in Spain and the commencement of the fearful persecutions of Infidels by the Christian Church, which has left such a dark blot upon the pages of European history.

The Saracen power in Europe was annihilated by Ferdinand and Isabella, and the Inquisition established by Pope Innocent IV. in 1243. For two hundred years it seemed as though philosophy and progress were indeed dead, so relentlessly did the Church persecute all heretics and denounce all scientific studies. But an occurrence

took place in 1440 which completely turned the tide of events. In that year the art of printing was introduced into Europe by the Venetians, who had learnt it from the Chinese; and in 1469 it was carried to France, and from thence to all the great cities of the continent. At first the Church paid little heed to the innovation; but it soon became apparent that a dangerous medium had been introduced for intercommunication of the people and their governments, which must lessen the need and importance of a religious medium. Books were only allowed to be published under the supervision of the ecclesiastical authority, and heavy penalties inflicted upon all who attempted to circulate any heretical works. The writings of Averroes, Maimonides, and other heretics, were ordered to be burnt, the doctrines taught by them being declared blasphemous and subversive of all good government. The leading and most learned Jews and Mohammedans in Spain and Southern France were avowed Averroists, and did not shrink from preaching their doctrines in the public thoroughfares; and the infection was extending so rapidly that the Church feared that a great calamity would overtake the orthodox faith unless some steps were taken to put a stop to the heresy. The Inquisition, which had been found so effective in silencing heretics in France, was now utilised for dealing with the Jews and Moors. A cry was made in Castile by the orthodox Christians for the establishment of the Inquisition in Spain, which was immediately taken up by all haters of progress; and so great was the influence brought to bear by the Dominican monk and arch-fiend, Torquemada, upon the Queen Isabella that the Pope was petitioned for a bull, which was issued in 1478, for the detection and suppression of heresy in Spain. The Christian monster, Torquemada, proved himself a worthy agent of the Inquisition, burning at the stake in eighteen years about 10,220 persons of both sexes. Dispensations from the operation of the Inquisition were sold by the Pope to such as could afford to purchase them; and in 1492 all unbaptised Jews, old or young, were ordered by Torquemada to leave Spain within four months, and to leave behind them all those effects they could not sell in the meantime. These poor wretches swarmed in the

roads in their thousands, rending the air with their piteous cries, the Christian Spaniards being forbidden to render assistance under penalty of torture. The consequence was that hundreds and thousands of men, women, and children died by the wayside from hunger, thirst, and fatigue. In 1502 a further order was issued at Seville for the Spaniards to drive out of their country every Infidel they could hear of, no matter what the nationality might be. The Moors were particularly indicated in the document, one clause stating that it was justifiable to kill Mohammedans on account of their shameless infidelity. The consequence was that, in a marvellously short space of time, there was not a Mohammedan to be found on the European side of the Straits of Gibraltar. In spite of the precautions made use of by the Christians for the prevention of the study of philosophy and the acquirement of knowledge, the news of the discovery of America by Columbus, in 1492, very soon found its way all over Europe, producing the most intense sensation, for the discovery came as a terrific blow to the Church and its inspired Bible. To make matters worse, in 1522 Magellan sailed completely round the world, thus demonstrating conclusively that the earth was a globe.

Matters appeared to be going wrong with the Church, in spite of the recent bloody triumphs of the Inquisition; and the clergy and laity were not slow to notice the turn events were taking. Martin Luther, a young Augustinian monk, in particular, took advantage of the unsettled state of the mind of Europe to make a furious onslaught against the Pope and the Church. Having been told by Cajetan that he must "believe that one single drop of Christ's blood is sufficient to redeem the whole human race, and the remaining quantity that was shed in the garden and on the cross was left as a legacy to the Pope, to be a treasure from which indulgences were to be drawn," this young priest declared he never would accept such a doctrine, and commenced forthwith to preach openly against the sale of indulgences, declaring that the Church must stand or fall on the Bible, which taught no such doctrine. The orthodox clergy, on the contrary, declared that the Bible derived its authority from the Church, and not the Church from the Bible, and demanded that Luther

should be arrested for heresy. In 1520 the Pope excommunicated the bold monk, who, in return, defiantly burnt the Papal bull, for which he was ordered to appear before the Imperial Diet at Worms, when he deliberately refused to retract. The views of the reformer quickly spread through Switzerland and Germany, Pope Leo thundering forth his anathemas upon all who joined the dangerous movement, until, at length, after many bloody wars and horrible massacres, such as the slaughter of the Huguenots, etc., the Reformation was firmly established, and the Bible became, to the Reformed Church, the only guide to morals and duty. At first, the Pope sullenly submitted to what appeared to be the inevitable; but soon it became apparent that, in order to keep any authority at all over the people, some plan would have to be adopted to curtail the growing influence of the Reformed Church. Accordingly, Pope Paul III., in 1540, established the Society of Jesus, the members of which order were sent abroad all over Europe for the purpose of secretly undermining the influence of the Reformers. Three years afterwards, as if to counteract the evil designs of the Jesuits, there appeared on the scene the celebrated work of Copernicus, which was destined for ever to demolish the geocentric theory of Ptolemy, and to establish the heliocentric philosophy, which taught that the sun was the centre of our system, and that all the planets, including our earth, revolved in regular order round it, and which, of course, called forth a volley of abuse from the Vatican, the theory being declared heretical and its author anathematised. The effect of all this was to cause quite a revolution in thought among the learned of Europe, which gave rise to another schism in the Church, departure being this time from the ranks of the Reformers.

Arianism was once more revived by a number of people, who maintained that the doctrine of the Trinity was un-Scriptural, and that Jesus was but a man like themselves, though endowed with great authority from god. The orthodox and reformed Churches both alike were alarmed at this turn of events, and co-operated to suppress the new heresy, denouncing all philosophical studies, and branding the Unitarians as Infidels. The upshot was that Servetus was burnt to death at the stake by the order

of the Trinitarian Calvin, and a check was thereby given to the propagation of the Arian doctrines. It is satisfactory to note that a Unitarian College now stands upon the very spot where Servetus was murdered.

Again progress was arrested, and this time it seemed as though a mortal blow had been dealt at all acquirement of knowledge, for shortly afterwards, in 1559, Pope Paul IV. established the Congregation of the Index Purgatorius for the purpose of examining all books and manuscripts intended for publication, and of deciding whether the people should read them. The usual counterpoise, however, quickly made its appearance, proving once more that progress cannot be arrested for long.

In 1563 the first newspaper was produced in Venice, which again set the ball of intellect rolling along, never more to be stopped by priest or prince. The new Copernican philosophy was now accepted by many learned men, among whom even were some of the priesthood. Giordano Bruno, an Italian Dominican monk, among others, embraced these truths, and was not afraid to openly teach them, for which daring act he was soon obliged to seek refuge in Switzerland, where he prosecuted his studies for some time in peace. The fiends of the Inquisition, however, soon discovered his whereabouts and drove him into France, then into England, and then back to Germany; in the end arresting him at Venice. He was taken thence to Rome, publicly accused of teaching the plurality of worlds, and burnt at the stake by the Inquisition in 1600. Eighteen years after the murder of this noble Italian, Kepler, of Würtemberg, published his "Epitome of the Copernican System," in which he demonstrated for the first time that all the heavenly bodies are bound in their courses by various laws. This work, like those of Copernicus and Bruno, was prohibited by the Congregation of the Index Purgatorius, and Kepler himself declared a dangerous infidel. Still, in spite of the fury of the priesthood, Catholic and Reformer alike, the study of the sciences made rapid strides, and in 1632 the venerable Galileo published his "System of the World," in which he maintained the accuracy of the Copernican theory. For this daring disregard of the Church's

warnings he was summoned to Rome and brought before the Inquisition, accused of having taught that the earth moves round the sun. The poor old man was compelled to kneel on the floor of the court, place his hand on the Bible, and recant, after which he was incarcerated in the prison of the Inquisition, where, ten years afterwards, he died. Still science progressed, and was considerably aided by the rapid increase in the number of newspapers throughout Europe. In 1631 the *French Gazette* was established, and, soon after, newspapers appeared in all important cities, much to the discomfiture of the Church, whose power was now more seriously imperilled than ever. Confidence was gradually becoming established, and Descartes dared, in 1680, to make an attempt to analyse the mind, declaring that the necessity of universal doubt was the only starting-point of all true philosophy. He was followed, six years later, by Newton, who published his "Principia," in which he demonstrated the grand truth which has immortalised his name—viz., that all bodies attract each other with forces jointly proportionate to their masses, varying universally as the squares of their distances. Thus was established the great law of universal gravitation, which marks an epoch in the intellectual development of man. Owing to the constantly-recurring feuds between the Lutherans, Calvinists, and Catholics, this great discovery passed for a while almost unnoticed; but it soon became apparent that the final blow had been given to the old theory of divine intervention in the movements of the universe, and that learned men of all countries were rapidly embracing the Newtonian theory of irreversible laws.

It was, however, now too late for the Church to interfere, for all classes were quickly becoming impressed with the grand theory of gravitation, which was destined for ever to remain the most wonderful discovery of man; and, although the clergy still continued to anathematise all scholars and scientists, the study of nature was pursued with rapidly-increasing enthusiasm, as though to make up for lost time. In 1690 Locke, the physician and philosopher, published his "Essay on the Human Understanding," in which he declared all human

knowledge to be the result of experience, thus entirely upsetting the old theory of intuition. Twenty years later Leibnitz published his work entitled "Theodicée," in which he endeavoured to solve the difficult problem of existence of evil in the world under the moral government of Deity. These two rival philosophers soon became the leaders of philosophic thought in their respective countries; but barely thirty years had passed away before an iconoclast appeared, in the person of David Hume, who cut away the ground ruthlessly from beneath their feet. His "Treatise on Human Nature," published in 1739, upset all the philosophical systems of the past, replacing them by the great theory of causation, which was soon accepted by every philosopher and scientist. Kant followed in 1781 with his "Critique of Pure Reason," in which he submitted matter to analysis, and declared it to be possessed of inherent force.

The other sciences were also joining in the march of progress. Chemistry was fast becoming a settled science; Priestley's discovery of oxygen, in 1774, had created a great sensation; Cavendish shortly afterwards, in 1783, discovered the constitution of water; and Lavoisier, in 1789, summarised the combined researches of these two chemists and himself in his "Elements of Chemistry," which at once was recognised as the standard work on the subject. Astronomy had, since Newton's discovery of gravitation, assumed a more settled condition, but was destined to further modification by the enunciation of the nebular hypothesis by Laplace, who commenced to publish his bulky work, "Mecanique Celeste," in 1799.

The nineteenth century opened with progress, as it were, on the gallop. In 1804 the first locomotive engine was started in England, at the same time that the first screw steamer was run at New York. It is needless to enumerate all the inventions of scientific men during the century, which are so well known to every one. Suffice it to say that, in a marvellously short space of time, the whole face of Europe has been changed. Railways cross each other at all points, like a huge network; telegraph wires link together as one place all important centres of population; public buildings are protected

from nature's freaks by lightning conductors; lighthouses dot the whole length of our coasts; the penny postage conveys our thoughts to and fro throughout the length and breadth of the land; a free press ventilates our grievances and enlightens our minds; hospitals and dispensaries minister to the sick and maimed wherever we go; and the Habeas Corpus Act endows each well-disposed individual with freedom and liberty. What a metamorphosis to be effected in so short a time!

The lesson we learn from such a cursory glance as this necessarily is at the intellectual progress of Europe during the last two thousand years is full of the deepest meaning. We cannot help being struck by the dogged manner in which the Christian religion has opposed all progress, ruthlessly murdering in cold blood any who dared to suggest that the now-established and universally-accepted theories might possibly possess some little of the truth. Every new scientific truth or discovery has been denounced by the Church, every great benefactor to the human race persecuted and hunted to death by the sleuth-hounds of bigotry and intolerance, and every European war or massacre hatched out of religious differences. To this very day the Church, though robbed of all its old power to inflict evil and misery, persists in its denunciation of all scientific discoveries; and not one of the numerous sects which at present divide the Christian Church is exempt from this charge. Hegel, Bunsen, John Stuart Mill, Rénan, Huxley, Darwin, Tyndall, Oliver Wendell Holmes, Carpenter, Herbert Spencer, Emerson, Haeckel, Schopenhauer, Victor Hugo, and, in short, all the leaders of thought of our century, have incurred the bitter hostility of the various Christian sects; and yet what a heirloom the works of these men form for the coming generation!

The discovery of the power of chloroform and ether to relieve pain was denounced by the Church because it was proposed to apply it to the relief of the agony of childbirth, the natural inheritance of woman under the divine curse of Eden; the abolition of slavery was also opposed by these human parasites because the practice was ordered in the Bible; and it is well known how the priests of the Church utilised for their own

purposes those abominable texts of the Old Testament, "Thou shalt not suffer a witch to live," and "Neither shalt thou countenance a poor man in his own cause."

The Middle Ages bear attestation to the fidelity of the priesthood to their sacred oracles. Have not two honest citizens of London quite lately undergone one whole year's imprisonment for the grave sin of ridiculing the notion of the Hebrew and Christian gods being other than creations of man's imagination? This very lecture will probably be the means of bringing down the wrath of the priesthood—State Church and Nonconformist alike—upon its author. And why? Are the facts untrue? Just the reverse. The writer, historian, or pseudo-scientist who writes volumes of falsehoods for the purpose of propping up for a short time longer priestcraft and tyranny will assuredly fare well at the hands of these insinuating gentlemen of the cloth; but let the man who dares to write the honest, unvarnished truth beware! His fair name, his business, and his social and family ties will be undermined and destroyed in an incredibly short space of time. All honor, therefore, be given to those brave ones who have dared to stand before the world and speak out the truth in the cause of humanity! They have done their share in helping forward the march of intellect, in stifling superstition, and in uprooting ignorance The state of Europe to-day, as compared with its condition two thousand years since, is overwhelming evidence of the continual progress of civilization, which, in spite of the opposition from its old enemy, the Church, in the past and, to a limited extent, in the present, has proved to the world that it must, of necessity, continue for all time as one of the great and immutable laws of Nature.

GENESIS I. 1, according to authorised Hebrew version, with final letters, but without vowel points and breathings.

בראשיתבראאלהיסאתהשמיסואתהארץ

"In the beginning the ram (or lamb)-sun-gods (or the good gods) renovated (reorganized or re-started) the heavens and the earth."

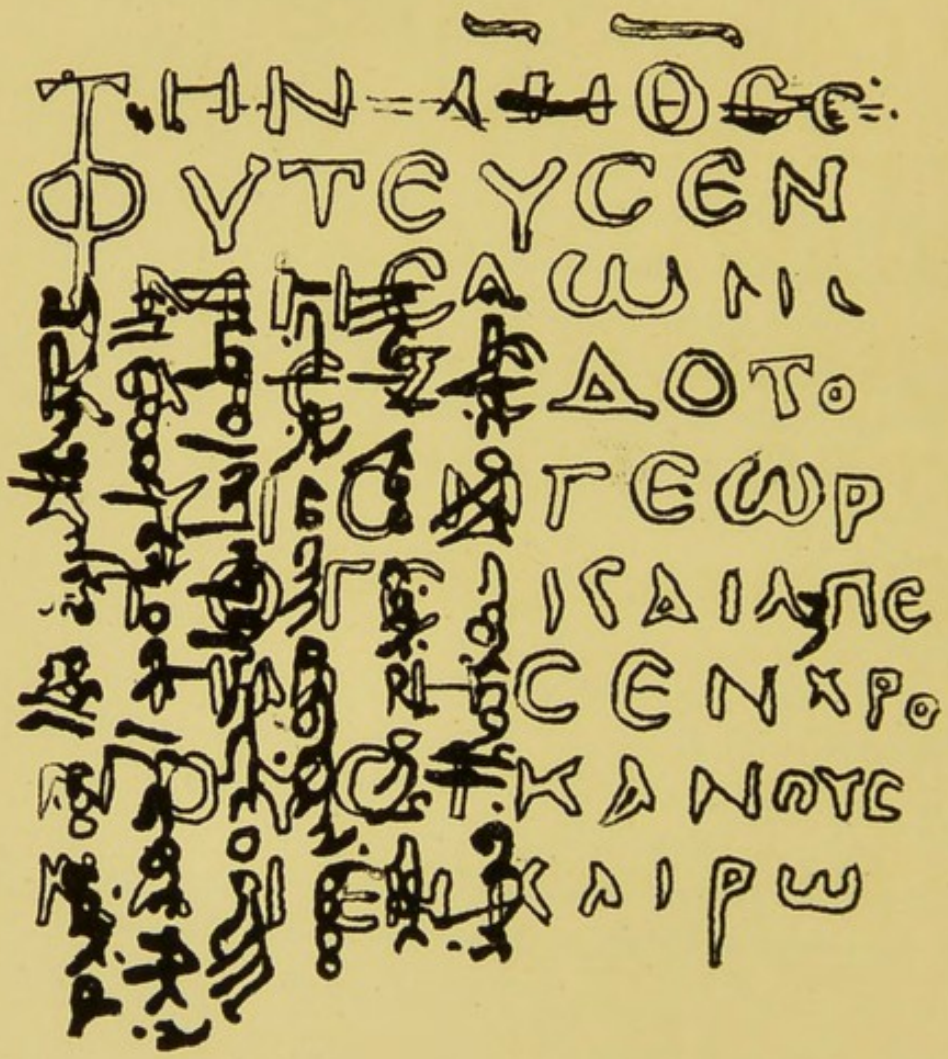
This refers to the commencement of the Persian new-year, at the vernal equinox, *Aries*, the ram or lamb.

GENESIS I. 1, according to the Samaritan Pentateuch, transcribed into ante-Masoretic, or original Hebrew, as written before the invention of the five final letters.

בראשיתבראהעזאתהשמימואתהארצ

"In the beginning the goat renovated the heavens and the earth."

This refers to the commencement of the Egyptian new-year, at the winter solstice, *Capricornus*, the goat.



Fac Simile of fragmentary MS. of sixth century (Luke XX. 9.10.), written in Greek and partially covered with Syrian writing of 10th century. Copied from "Secular Review," of March 27. 1886.

ΕΓΩΕΙΜΕΙΗΟ
ΔΟΟΚΑΙΗΑΛΗ
ΘΙΑΚΑΙΗΖΩΗ
ΟΥΔΙΟΕΡΧΕΤΑ
ΠΡΟΟΤΟΝΠΡ
ΕΙΜΗΔΙΕΜΟΥ

Small fragment from John's Gospel,
taken from the Cotton Manuscript.

THE BIBLE.

THERE is probably no book on earth that has ever had anything like so large a circulation as that which is known as the Bible; and yet few among the many millions who possess a copy ever think of asking themselves the question, "Where and how did it originate?" They are satisfied with the *ipse dixit* of their parson that it "came from God." That may be sufficient to satisfy the unthinking multitude, but it does not suffice for thinking people, who prefer to follow the dictates of their reason rather than rest on the mere word of a man or a number of men who are paid to preach that the Bible is the word of God, and whose incomes would cease if their followers thought otherwise.

What is this Bible? Where did it come from? Let us see. As we now have it, it consists of a number of books, which are divided into two main portions, the Old and the New Testaments, the former being made up of the five books said to have been written by Moses under God's inspiration, and called the Pentateuch, and a number of historical, poetical, and prophetic writings; and the latter consisting of four narratives of the life of Jesus, called the Gospels, a narrative of the Acts of the Apostles, a number of letters, and the Vision or Revelation of one John. The number of books which make up the Bible has varied from time to time, according to the fancy of the age; but about 360 years since a Council of Protestants determined that a number of hitherto received sacred writings were not the "Word of God," and finally decided that only those now included in the authorised version were of divine origin. Before that time the following books had formed part of the Bible—viz., Tobit and Judith, Wisdom, Ecclesiasticus, Baruch, Epistle of Jeremiah, Song of the Three Children, Susanna, Bel and the Dragon, and Maccabees, all of which are considered canonical at the present time by the Roman Catholic Church. Besides these writings there are a large number of others that have, at different times, occupied positions of honour in this ever-varying compilation, but which are now almost forgotten by pious divines, and entirely unknown by their credulous and ignorant dupes.

Dr. Dupin, Professor of Philosophy at the Paris University, and one

of the most pious and learned Christian writers of his time, gives a list of over 150 books that have, from time to time, been held sacred, and said to have formed part of the "Word of God," as follows:—

OLD TESTAMENT.

Books now Considered Canonical by Jews and Christians.

The five Books of Moses.
The Book of Joshua.
The Book of Judges.
The Book of Samuel, or the first and second Books of Kings.
The third and fourth Books of Kings.
Isaiah.
Jeremiah.
Ezekiel.
The Twelve Minor Prophets.
The Book of Job.
The Hundred and Fifty Psalms.
The Proverbs of Solomon.
The Ecclesiastes.
The Canticles.
Daniel.
The Chronicles.
Esdras, divided into two Books.

Books Received as Canonical by some Jews and Rejected by Others.

Esther, Ruth.

Books Excluded the Jewish Canon, and Reckoned as Apocryphal by some of the Ancient Christians, but Allowed as Canonical of late by the Church of Rome.

Baruch, Tobit, Judith, the Book of Wisdom, Ecclesiasticus, the two Books of the Maccabees.
The Song of the three Children in the Fiery Furnace.
The History of Susanna.
The History of Bel and the Dragon.

Books that are Excluded the Canon without Apparent Reason.

The Prayer of Manasseh, inserted in the Apocrypha.
The third and fourth Books of Esdras (ibid).
The third and fourth Books of Maccabees, in the Septuagint Bible.
The Genealogy of Job, and his Wife's Speech, at the end of the Greek text of the Book of Job.
The 151st Psalm, at the end of the Greek Psalms.
A Discourse of King Solomon, at the end of the Book of Wisdom.
The Preace before the Lamentations of Jeremiah, in the vulgar Latin and Greek text.

Other Apocryphal Books of the same Nature, which are Lost.

The Book of Enoch.
The Book of the Assumption of Moses.
The Assumption, Apocalypse, or Secrets of Elias.
The Secrets of Jeremiah.

Books Full of Fables and Errors, which are Lost.

The Generation, or the Creation of Adam.
The Revelation of Adam.
Of the Genealogy, or of the sons and daughters of Adam.
Cham's Book of Magic.

A Treatise, entitled Seth.
The Assumption of Abraham.
Jetsira, or concerning the Creation ascribed to Abraham.
The Book of the Twelve Patriarchs.
The Discourses of Jacob and Joseph.
The Prophecy of Habakkuk.
A Collection of the Prophecies of Ezekiel.
The Prophecy of Eldad and Medad.
The Treatise of Jannes and Jambres.
The Book of King Og.
Jacob's Ladder, and several other Tracts.

NEW TESTAMENT.

Books Owned as Canonical at all times and by all Christians.

The Four Gospels of Matthew, Mark, Luke, and John.
The Acts of the Apostles.
Thirteen Epistles of St. Paul.
The First Epistle of St. Peter.
The First Epistle of St. John.

Books Questioned, but afterwards Admitted by the Church as Canonical.

The Epistle to the Hebrews.
The Epistle of St. James.
The Second Epistle of St. Peter.
The Second and Third of St. John.
The Epistle of St. Jude.
The Apocalypse, or Revelations of St. John, which was a long time before it was admitted as Canonical.
The history of the angel and the agony of our Saviour related (Luke xxii.).
The end of the last chapter of St. Matthew's Gospel.
The history of the woman taken in adultery, related in the eighth chapter of St. John's Gospel.
The end of St. John's Gospel.
The passage concerning the Trinity, taken out of the fifth chapter of the First Epistle of St. John.

Apocryphal Writings which are not Full of Errors.

The letter of Jesus Christ to Abgarus.
The letter of the Blessed Virgin.
The Gospel according to the Egyptians.
The Gospel according to the Hebrews.
Additions to the Gospel of St. Matthew and St. Luke, in the Cambridge manuscript.
The Proto-Evangelicum of St. James.
The Gospel of Nicodemus.
The Ancient Acts of Paul and Thecla.
The Epistle of the Laodicæans.
The Epistle of St. Paul to Seneca.
The Epistle of St. Barnabas.
The Liturgies of St. Peter.
The Liturgies of St. Mark.
The Liturgies of St. James.
The Liturgies of St. Matthew.
The Canons and Constitutions of the Apostles.
The Treatise of Prochorus.
The Books of St. Linus.
The Treatise of Abdias.
The Acts of the Passion of St. Andrew.

Books Full of Errors, almost all of them Lost.

The Gospel of St. Peter.
The Gospel of St. Thomas.
The Gospel of St. Matthias
The Gospel of St. Bartholomew.
The Gospel of St. Philip.
The Gospel of Judas Iscariot.
The Gospel of Thaddæus.
The Gospel of Barnabas.
The Gospel of Truth by the Valentinians.
The Gospel of Perfection by the Gnostics.
The Gospel of Eve by the Gnostics.
A Book concerning the Infancy of Jesus Christ.
A Treatise concerning the Birth of our Saviour, the Virgin Mary, and her Midwife.
A Treatise concerning the Virgin's Lying-in, and the questions she asked.
A Treatise of the Nativity of the Virgin Mary, cited by St. Jerome.
The Apocryphal Treatise of the Life of the Virgin, cited by St. Gregory Nysene.
Another Apocryphal Book on the Virgin, cited by Faustus.
The Writings of Jesus Christ about Miracles.
The Acts of St. Peter.
The Acts of St. Paul.
The Acts of St. Andrew.
The Acts of St. John.
The Acts of the Apostles.
The Acts of St. Philip.
The Acts of St. Thomas.
The Doctrine, Preaching, and Itinerary of St. Peter.
The Rapture of St. Paul.
The Memoirs of the Apostles.
The Lots of the Apostles.
The Itinerary of the Apostles.
The Treatise concerning the Priesthood of Jesus Christ.
The Apostolical Tract.
The Treatise of the Death and Assumption of the Virgin.
The Apocalypses or Revelations of St. Peter.
The Revelations of St. Paul.
The Revelations of St. Thomas.
The Revelations of St. Stephen.
The Revelations of the Great Apostle.
The Revelations of Abraham.
The Revelations of Seth.
The Revelations of Noriah.

In addition to those already named there were a number of lost books referred to and quoted from by the authors of the various canonical books, such as :—

The Book of the Wars of the Lord (Numbers xxi. 14).
The Book of the Covenant (Exodus xxiv. 7).
The Book of Jasher, or the Upright (Joshua x. 13, 2 Samuel i. 18).
The Book of the Acts of Solomon (1 Kings xi. 41).
The Book of the Chronicles of the Kings of Israel (1 Kings xiv. 19, and eighteen other places in the Books of Kings ; also 2 Chron. xx. 34 and xxxiii. 18).
The Chronicles of the Kings of Judah (1 Kings xiv. 29, and twelve other places in the Books of Kings).
The Book of Samuel the Seer (1 Chronicles xxix. 29).
The Book of Nathan the Prophet (1 Chronicles xxix. 29).
The Book of Gad the Seer (1 Chronicles xxix. 29).
The Chronicles of King David (1 Chronicles xxvii. 24).
The Book of Nathan the Prophet (2 Chronicles ix. 29).

The Prophecy of Ahijah the Shilomite (2 Chronicles ix. 29).
The Visions of Iddo the Seer against Jeroboam the son of Nebat (2 Chron. ix. 29).
The Book of Shemaiah the Prophet (2 Chronicles xii. 15).
The Book of Iddo the Seer concerning Genealogies (2 Chronicles xii. 15).
The Story of the Prophet Iddo (2 Chronicles xiii. 22).
The Book of the Kings of Judah and Israel (2 Chronicles xvi. 11, and six other places in the same Book).
The Book of Jehu (2 Chronicles xx. 34).
The Memoirs of Hircanus (mentioned in 1 Maccabees).
The Books of Jason (mentioned in 2 Maccabees ii.).
The Acts of Uriah (mentioned in 2 Chronicles xxvi. 22).
Three thousand Proverbs of Solomon (mentioned in 1 Kings iv. 32).
A thousand and five Songs (mentioned in ibid).
Several other volumes by the same author (mentioned in ibid).
The Prophecy of Jeremiah, torn in pieces by Jehoiakim (cited in Jeremiah xxxvi.).
Another Prophecy of his upon the city of Babylon (mentioned in Jeremiah li.).
Memoirs or descriptions of the same author (mentioned in 1 Maccabees ii.).
The Prophecy of Jonah (mentioned in the Book of Jonah).

We can readily imagine what trouble our pious ancestors must have experienced in deciding which of these writings really emanated from the ghost of God and which were fraudulent productions, for the style in which most of them were written rendered it almost impossible to decipher them : written on rough skins, in ink which had become obliterated by age, many of them had fallen into the hands of monks and other rogues, who appeared to have suffered severely from *cacoëthes scribendi*, and who recorded events connected with their own persons or surroundings over the original writing, like a lady "crosses" her letters, so that the whole manuscript became a complete jumble. In most cases the original or ground language was Hebrew or Greek in ill-formed and continuous capitals, undivided into words, and without accents, points, or breathings, while the "crossing" was in Arabic, Latin, or some other different dialect, badly written and accompanied with ink spots and senseless dashes. Out of this heterogeneous mass of scribblings the pious divines of the Reformation period compiled our authorised version of the Bible, the translation into English being made, in the case of the Old Testament, from the modern Hebrew text, and in that of the New Testament from Beza's fifth edition of the Greek text.

There are three different versions of the complete Old Testament—viz., the Hebrew, the Greek Septuagint, and the Latin Vulgate, and two Samaritan versions of the Pentateuch, one written in Aramæn and the other in Arabic. The MSS. of the Hebrew version are all written in modern or Masoretic Hebrew, which dates from about the year 1,000 A.D. The original language of the Hebrews, which was derived from the Egyptians and afterwards modified by contact with the Chaldeans, was very different from that we are accustomed to read to-day in Hebrew Bibles : instead of each word being separated from its neighbour, and vowel points being subscribed to assist in the reading, sentences,

paragraphs, and even pages were written as though the whole formed but one long word; and, considering that the Hebrew alphabet consists of consonants only, the absence of the vowel points and final letters afterwards introduced rendered the meaning of the writer most obscure. For instance, the first verse of Genesis would have been written as follows in ancient Hebrew, but in letters more nearly approaching the cuneiform type, בראשיתבראאלהימאתהשמימואתהארע. The equivalent letters in English are (reading from right to left, as in Hebrew) TS.R.A.H.T.A.V.M.Y.M.SH.H.T.A.M.Y.H.L.A.A.R.B.T.Y.SH.A.R.B and the translators tell us that they signify, "In the beginning God created the heavens and the earth." Now, as they stand, it is utterly impossible to pronounce the words; and, even supposing that vowels were added, this could be done in such a variety of ways that hundreds of different pronunciations might result; so also might the sense be varied by many different renderings. Suppose we wrote down the authorised translation, using consonants only, and leaving entirely out the vowels, the result would be as follows (reading from left to right, as in English), NTHBGNNGGDCRTDTHHVNSNDTHRTH, which would be entirely unpronounceable unless we added vowels; and, by adding vowels indiscriminately, a variety of renderings would result. The absurdity of a written language composed only of consonants is thus made very apparent. This difficulty opposed itself to the Jewish priests, and was obviated by the introduction of vowel points, the manufacture of five final letters, and the division of sentences into words according to the arbitrary rendering of the introducers of the vowel points; so that now we possess a Hebrew language which may be, and probably is, as unlike the ancient Hebrew dialect as chalk is unlike cheese.

By slightly altering the vowel points of a sentence or a word, the whole sense may be entirely destroyed; and that this has been frequently enough done requires no proof here, for it has been abundantly shown elsewhere. Certain priests have attempted to prove that the vowel points and final letters were in use in Ezra's time; but it is now generally admitted by scholars that they were inventions of the middle ages. Hear what the learned Christian Dupin, Doctor of the Sorbonne, says:—"The Hebrew alphabet is composed of twenty-two letters, like those of the Samaritans, Chaldeans, and Syrians. But, of these letters, *none are vowels*, and, in consequence, the pronunciation cannot be determined. The Hebrews have invented *points*, which, being put under the letters, answer the purpose of vowels. Those vowel-points serve not only to fix the pronunciation, *but also the signification of a word, because, many times, the word being differently pointed and pronounced alters the meaning entirely.* This is the consideration which has

made the question as to the antiquity of the points of so much importance, and has, consequently, had such elaborate treatment. Some have pretended that these points are as ancient as the Hebrew tongue, and that Abraham made use of them. Others make Moses the author of them. But the most common opinion among the Jews is that, Moses *having learnt of God the true pronunciation of Hebrew words*, this science was preserved in the synagogue by oral tradition till the time of Ezra, who invented the points and accents to fix the meaning. Elias Levita, a German Jew of the last generation, and deeply learned in Hebrew grammar, has rejected this opinion, and contended that the invention of points took place in much more recent times. He ascribes the invention to the Jews of Tiberias and to the year 500 A.D., and alleges that the invention was not perfected till about the year 1040 A.D., by two famous Maserites, Ben-Ascher and Ben-Naphtali."

Hear, also, what the learned and pious Dr. Prideaux says:—"The sacred books made use of among the Jews in their synagogues have ever been, and still are, *without the vowel-points*, which could not have happened had they been placed there by Ezra, and had, consequently, been of the same authority with the letters; for, had they been so, they would certainly have been preserved in the synagogues with the same care as the rest of the text." He then goes on to say that no mention is made of the points in either the Mishna or Gemara, and continues: "Neither do we find the least hint of them in Philo-Judæus or Josephus, who are the oldest writers of the Jews, or in any of the ancient Christian writers for *several hundred years after Christ.* And, although among them Origen and Jerome were well skilled in the Hebrew language, yet in none of their writings do they speak the least of them. Origen flourished in the third, and Jerome in the fifth, century; and the latter, having lived a long while in Judæa, and there more especially applied himself to the study of the Hebrew learning, and much conversed with the Jewish rabbis for his improvement herein, it is not likely that he could have missed making some mention of them through all his voluminous works, if they had been either in being among the Jews in his time, or in any credit or authority with them, and that especially since, in his commentaries, there were so many necessary occasions for taking notice of them." The Doctor then declares that after the Babylonish Captivity "the Hebrew language ceased to be the mother tongue of the Jews," Aramæn, as we know, being the dialect of Judæa at the time of Herod.

We may, then, safely fix the date of our earliest Hebrew MS. at a later period than 1000 A.D., for there does not exist one single ante-Masoretic or unpointed Hebrew MS. of the Bible. The Greek Septua-

gint was also written in Greek capitals, without accents and breathings and without divisions between the words, and continued thus until the eighth century, when accents and breathings came into use, which were followed, in the tenth century, by small letters, as we have them now in our Greek Bibles. The very same may be said about the New Testament MSS., all of which are written in continuous Greek capitals.

The oldest MS. of the New Testament is the Codex Sinaiticus, discovered by Tischendorf at the convent of St. Catherine, on Mount Sinai, in 1859, and supposed to belong to the fourth century. The Codex Vaticanus is also supposed to belong to the fourth century, and was first published at Rome by Vercellone, in 1858. The Codex Alexandrinus, containing both Old and New Testaments, is supposed to belong to the fifth century, and was first published by Woide, in 1786, and afterwards by Cowper, in 1860. Of the Old Testament it contains, besides the canonical and most apocryphal books found in our editions, the third and fourth books of the Maccabees, Epistle of Athanasius to Marcellinus (prefixed to the Psalms), and fourteen hymns, the eleventh in honour of the Virgin. Ecclesiasticus, the Song of the Three Children, Susannah, and Bell and the Dragon do not appear. Of the New Testament there is, in addition to the received books, the First Epistle of Clement to the Corinthians and part of the Second. The Codex Ephraemi is supposed to belong to the fifth century, and was published by Tischendorf in 1843. The Codex Bezæ is a Græco-Latin MS., said to belong to the sixth century, and first published by Kipling, in 1793, and afterwards by Scrivener, in 1864. All these MSS. are written in continuous capitals, so badly formed, and so jumbled together, as to be almost illegible.

According to the showing of those most interested in proving the antiquity of sacred writings, the very earliest MS. cannot lay claim to an earlier date than the fourth century; and, if the authors to whom the Church has attributed the various writings in the Bible wrote the said records, it is clear that the latest originals must date from the first century. But the originals do not anywhere exist, and consequently it is utterly impossible for anybody to know who wrote any one of the books of the Bible, which is, therefore, a compilation of anonymous writings, and, as such, is of no authority whatever. So far from being a divinely-inspired record, it is, as we have seen, a product of the cunning and ingenuity of knaves and fanatics, who deserve credit for only one thing, and that is that they managed to make any sense whatever out of the wretched scribble and scrawl from which they derived their information.

THE

"ANNALS" OF TACITUS.

One of the darkest epochs in the history of Christianity is that period which commenced with the annihilation of the Saracen power in Europe and the establishment of the Inquisition by Pope Innocent IV. in 1243, and continued until about the end of the fifteenth century. The ghastly horrors perpetrated by the Christian Church at this time against unoffending people are too well known to need any reproduction here, and may be found fully detailed in Rule's "History of the Inquisition," Draper's "Conflict," and other similar works. My purpose just now is not to follow in detail these wicked and cruel abominations connected with the Christian superstition, but to study carefully the various circumstances surrounding the sudden appearance, in the early part of the fifteenth century, of so many MSS. purporting to have been written by the ancients. Among these manuscripts were the so-called "Annals of Tacitus," which have since become so celebrated on account of the reference made by the author in his fifteenth book to the persecution of the early Christians by Nero. It has long been suspected by learned scholars that these "Annals," and in particular the passage relating to Nero's persecution of Christians, were never written by Tacitus; but, owing to the danger usually incurred in giving expression to opinions so detrimental to the interests of the Church, no one ventured until quite lately publicly to state his doubts as to the genuineness of these celebrated writings. It is now, however, pretty generally admitted among such scholars as do not make their honour subservient to their interests that the author of the "History" and the author of the "Annals" were not the same person, and that the latter, moreover, were

not written until many centuries after the death of Tacitus.

To find out who was the real author of these "Annals," and how they became associated with the name of Tacitus, it will be necessary to glance at the condition of the Christian Church during the period referred to above; and in doing so none but authors of the highest repute will be consulted.

For some time after the establishment of the Inquisition in 1243 the Church had been able to suppress, to a very large extent, the growing tendency of the age towards the acquirement of knowledge: by the rack, the stake, and the gibbet, by torture, by fire, and by the knife, she had relentlessly pursued her horrid and diabolical career, hoping by these means to preserve the faith and silence her enemies. To a large extent it is admitted she was successful; but in remote places the spirit of inquiry lived and grew in spite of her: Abelard, the first Freethinker, had well sown his seeds in France; Arnold of Brescia had left to his brethren in Italy a scheme of reform which was destined to take practical shape in the autumn of 1870; and Wicliffe had preached from his chair at Oxford doctrines which could not fail ere long to have their effect upon the intellect of England. This bold Yorkshireman did not scruple to publicly declare that the mendicant friars who were commissioned by the Pope to travel over England and grant absolution and indulgences to the people were a pack of thieves and sensualists, that the clergy were indulging in open wickedness, that the indulgences of the Pope were a manifest blasphemy, and that the priesthood had no right to deprive the people of the right to search the Bible. He even went so far as to speak of the Pope as "Antichrist, the proud worldly priest of Rome, and the most cursed of clippers and purse-kervers." From the pulpit of his little church at Lutterworth he openly preached against the authority of the Pope in England, and declared that Christ had given no temporal lordship to the popes and no supremacy over kings. The Pope and the Sacred College very naturally resented this behaviour, and ordered copies of Wicliffe's works to be sent forthwith to Rome for

inspection, the result being that three bulls were drafted on May 22nd, 1377, and despatched to England, one being addressed to Simon Sudbury, Archbishop of Canterbury, and William Courtenay, Bishop of London, another being addressed to the King, and the third to the University of Oxford. These bulls expressed the surprise of his Holiness that such a fearful heresy had not been at once suppressed, and commanded that immediate steps should be taken for silencing the author of it. He was to be apprehended and shut up in prison until the further orders of the Pope arrived; and all proofs and evidence of his heresy were to be sent by special messenger to Rome without delay. These bulls, however, arrived too late to be of much use. Already Wicliffe had been brought to trial before the Bishop of London and his court at St. Paul's, with a result not at all to the liking of his Holiness or any of his pious followers, as he very soon discovered.

On February 19th, 1377, Courtenay sat in Our Lady's Chapel in St. Paul's, surrounded by Church dignitaries, to hear the accusation against the reformer, a large and excited crowd, favourably disposed towards Wicliffe, howling outside the doors. Suddenly a disturbance took place inside the chapel, caused by Lord Percy and John of Gaunt forcing their way towards the reformer; the Bishop and his court were scandalised, and immediately called upon the intruders to withdraw; but, instead of doing so, Percy quietly turned to Wicliffe and politely requested him to be seated, whereupon Courtenay became furious and yelled out: "He must and shall stand; it is unreasonable that one on his trial before his ordinary should sit." High words followed; the mob outside was in a state of fury, and the bishops and clergy were terrified. The end soon came, for John of Gaunt, Duke of Lancaster, stepping in front of the Bishop, shouted: "As for you, who are growing so arrogant and proud, I will bring down the pride, not of you alone, but that of all the prelacy in England," and then declared that in a few moments he would drag him out of the court by the hair of his head. This brought matters to a climax; the mob burst into the chapel, the Bishop and clergy fled, and the reformer was set free.

The greatest consternation prevailed among the clergy upon the news of this outrage being carried through the country, and for several weeks secret deliberations were carried on for the purpose of devising some good plan for restoring the visibly decreasing prestige of the clerical party.

At last the three bulls arrived from Rome, but were, as we have seen, too late in the field; for not only had the trial of Wicliffe turned out a failure, but the King had in the meantime died, and the Oxford doctors had almost all sided with the reformer. Still, the Church determined to punish Wicliffe, who was summoned to appear before Sudbury, Archbishop of Canterbury, in Lambeth Chapel, to answer charges of heresy and insubordination; but this trial proved as unfortunate for the clergy as the former one, for another angry mob besieged the chapel and demanded the release of the reformer, in addition to which Sir Lewis Clifford arrived in haste from the Queen to forbid the bishops passing any sentence upon Wicliffe. This was indeed a surprise for their reverences, who precipitately left the chapel and reached their homes in the best way they could. All this had a great effect upon the minds of the people both in England and on the Continent; for the Pope and his satellites had not only been attacked, but, what was more amazing, they had suffered an unparalleled defeat; and the probability was that the discontented of France and Italy would follow the example of the English reformer and attempt to put into practice the theories of Arnold and Abelard. The times certainly looked black for the Church; but an event happened shortly afterwards which added still more to the general dismay of the clericals, and was near being the end of the Papacy.

Pope Gregory XI. died on March 27th, 1378, at the Vatican, where he had arrived shortly before from his beautiful residence at Avignon; and the Italian clergy, fearing that the next pope would also take up his residence in France, determined to exert every effort to place upon the vacant chair of St. Peter an Italian who would be likely to remain at the Vatican. At this time the sacred college consisted of twenty-two cardinals,

twelve of whom were French, so that it would have been an easy matter for the French majority to elect a French pope ; but the clamour, not only of the clergy, but of the laity of Rome, was so great that the majority did not avail themselves of their opportunity, and allowed the Archbishop of Bari, a Neapolitan, to be nominated and unanimously elected to the vacant see, under the title of Urban VI. Not many weeks passed away before the French majority began to repent their haste, and ended by publicly excommunicating Pope Urban VI., calling him apostate and antichrist, and electing in his stead, on September 21st, Robert of Geneva, under the title of Clement VII. The Italian bishops and clergy stood by the Pope of their choice, who resided at the Vatican, while the French bishops and clergy bowed allegiance only to their Pope, who took up his residence at the old papal palace at Avignon ; and thus it happened that for the first time in the history of the Church there were two popes at the same time, each pouring forth his anathemas at the other, and each declaring himself to be the divinely-ordained vicar of Christ on earth. Owing to this schism, Wicliffe was allowed to preach his heresy without let or hindrance, for the whole of Europe was in a constant ferment, and the bishops could ill bestow time upon such an insignificant person when two such lofty individuals were attracting the attention of both clergy and laity.

For forty years these rival popes and their successors carried on a perpetual warfare, both with the sword and the pen, Pope Urban being succeeded in turn by Pope Boniface IX., Pope Innocent VII., and Pope Gregory XII., and Pope Clement by Pope Benedict XIII. During this time there were not wanting men who were bold enough to turn to account this papal schism in the interest of reform. Wicliffe was working silently but steadily in England, and actually had the audacity to render the Bible in the vulgar tongue, so that the people could read it in the churches, the thing of all others that the popes and the cardinals dreaded, for they well knew that, as soon as the Bible was read and understood, the authority of the Church would gradually wane, and eventually cease to exist at all. In vain did the popes thunder forth their curses upon

Wicliffe's venerable head, for was not the whole of Europe at that very time discussing more or less fiercely the very question as to which of the two holy ones was really Pope? Of what use was it that he of Avignon denounced Wicliffe, when half of Christendom denied his right to the papal chair? He of Rome was in precisely the same position, so that the high-sounding anathemas fell but lightly on the old reformer; but it was far otherwise with the heretical teachings which called forth the papal curses; for they were carried into the most remote corners of Europe, causing quite a sensation among the hitherto loyal servants of the Church. Jerome of Prague, in the year 1400, just sixteen years after Wicliffe's death, carried across the channel a large assortment of Wicliffe's writings, and immediately commenced to carry on the work of the great reformer in Europe, challenging the doctors of Paris and Vienna on his way home. Uniting with John Huss, a Professor of Prague University, he attacked with great violence the Papacy, declaring that the very fact of the head of the Church being split into two was sufficient to destroy for ever the notion of papal infallibility. Things had now arrived at such a pass that the doctors of the Sorbonne in Paris made a desperate attempt to settle the difficulty. For fifteen years past they had been urging the two popes to resign simultaneously, so that one successor to both could be unanimously elected, and the dispute thus settled; but neither party would yield an inch. At last, in 1409, driven to desperation by the effect produced by Wicliffe's writings, and by the bold preaching of Huss and Jerome, the Council of Pisa deposed both popes, and elected a third —viz., Balthazar Corsa, who assumed the title of Pope John XXIII. and took up his residence at Bologna. The two deposed pontiffs, however, refused to recognise the decree of the Council, the consequence being that, instead of there being two popes, there were three. This strengthened the position of Huss and Jerome, who said: "If we must obey, to whom is our obedience to be paid? If all three are infallible, why does not their testimony agree? And if only one of them is the most Holy Father, why is it that we cannot distinguish him from the rest?" The Bolognan Pope declared the

Roman Pope to be a heretic, a demon, and antichrist; the Roman Pope entertained similar views about his holy brother of Bologna; and both stigmatised the Avignon Pope as an impostor and schismatic; while his Holiness of Avignon had as much affection for his two holy brethren as they had for him.

Another Council was held at Constance in 1418, at which all three Holinesses were deposed, excellent precautions being at the same time taken to ensure the proper carrying out of the sentences. Otho Colonna was then elected to the chair of St. Peter, as Martin V., and the schism at last put an end to. But at what a cost had this schism been kept up for forty years! People had begun to seriously question the right of the popes to claim infallibility; many were now in the habit of daily reading the Bible, and some had even dared to search ancient authors for fuller information respecting the establishment of Christianity. Unless these three ulcers were immediately cauterised and effectively effaced, the Church must fall from its high position, as the holy ones at the Vatican well knew. Accordingly, the Inquisition was brought into service of the Pope, to put a stop to the insolence of those who dared to assail the dogma of infallibility, and who had been guilty of the blasphemy of reading the Bible. Huss and Jerome had already been burnt at the stake. In addition to this, large sums of money were offered for freshly-discovered MSS. of the ancients, in order that all the evidence it was possible to collect together might be available in case of emergency. These means were very effectual; for troublesome people, who had inquiring minds or who had learnt to read and write, were quickly despatched to a happier land by the agents of the Inquisition, while the money offered for newly-discovered MSS. acted like magic in causing old musty writings to turn up in every direction.

While the Council of Constance was being held for the purpose of electing one pope, and one only, to sit in the chair of St. Peter, Henry Beaufort, Bishop of Winchester, second son of John of Gaunt, Duke of Lancaster, happened to pass through the town, and took advantage of the opportunity thus offered him to attend the sittings, where he made the acquaintance of many, among whom

was Boggio Bracciolini, one of the Papal Secretaries. A friendship soon sprang up between the two, which resulted in Bracciolini returning to England with Bishop —afterwards Cardinal—Beaufort, in the autumn of 1418. After a year or two spent with Beaufort, the late Secretary became dissatisfied with his lot, complaining bitterly in his letters to his friend, Niccolo Niccoli, of the many unfulfilled promises of the Cardinal. At last he was offered, and duly accepted, a small living of 120 florins a year, which he soon afterwards exchanged for one worth £40 a year, and having fewer duties attached to it, which gave him more leisure time for study, and, consequently, made him considerably happier, for his passion for studying ancient authors was as intense as his knowledge of the classic languages was profound.

In a very short time, however, he became again dissatisfied with his lot, and begged the Cardinal to supply him with an honorary canonry, so that he might visit Italy and prosecute his studies, at the same time that he drew a snug little salary from England. He was not successful, for the Cardinal probably had many such applications, and found more suitable objects upon which to bestow his favours.

Just at this time the rage for finding old MSS. increased enormously, owing to the large sums of money given by the Vatican to the lucky finders, who, as a rule, were simply villains of the monk type and the most impudent forgers. Bracciolini, whose passion for money was even greater than his passion for knowledge, bitterly bewailed his fate, and longed for an opportunity to turn his wits to account, and thus secure some of the fine prizes which were being so lavishly bestowed by his Holiness upon indigent Italian and Hungarian monks. While he was despairing of any such good fortune turning up he unexpectedly received from Piero Lamberteschi of Florence, agent to Cosmo de Medici, an offer which greatly gratified him, and which he could plainly see emanated in the first instance from his old friend Niccoli. The nature of this offer was, for obvious reasons, kept strictly secret ; but, from a perusal of some of the letters which passed between Bracciolini and Niccoli, no doubt now exists that it was really a proposal

that Bracciolini should enter into retirement and forge an introduction to the "History" of Tacitus, for which work he would be paid 500 gold sequins, equivalent to upwards of £10,000. Niccoli strongly urged his friend to accept the offer, and Bracciolini, in reply, "thinks he will follow his advice;" but the venture was such a daring one that 500 sequins appeared to him insufficient; so he wrote again to Niccoli about this "suggestion" and "offer" made by Lamberteschi, who, he states, "will endeavour to procure for me in three years 500 gold sequins. If he will make it 600, I will at once close with his proposal. He holds forth sanguine hopes about several future profitable contingencies, which, I am inclined to believe, may probably be realised; yet it is more prudent to covenant for something certain than to depend on hope alone.....I like the occupation to which he has invited me, and hope I shall be able to produce something *worth reading;* but for this purpose, as I tell him in my letters, I require the retirement and leisure that are necessary for literary work." An arrangement was eventually arrived at, and it was definitely settled that Bracciolini should leave England and go to Hungary, in which country it was popularly believed were to be found lost literary treasures. Still, Bracciolini had his doubts about the due payment of the money, and, as he was about to give up a living in England, he was anxious to have some security for the money promised by Lamberteschi, for we find him writing to Niccoli as follows: "You know well how I prefer liberty and literary leisure to the other things which the vast majority hold in the highest estimation and make the objects of their ambition.....If I were to see that I should get that which our friend Piero expects, I would go not only to the end of Europe, but as far as the wilds of Tartary, especially as I should have the opportunity of paying attention to Greek literature, which it is my desire to devour with avidity, were it but to avoid those wretched translations, which so torment me that there is more pain in reading than pleasure in acquiring knowledge." He then wrote: "If I undertake a journey to Hungary, it will be unknown to everybody but a few, and down the throats of these I shall cram all sorts of

speeches, since I will pretend I have come from here [England]."

Apparently matters were soon satisfactorily arranged; for, from this time, Bracciolini commenced to prepare for his forgery. He made good use of the library of Cardinal Beaufort, and searched everywhere for old writers from whom he could gather information respecting the old Roman empire; and, finally, made arrangements for quitting England. In a letter to Niccoli, dated London, July 17th, 1420, he says that he has 'skimmed over Aristotle during the spring of the year, not for the purpose of studying him then, but reading and seeing what there was in each of his works." He had found that sort of "perusal not wholly unprofitable, as he had learnt something every day, superficially though it might be, from understanding Aristotle in his own language, where he found him in the words of translators either incomprehensible or nonsensical." It was arranged between the three friends that Bracciolini should repair at once to Italy, where consultations could be held frequently, "to deliberate fully what was best to be done;" so, after vainly attempting to dispose of his living, Bracciolini finally departed for France, *en route* for Italy. Before doing so, however, he wrote to Niccoli, expressing his fear that the forgery he had undertaken was too great a toil for him, but declaring his intention to proceed at all hazards. He says: "I want you to have no distrust; give me the leisure and the time for *writing that history*, and I will do something you will approve. My heart is in the work, though I question my powers.....I have not for four years devoted any attention to literature, nor read a single book that can be considered well written—as you may judge from these letters of mine, which are not what they used to be; but I shall soon get back into my old manner. When I reflect on the merits of the ancient writers of history, I recoil with fear from the undertaking, though, when I consider what are writers of the present day, I recover some confidence in the hope that, if I strive with all my might, I shall be inferior to few of them." A few days afterwards he wrote his last letter from England to Niccoli on June 25th, 1422, still expressing fear about the ultimate result,

and especially the payment: "If Lamberteschi would only place something certain before us, which we could adopt or approve," he wrote; and "How heartily I hope that Lamberteschi will do what would be agreeable to us both."

Arrived in Rome, Bracciolini was offered and accepted the post of Principal Secretary to the Pope, and, consequently, did not go, as previously arranged, to Hungary, but set himself to work instead, examining the old MSS. in the Vatican Library, for which he had ample time, as his new post was almost a sinecure. He also wrote to his friend Niccoli on May 15th, 1423, asking him to forward to him without the least delay all his notes and extracts from the various books which he had read; after receiving which he commenced in earnest his labour. He had not worked long, however, before he discovered what an arduous task he had undertaken, and again fear overcame him lest he should find himself unequal to the effort; but, pulling himself together again, he determined once more to keep up his courage and persevere to the end, the gold sequins probably acting as a stimulus to him.

Writing to his friend Niccoli on October 8th, 1423, he says that "beginnings of any kind are arduous and difficult;" and continues: "What the ancients did pleasantly, quickly, and easily, is to me troublesome, tedious, and burdensome." In another letter to Niccoli, dated Rome, November 6th, 1423, he begs his friend to make every effort to procure for him some map of Ptolemy's "Geography," and not to forget Suetonius and the other historians, above all Plutarch's "Lives of Illustrious Men."

For upwards of three years after this period Bracciolini shut himself up with his papers, extracts, maps, etc., and worked steadily and laboriously at his task, and, at the end of that time, had completed the first instalment of his forgery. The next part of the process was to find a suitable place in which the forged MS. could be *discovered;* consequently, Bracciolini and Niccoli put their heads together in consultation, finally settling upon Hirschfeldt, a small Saxon town on the borders of Bohemia, which was celebrated for an old abbey of the

Benedictine monks. Bracciolini had accidentally met with one of the monks from this place in Rome, and had managed to place this man under an obligation to him; so, finding that he was needy, ignorant, and stupid, he determined to make use of him for producing his MS. to the public. Speaking of this monk in one of his letters to Niccoli, he says: "The good fellow, who has not our attainments, thought that we were equally ignorant of what he found he did not know himself." To this ignorant fellow he gave a long list of books that he wished him to hunt up in the Abbey library, including a copy of Tacitus, telling him to send a full description of each as soon as found. The object of this was to find out whether the Abbey possessed a copy of Tacitus in the oldest writing possible, which could be used as a guide to the transcriber of the forgery; and the reason of giving such a long list was to throw the monk off the scent.

With all their precautions, however, their scheme was all but discovered in the summer of 1427, for we find Bracciolini, on September 25th of that year, writing to Niccoli that, "when Tacitus came, he would keep it a secret; that he knew all the tittle-tattle that was going on—whence it came, through whom, and how it was got up; but that he need have no fear, for that not a syllable should escape him.....I hear nothing of the Tacitus that is in Germany. I am expecting an answer from the monk." From this it would appear that the monk had not yet supplied the information about the books; but, in the following October, Niccoli had forwarded to Bracciolini an old copy of Tacitus that he had become possessed of. Bracciolini, however, returned it at once, saying that it was so badly damaged as to be illegible to an ordinary transcriber, and continuing: "Take care, therefore, that I have another, if it can be done; but you can do it, if you will strive your utmost.....You have sent me the book without the parchment. I know not the state of mind you were in when you did this, except that you were as mad as a March hare. For what book can be transcribed if there be not the parchment? Have a care to it, then, and also to a second manuscript; but, above all, keep in mind the vellum."

After a while the parchment arrived, together with an old copy of Tacitus that could be easily read by a transcriber; and then all was silence again for about a year. During this period the old monk was busily engaged transcribing the forged writings into very ancient characters, using the old copy of Tacitus supplied by Niccoli as an example of style, the forgery being intended as an introduction to the "History."

On September 11th, 1428, Bracciolini was evidently becoming impatient with the work, for he wrote to Niccoli as follows: "Not a word of Cornelius Tacitus from Germany; nor have I heard thence any further news of his work." Then, again, he writes February 26th, 1429: "The Hirschfeldt monk has come without the book, and I gave him a sound rating for it. He has given me his assurance that he will be back again soon, for he is carrying on a suit about his abbey in the law courts, and will bring the book. He made heavy demands upon me; but I told him I would do nothing for him until I have the book; I am, therefore, in hopes that I shall have it, as he is in need of my good offices." The book at length arrived, and Bracciolini wrote to Niccoli that, so far as he was himself concerned, everything was "now complete with respect to the *Little Work*, concerning which he would, on some future opportunity, write to him; and, at the same time, send it to him to read, in order to get his opinion of it."

So the forgery was complete, and there can be no doubt that Bracciolini from this date was a rich man, living in his own villa at Valdarno in Tuscany. The forged writings were handed over to Cosmo de Medici in return for 500 gold sequins, according to arrangement, and remained in the Library at Florence ever after. It was not, however, published before 1468, when Johannes de Spire produced what are now known as the last six books of the "Annals" of Tacitus, which he declared had been copied from an (imaginary) original in St. Mark's, Venice, but which we now know were really copied from the forgery of Bracciolini, in possession of the Medicis at Florence.

What are now known as the first six books of the "Annals" did not make their appearance until 1514,

and most probably had also been forged by Bracciolini immediately after he had finished the last six books. The delight of the clergy at the sudden and unexpected discovery of these hitherto altogether unknown writings knew no bounds; for they now possessed the most precious heathen testimony to the sufferings of the early Christians on account of their religion, which would form a valuable addition to the evidence in course of collection by pious monks intended to show forth clearly and indisputably the divine origin of Christianity. The wily Pope knew well enough the enormous value of such a record as this; for it was quite evident that a vein of scepticism was permeating every class of society, in spite of the vigilance of the Inquisitioners.

The reformers who succeeded Wicliffe, Jerome, and Huss had been waxing bolder day by day, and had even repulsed a large army sent against them by his Holiness and led by Cardinal Cesarini and a host of German princes, since which they had boldly and openly preached against the papal supremacy, and were in many districts publicly distributing copies of the writings of Aristotle and Averroës. The Church and the Papacy were thus in real and imminent danger, for hitherto the people had believed whatever the priests had told them, whereas now they appeared determined to investigate the whole matter themselves and to dispense with the services of the priestly mediator. At such a time the discovery of the "Annals" came as a windfall to the Church; every one apparently accepting them as having been originally written by Tacitus; and every author, from this time forward, quoted them repeatedly. The strangest thing about the affair is that no one even thought of questioning the genuineness of the writings, especially when it must have been well known that not one historian or writer, from the time of Tacitus, who lived in the first century, down to the end of the fifteenth century, when the "Annals" (so-called for the first time by Beatus Rhenanus in 1533) were discovered, had ever once quoted or even referred to them; not even Christian writers had as much as once noticed them, which they could not have failed to do had such valuable evidence of the sufferings of their brethren really existed. Besides

the "Annals" other MSS. were produced by pious monks and passed off as ancient writings, until at length the Vatican and other papal libraries were literally swarming with them; but all these writings paled into insignificance before such a record as the "Annals," which was destined henceforth to be the chief evidence in support of Christianity. Together with the passages in the writings of Josephus, which were forged beyond doubt by Eusebius, Bishop of Cæsarea, and the doubtful letter of the younger Pliny to the Emperor Trajan, which time most assuredly will prove to be as great a forgery as the other two, the Church had now heathen testimony in abundance to prove that religion was divinely instituted and that many suffered death in defence of it. Neither Averroism nor Arianism could shake this testimony, which would be a powerful prop to the religion for centuries to come. It remained for Dr. Lardner and others, in the commencement of last century, to expose the forgery in Josephus; to the present century has been reserved the honour of unveiling the real authorship of the forged "Annals" of Tacitus; and to future searchers after truth is left the duty of discovering the real perpetrator of the forged letter which has hitherto been known as from Pliny to Trajan.

If any one should still doubt that Bracciolini forged the "Annals," let me recommend him to carefully read a work entitled "Tacitus and Bracciolini," and published by Messrs. Diprose & Bateman, of Lincoln's Inn Fields, London, in which will be found the most convincing proofs that Bracciolini, and no other than he, was the real author of the work. In that able indictment, from which I have drawn extensively for this essay, the writings and peculiarities of both Tacitus and Bracciolini have been most carefully detailed, with the result that no one can help arriving at the conclusion that one person could not have written both the "History" and the "Annals;" that Tacitus could not possibly have written the "Annals," owing to chronological difficulties; and that suspicion points so forcibly to Bracciolini as the author that it almost amounts to positive proof.

What I have endeavoured to show is (1) that, owing to the teachings of Abelard, Arnold, Wicliffe, Jerome,

Huss, and other fifteenth-century reformers, the authority of the Church and the very existence of Christianity were seriously menaced; (2) that, on account of the failure of the Inquisition to stem the current of scepticism, large sums of money were offered for the discovery of ancient writings which would bear testimony to the divine authority of the Church and the divine establishment of Christianity; (3) that, in consequence of this bribe, shoals of writings were forged by needy monks and scholars, and attributed to ancient authors; and (4) that among these forgeries were the "Annals" of Tacitus, which were composed by Bracciolini and re-written by the Hirschfeldt monk in a style as nearly as possible like a very old copy of the "History" of Tacitus, which was supplied to him as a guide.

CREATION AND FALL.

The one great differential mark between man and the brutes is his higher development of brain power, by which he is enabled to discriminate between right and wrong, or good and evil, and thus to improve his bodily and social condition. The individual who obstinately refuses to avail himself of the great mental power within him not only deprives himself of the greatest pleasure in life, but also allows himself to sink to the level of the brutes from which he evolved, exhibiting at the same time a gross want of gratitude to the being who endowed him with so lofty an attribute. On the other hand, he who cultivates his mental faculties, and uses them for his own improvement and advancement, and also that of his fellows, fulfils the highest mission of man, and continually shows his deep gratitude to his mysterious benefactor.

To think is the grandest faculty of man. To think logically and well ought to be his noblest aspiration. To prevent, by any means whatever, the individual from exercising his right to think, and from giving expression to his thoughts, is a direct outrage upon the great author of us all, upon the individual himself, and also upon the whole human race. The greatest thinker of modern times, John Stuart Mill, says, "The peculiar evil of silencing the expression of an opinion is that it is robbing the human race, posterity as well as the existing generation; those who dissent from the opinion still more than those who hold it. If the opinion is right they are deprived of the opportunity of exchanging error for truth; if wrong, they lose what is

almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error. No one can be a great thinker who does not recognise that, as a thinker, it is his first duty to to follow his intellect to whatever conclusions it may lead. Truth gains more even by the errors of one who with due study and preparation thinks for himself, than by the true opinions of those who only hold them because they do not suffer themselves to think.....complete liberty of contradicting and disproving our opinion is the very condition which justifies us in assuming its truth for purposes of action; and on no other terms can a being with human faculties have any rational assurance of being right."

We claim the right to think upon any and every subject, and also to express our thoughts before the world, in spite of the menace held out to us by those whose interests conflict with any honest expression of opinion. There is no tribunal but that of reason to which we possibly can submit any theory or proposition. To talk of faith as opposed to reason is to speak without seriously thinking. Such faith is but a weird phantom that haunts the irresolute and credulous unthinker, but which really has no existence at all. A man may say that he believes something entirely opposed to reason, but he deceives himself, for it is quite impossible to believe what does not appear to the mind to be in accordance with reason. Such a man accepts, but does not believe. We have faith in the existence of the island of Otaheite, although we have never been there ourselves. Geographers tell us that such an island exists on the other side of the world; and we have full faith in such an existence, because it is in accordance with reason. But if we were told that the king of Otaheite had never been born, but had, like Topsy, 'grow'd,' or that he and his subjects, instead of talking, crowed like cocks, or brayed like donkeys, we should not believe it, because it would be contrary to reason. Sensible and thoughtful people will, therefore, not accept anything as truth that does not accord with reason: and I ask you to night to follow me in my endeavour to submit the two important dogmas of my lecture to the test of reason, in the full belief that you are as anxious as myself to arrive at a reasonable and true conclusion regarding them.

The doctrines of the creation and fall are, as it were, the foundations upon which the huge superstructure of Christianity has been founded

Take away these fundamental doctrines, and the whole fabric totters to the ground; for without a fall there can be no possible need for a redemption, and the etceteras of the religion, such as the miraculous conception and ascension, baptism, and the eucharistic feast, vanish into thin air as vain imaginations and things of naught.

It cannot be too clearly and forcibly insisted upon that no fall necessitates no redemption, for the proposition is self-evident, and thus incapable of contradiction. If, therefore, we find the story of the creation and fall, as given to us in the first three chapters of Genesis, to be credible and reasonable, then our duty, upon another occasion, will be to examine the evidence for and against the subsequent theories of the religion, in order to discover whether they also are credible and reasonable. If, on the other hand, we find the story to be incredible and absurd, it will be our duty to reject the whole Christian scheme that has emanated from it. Our business at the present time is with these fundamental doctrines of creation and the fall, and our sole object is the elucidation of the truth, no matter whether it should be palatable or not to our minds. No sensible man can desire to retain that which is not true, for no system that is not founded on truth can be of any permanent service to the human race, but must on the contrary produce most pernicious results.

Having thus clearly explained my premisses, I shall now proceed to the examination of the first three chapters of Genesis, and shall divide my text into the two natural divisions suggested in the authorised version. The first chapter and first three verses of the second chapter contain what is known as the Elohistic narrative, so called on account of the deity being throughout designated Elohim—אלהים, the plural of Eloh (אלוה), or Elyah (אליה), a compound word made up of El (אל), a ram, and Yah (יה), an abbreviation of Yahouh (יהוה), the future tense of the verb Hahouh (הוה), to be. Eloh literally means 'the ram will be,' and is used to signify the ram-sun, the sun-god, or the sun in the zodiacal sign *Aries*, at the vernal equinox; the plural form, Elohim, being used to signify the ram-suns, or the six summer months of the year, in which the ram and the sun are together, from equinox to equinox. El signifies ram, or god, alone, or without the sun, in the winter period, and is always used to designate the evil principle, the wicked god, or the winter period, in contradistinction to Eloh, the ram-sun of

the vernal equinox, and Elohim, the ram-suns of the summer months, the good principle, or the good gods. In this first narrative of the creation Elohim is rendered 'God' in the authorised version, though in other parts of the Bible it is rendered 'gods,' 'men,' or 'angels.' The remainder of the second and the third chapters contain the second, or Jehovistic narrative, so called on account of the deity being designated throughout, Yahouh, or Jehovah (so pronounced by Christians) Elohim (יהוה אלהים), rendered in the authorised version 'the Lord God.' That these two accounts were not written by one person will become clear enough as we proceed in our examination, in which the rendering of the authorised version will be strictly adhered to.

According to the first narrative, god (Elohim) created the heavens and the earth and all they contain in six ordinary days, and rested from his work on the seventh day. It has been asserted by some zealous but not over scrupulous Christians that days of twenty four hours' duration were not meant by the writer, but that the word יום (day) signifies an enormous lapse of time; but it is quite clear to anyone with average intelligence that an ordinary day was meant, or else there would have been no use in saying that the evening and the morning were the first day. Moreover, we are distinctly told in Exodus XX. 10, 11, that we are to keep the seventh day as a holiday, "for in six days the Lord made heaven and earth, the sea and all that is in them, and rested the seventh day." We therefore have here the creation of the world, with day and night, but no sun, in one day, which we must admit at once is an absurdity, for it is beyond all doubt scientifically proved that this world could never have existed for one moment without the sun round which it revolves, and our common sense tells us plainly that without a sun there could never have been days and nights, or evenings and mornings.

On the second day we are told that god created the firmament, and called it heaven, and that this firmament separated the waters above from those below, which clearly proves that the writer had no other conception of the universe than that it was limited above to the height of the clouds, and bounded below by the earth itself. The third day was set apart for the gathering together of the waters into seas and rivers, and for the creation of the vegetable kingdom, which again is contradictory of all known scientific facts, for there was still no sun in

existence. At last, on the fourth day, the sun was created, as also the moon and stars, all being placed in the firmament, between the clouds and the earth, for the sole purpose of acting as lamps and marking time for this world. The writer evidently imagined that the only object of the heavenly orbs is to light up this world, to divide our day from our night, and to limit our seasons, being, apparently, ignorant of the fact that our days and seasons are regulated by the motions of the earth itself, quite irrespective of the movements of the celestial bodies. He was also clearly under the impression that the sun was, after our earth, the largest body in the universe, the moon being next, and the stars the smallest; whereas the sun is five hundred times larger than the earth and all the planets and their moons put together; while the earth is about forty nine times larger in bulk than the moon; and some of the stars are immensely larger than our sun, and all of them, moreover, suns themselves.

It is sufficiently evident from this account that the world had been in existence for three days and three nights before the sun was made, and that vegetation had in the meantime been produced, which is, we know, an absurdity. There are some ingenious individuals who have declared that this is quite possible, for there are, they say, lights that are unconnected with the sun, and that the writer evidently alluded to these faint glimmerings; but I assert confidently that, leaving out of the question the light derived from the stars, so far as we know from science, there is no light known which is not either directly produced from the sun, or a reflection of the sun's light from some other object.

On the fifth day were created fishes, birds, and mammals in the form of whales. Now there has been so far no creation of land animals except birds, and yet the writer declares that whales were made, being clearly quite ignorant of the fact that whales are not true fishes, but mammals, belonging to the sub-kingdom Mammalia, to which belong also horses, cows, apes and men. Whales were not evolved until long after creeping animals, such as lizards, serpents, etc., and took to the water again after having been, in the parent form, long accustomed to dry land, just in the same manner as did the walrus, porpoise, sea-cow, dolphin and seal, all of which are mammals. It was not until the next (sixth) day that creeping animals were created, according to Genesis, and yet we know well enough that they slowly evolved from molluscs,

or soft-bodied animals, at a very early period, ages before such species as whales and cattle existed. On the very same day, according to the narrative, god formed an androgynous, or hermaphrodite man, having two sexes, and being the fac-simile of himself. Many ancient races believed that their god was androgynous, and no doubt the writer of this account held the same opinion, regarding the good principle of the summer months, or Elohim, as a bi-sexual and reproductive deity. If this be not the correct view of the matter, it would be interesting to know which of the two sexes the god of Genesis partakes of.

On the seventh day god rested from his work; but we do not find any record of his having done anything to cause fatigue, except giving utterance to his fiat day by day.

This story is so palpably absurd as to need no argument to prove it so, were it not for the fact that certain crafty persons, seeing the utter impossibility of reconciling it with science and reason, have seen fit to invent new interpretations of the original, in order to give it an appearance of truth. One sect maintains that the days were epochs, and not ordinary days, which, if it were true, would merely augment the difficulty by making the earth to have existed, with vegetation, for ages instead of days, without the sun; but we have already seen that this theory will not hold ground for a moment.

Another more cunning class of religionists have propounded the hypothesis that the whole story is meant to be an epitome of what occurred at the origin of the universe and life, and that ordinary days were really meant, and purposely utilised to epitomise long periods of time, as was customary with ancient writers, who frequently availed themselves of poets' licence in this manner. This theory is *primâ facie* a plausible one, and has, no doubt, satisfied many restless and thoughtless spirits amongst us; but in reality it differs but little, if at all, from the preceding hypothesis, both leaving us in much the same position They declare that the very same order is maintained in the narrative as that adopted by scientists; that both agree that the earth was formed first, and then, in the following order, vegetation, fishes, birds, beasts of the field, and man. We know well enough, however, that the sun is absolutely necessary for the existence of the vegetable kingdom; that birds did not appear before reptiles and worms, but long after them; and that mammals made their appearance, not before creeping

animals, and kangaroos, opossums and others of the marsupial species, but many ages after them.

In direct contradiction of this fable in Genesis, we learn from science that our solar system once existed in a condition of highly attenuated nebulous vapour; and that in the course of millions of years this huge chaotic mass of matter, with its sum of force or energy, subject alike to the laws of gravitation and transformation, gradually condensed, and became moulded into cosmic order, forming in process of time a number of rotating spherical nebular masses, in a state of intense heat, owing to the shock of their recently united atoms. These spheres gradually cooled by radiation, consequently contracting and becoming possessed of a more rapid rotary movement, throwing off from their equatorial regions large rings of vapour, which in their turn also condensed, and, under the influence of the same two laws, formed separate spheres for themselves. Thus gradually came into existence our sun, planets and moons.

In the course of time, as our earth cooled down, large volumes of water were precipitated on the surface, causing an enormous wear and tear of the now solid rock of the earth's crust, which eventually gave rise to depositions of various kinds of earth grits, in layers, one above the other; which strata have been divided by geologists into periods, according to various peculiarities observed in the course of their deposition. In the earliest of these periods, owing to the gradual change that took place in the relative proportions of the atmospheric gases, and to the great decrease in temperature, a peculiar combination of the molecular atoms of the earth's substance took place, which resulted in the formation of an albuminous substance, called protoplasm, possessing the power of absorption, assimilation, and reproduction by fission, or, in other words, developing the property called life. Under the influence of the laws of heredity and selection this primordial germ of life gradually developed into higher and still higher organic forms of existence, from Amœbæ to Gastrœada, or molluscs with mouths; next to Vermes, or worm life; then to Vertebrata, or back-boned animals; through fishes; amphibians, living both in and out of water; reptiles, from which eventually evolved birds; and marsupials; up to mammals, such as whales, quadrupeds, apes and men. The gradual evolution of these species occupied many millions of years before the

date of the creation in Genesis (B.C. 4004), during which period the face of the earth underwent manifold and great changes.

Now, in the name of common sense and reason, does this hypothesis agree with and corroborate, as it is said to do by some divines, the 1st Bible story of creation, in any manner at all? I maintain that the man who replies in the affirmative does an injustice to his reasoning faculties and outrages the common sense of his fellows. The theory of creation is absolutely opposed to that of evolution on every point.

Now let us examine the second narrative, as given in the second and third chapters of Genesis. Here we have a direct contradiction of the story in the first chapter; for we are told that god created the earth, the heavens, vegetation and man, but not woman, all in one day. We are also told that there had been no rain upon the earth, and yet that "there went up a mist from the earth," which we know is impossible. "But," say the orthodox, "everything is possible with god." The reply of the evolutionist is, "Can god, then, make a stick with one end only?" God next planted a garden, in which he placed his newly made man, after giving him instructions to eat of every tree within it, except the tree of the knowledge of good and evil, the fruit of which was not to be touched, and the penalty of disobedience being instant death. Then, in fresh contradiction of the first narrative, beasts of the field and birds were created, after man; after which Adam, the man, named them all; but how he acquired the power of speech necessary for such a feat is not recorded. For absurdity the next part of the narrative exceeds all that has preceded it. God created cattle and birds in abundance, but yet could not manufacture a suitable partner for the man; so he adopted the strange device of taking from Adam's body, while he slept, one of his ribs, with which he made a woman. Now it must strike every thoughtful man and woman that this act was the very acme of stupidity, for surely it would have been far easier to have created the woman at once by another fiat, or to have created a spare rib with which to make the woman. To attribute such conduct to the great author is surely the height of irreverence.

It is quite evident that both these stories were not written by one author, and that both cannot be true, for they totally contradict each other, and are written in quite different styles, the deity himself being differently designated in each. We are told by certain parties that if

we do not believe these stories we shall most certainly be roasted for all eternity; and indeed the New Testament distinctly bears out this fearful fiat. According to this, every man in the whole world who has been unfortunate enough to hear these two accounts read, and who is endowed with sufficient intelligence to discriminate between a pop-gun and an elephant, will inevitably perish; for it is impossible for any sane man to believe two such contradictory statements. It is not within the power of any man to do so. You might just as well demand of a man that he must believe that a brick and a pan-cake are identical articles. He could not do so, no matter how hard he tried.

Compared with these fables, how ennobling, grand and sublime is the theory of evolution. We behold the great and mysterious energy of universe operating in a manner calculated to inspire our minds with wonder, awe and admiration. The truly marvellous development of ourselves from a chaotic nebula of attenuated matter, through all the varied and manifold stages of existence, with their beautiful and useful properties, is indeed an overwhelmingly convincing evidence of the existence of an omniscient and omnipotent, although absolutely inscrutable author; and I doubt much whether anyone ever approached this subject with an honest desire to be guided by reason in his search for truth, who did not experience this profound reverence for the unknown author. Can we believe that these two narratives in Genesis are also calculated to inspire such a sentiment in the minds of those who are fairly well educated and amenable to reason? What kind of a deity, think you, is this god of Genesis? The concluding portion of the 2nd narrative will at once inform us.

This story is well known to all of us, and is a very remarkable one, for we learn from it the startling fact that the serpent, or devil, was the greatest benefactor to the human race, and, moreover, truthful; while god was the greatest enemy the race ever had, and was guilty of falsehood and treachery. God placed this man and woman in the garden, in front of a very strong temptation, pointed out the temptation to them, and threatened them with instant death if they yielded to it. This god is supposed to be omnicient, and therefore knew well enough before he placed them there that the poor creatures would fall on the very first temptation. Can we conceive more glaring injustice and diabolical cruelty than this? Now the serpent knew very well

that they would not die if they ate the fruit, but that, instead, they would become wise; and eventually he persuaded them to eat. Who spoke the truth, god or the devil? Did the man and woman die on the day they ate the fruit? Far from it. That day, were there any truth at all in the narrative, would have been the grandest day ever known to man; for by the eating of that fruit was made known to him the difference between good and evil, that he might be able to seek the one and avoid the other; his benefactor being the serpent, or devil, the circumventor and conqueror of god.

But notice further on how impotent this so-called almighty deity really was. He exclaimed in fear, "Behold, the man is become as one of us [which was precisely what the devil predicted] to know good and evil, and now, lest he put forth his hand and take also of the tree of life and live for ever, therefore the Lord God sent him forth from the garden." Now how easy it would have been for an omnipotent creator to have annihilated his own work, and thus cleared the way for a fresh start. It would be interesting to know who the "we" were that the writer refers to, if not an androgynous deity or a multitude of gods or goddesses.

What was the consequence of this sin of Adam and Eve? Every man and every woman ever born upon this earth is guilty of this sin, and will eternally burn in hell fire, says the Christian church, unless they believe that this circumvented god became a man, lived on this earth, and died the death of a criminal, in order to give satisfaction to himself for the outrage committed on his divine majesty by three of his creatures. The countless myriads of human beings who have inhabited this earth during the six thousand years (according to Bible chronology) that the world has existed, are all and each under this fearful curse, although they had no more to do with Adam's sin than the man in the moon, and had no power to prevent it. These people have been brought into the world, whether they liked it or not, and are subject to this penalty, the enormous majority of them being inevitably doomed to eternal torment; for there have lived many millions of people who never even heard of the Bible, its gods or its scheme of redemption. We may go farther and declare that all are inevitably doomed, for we cannot conceive that anyone can believe such a story as that of the fall No one will venture to assert that infants and idiots

can believe anything, therefore there is no hope for these unfortunates, whatever chances there may be for others.

As the expression of the infantile imagination of primitive man, after emerging from his brute ancestry, and commencing to exercise more fully his reasoning faculties, these fables are easily understood; but as the writings of men who had been inspired by the almighty power to record a true account of the origin of nature and man for the use of others, they must be at once rejected by all reasonable and thoughtful people as gross absurdities. We can easily understand how the mind of primitive man pondered over the strange mixture of good and evil in the world, just as the awakening mind of a child would do to day; how the mystery would be explained by the analogy of the celestial movements; and how, as the result of the infantile reasoning, the good principle became associated with the mental conception of a venerable old gentleman, who planted a garden, and performed the principle part in the drama just described from the third chapter of Genesis.

The whole story bears the strongest marks of being the production of an infantile intellect. The simple manner in which the writer tells us that the man and woman sewed fig leaves together and made aprons for themselves is sufficient evidence of this. We cannot believe that Adam and Eve went through the many processes necessary for the production of the needles and thread, with which to sew their leaves together. Then the conversation between god, as he took his stroll in the garden in the cool of the evening, and Adam and Eve, is just what we should expect from the crude imaginations of our early ancestors; as also is the manner in which the man placed the blame on the woman, and she in her turn upon the serpent. The curse, too, is precisely in the same style; first the serpent, then the woman, afterwards the man, and lasty the earth itself being brought under the divine anathema. No less apparent is the absurdity of the writer stating that Adam called his wife Eve "because she was the mother of all living," when there were then no other human beings in existence; and declaring that god made coats and breeches (see "Breeches Bible") of skins, when as yet death had not entered into the world. Such fables cannot be accepted as true history by the intellect of the nineteenth century.

That we suffer for the sins of our fathers is unfortunately too true; but that we shall eternally frizzle for them I declare, without the least

hesitation, to be a vile falsehood and an insult to our intellects. The vices and diseases of our ancestors are undoubtedly reproduced in ourselves, as are their good deeds and lofty sentiments; and we again transmit these properties to our offspring. We have, in fact, the power of rendering happy or miserable those who follow us, and making the general state of society somewhat better or worse. Our great mental attributes were not surely evolved within us for no purpose, and to lie dormant, but that we should exercise them and use them for the moral and social improvement of ourselves and our fellows. But to imagine that we shall suffer again in some other condition of existence, because of our fathers' sins, is the height of insanity.

Respecting the authorship of these fables, we are told that the book which contains them, as well as the other four books of the Pentateuch, were written by Moses, under the inspiration of what is called the holy ghost; but when we examine these books we find that this is without doubt false, for it is not possible for any man to record his own death and burial, and the lives of a succession of prophets who lived after him, as is done in the last chapter of Deuteronomy. Then, again, in the seventh chapter of Genesis clean and unclean beasts are mentioned in connexion with the ark fable, whereas, according to the Bible, clean and unclean beasts were not declared such until 600 years after Moses is said to have died; which proves that Genesis was not written before that late period. The town of Dan is also mentioned in the fourteenth chapter, which town had no existence until 331 years after the recorded death of Moses. In chap. XXXVI. a list is given of all the kings that reigned over Edom "before there reigned any king over the children of Israel," proving once more that this book was not written until long after kings had reigned over Israel. Numerous other passages might be quoted to show that Moses could not have written the books that are ascribed to him. To cut the matter short, however, we are told in the 2nd apocryphal book of Ezra that he and his clerks wrote all the books of Moses; and in Chronicles and Kings that Shaphan discovered the writings in an old chest.

We find, therefore, not only that these fables of the creation and fall are not true records, but that it is not known who wrote them, although suspicion attaches to one Ezra; and yet we are expected to hang our chances of salvation upon them. We are handed these books

and told by a priest that they were originally derived from god. Now instead of believing the man, and taking no pains to find out what the volume really contains, as is unfortunately the habit of most people, our duty is clearly to investigate the matter, and try to find out whether that priest speaks the truth or not, whether he has any sort of interest in making us believe the volume to be the word of god, or, assuming that he himself honestly believes it to be so, whether he is a sufficient authority on the point. Let us, for instance, take the case of a stranger to the Christian faith, one who never heard of the Bible or its gods, and who meets a Christian priest in the backwoods of America. The holy one informs the stranger that he possesses a book which has been written by god, through the medium of the inspired minds of a number of holy men. Would you consider the stranger to be a man of sound mental faculties if he at once accepted the word of the parasite, and shaped his whole career according to the teaching of that book? Most assuredly not. The most natural thing for the stranger to do would be to stare in amazement at the saint, and wonder whether he was quite right in his mind. Observing that the priest was really in earnest, and apparently of sane mind, he would parley with him, asking where he procured his book from; who were the very holy parties who had been inspired to write it; when and where they lived; and who knew anything about them: in short he would demand from the unctious one his credentials before believing such an astounding assertion as that god wrote a book. The replies would be after this fashion. The book was derived in the first instance from a publisher's shop, where it had been printed with lead type and black ink, from another printed copy, which had been printed from another copy, and so on back to the first printed edition, which was copied from a translation of various Hebrew and Greek 'originals.' It was about two thousand years, he would say, since some of these 'originals' were written, and the remainder were supposed to be of much earlier date; but who the actual writers were he could not tell, although it was beyond doubt they were guided by god's inspiration, for it was so declared in the writings themselves, which had never yet been doubted, except by a few naughty men who were now in hell. Do you think this would be good enough for the stranger? Of course not. Then, in the name of common sense, why should we accept these Bible books without enquiry? To accept any

anonymous writings in blind faith as being the production of particular individuals, without corroborative evidence, is the act of a fool, not of a wise man. A sensible person will make some enquiry about them before accepting them.

Unfortunately for ourselves it is only lately that people have been wise or bold enough to use their reasoning faculties in these matters, the consequence being that the ordinary mind is now almost unequal to the task of unravelling the net which has been so cunningly spun around society by the Christian church. A careful investigation of the matter, however, leads to the inference that about B.C. 250 or 300 the Jewish chief priest Ezra, assisted by a number of clerks, commenced to form a national history out of the various legends they had picked up in their long wanderings, soon producing what are now known as the books of Judges (from the 3rd chap.), Samuel, Kings and Chronicles, which, together with the poems and incantations of various men of the tribes, they set forth as the divinely inspired history of their people. Not long afterwards the Persian system of creation, and story of the fall of man were committed to manuscript, and adapted to the requirements of the Jewish people by the substitution of their race in place of the Chaldeans as the chosen people of god; and thus were produced the books of the Pentateuch, with Joshua, and the two first chapters of Judges. This explains why the stories of the creation, fall, flood, tower of Babel, etc., are never mentioned in any of the books of the Bible after Genesis for the space of about a thousand years; why in all the books from Joshua as far as II. Kings the name of Moses is never met with, the most remarkable man in the whole Jewish history; and why such names as Adam, Eve, Seth, Cain, Abel, Enoch, Noah, Shem, Ham, Japhet, Abraham, Isaac and Jacob never occur again after Genesis till the time of the so-called return from Babylon.

The real meaning of the Chaldean and Jewish stories of the creation and fall, which were derived originally from the constellations above, it would take too long here to unfold, but the riddle has been explained in my "Popular Faith Unveiled," to which those who desire to further pursue the subject are referred.

For nearly two thousand years Christianity, based on these fables of the creation and fall, has had an unfettered career throughout Europe, its avowed object being to bring salvation to men in the next world,

and to teach the doctrines of love, forbearance, humility and charity while in this world. Respecting the bringing of salvation to men in the next world, we cannot well determine to what extent the religion has been successful; but with regard to its earthly mission it has signally and utterly failed. The two thousand years have passed away and still the evils surrounding us continue, and are even intensified; poverty, misery, immorality and tyranny exist as of old, in spite of the promise to the church that she should be helped, even to the end, by the divine power. So far from love, charity, forbearance and humility being inculcated by the church, we find the followers of the meek and lowly one occupying high and lucrative offices, one declaring himself the vice-regent of god on earth, and others, in our own country, being in receipt of salaries ranging from fifteen and ten thousand pounds annually to two or three hundred, driving their carriages, sporting livery servants and cockades, stiling themselves as Reverend, Very Reverend, Venerable, Most Reverend Father in God, Right Honorable and other titles expressive of superior quality of make; and all in a constant state of warfare amongst themselves. One cannot take up a daily paper without seeing an instance of clerical intolerance, hatred, envy or malice. The Romanist damns the Protestant; the churchman rides the high horse over the dissenter, and would like to deprive him of what is vulgarly considered to be decent burial; the evangelicals denounce the high church party; the nonconformist bodies are all at constant war with each other on points of doctrine; and while all are eaten up with pride, egotism, selfishness, greed and mutual hatred, each sect declares itself to be the genuine teacher of love, forbearance, humility and charity.

As a body the church has from the first opposed all progress. As early as the year 414 Bishop Cyril's mob brained the learned Hypatia in a Christian church, for the heinous crime of teaching mathematics. The Pope and his pious court attempted to prevent the art of printing becoming known in Europe. Copernicus was excommunicated for the sin of announcing the grand truth that the earth revolves round the sun. Galileo rotted in the prison of the Inquisition for daring to say that the earth rotates on its axis. Bruno was burnt at the stake for declaring his belief in the Copernican philosophy. Newton's theory of gravitation was denounced by the church. Descartes, Kepler, Locke,

Laplace and Darwin all were abused and insulted by the holy ones for their heretical writings, which have brought us such blessings. The church opposed the abolition of slavery, both here and in America, the bishops in the House of Lords applauding king George when he said that slavery was a useful institution because it was taught in the holy Bible, and the southern States of the Union appealing to the 'word of god' in justification of their cruelty. The burning of witches, taught in the Bible, was vigorously encouraged by the church; and the cruel horrors of the Inquisition are too well known to need description. All measures of reform in our own country have been opposed by bishops and nobles together; the church and the state having aided each other in trampling on the people's rights, and enslaving both their minds and bodies. In spite of the present very apparent poverty and misery, the people are exhorted by the church to increase and multiply, being told that it is a blessed thing to have one's quiver full, and that it is wicked to listen to those who preach conjugal prudence, small families, and social thrift. In short the Christian religion has entirely failed in its mission, being a standing menace to all progress, and a cause of unceasing animosity all over Europe.

Do we imagine that all the priests and ministers of the Christian church believe the fables of the creation and fall? I would stake my existence on it that if we were to cut off their salaries there would be barely half a dozen parsons in each denomination who would stick to their soul-saving business. Their trinity is supposed to consist of god the father, god the son, and god the holy ghost; but if we represent the first by the letter l, the second by s, and the third by d, we should be much nearer the mark. £. s. d. is the Christian trinity, and pew rents, tithes, etc., the means by which the one thing needful is kept up. Ten million pounds sterling are annually spent in supporting the clergy of the established church alone, while poverty, wretchedness and crime confront us at every turn. The struggling workers of this country, not content with having to contribute towards the payment of £29,000,000 annually, as interest on the national debt resulting from accumulated religious war charges, are foolish enough to spend more than a third of this amount in keeping a host of state-made drones, who oppose all progress, drain the hard earnings from the workers, and assume haughty airs towards their poor dupes. In the face of the

depressed state of our trade, and the poverty and misery around us, it is appalling to think of the enormous quantity of money that annually drifts into the pockets of these human parasites, both episcopalian and nonconformist alike.

We know well enough that the large majority of those laymen who profess to believe the fall and redemption scheme do not really believe it at all, but play the part of the believer in order to serve their own private interests. The laity may be divided into four classes:—1st, those few honest and sincere men who deceive themselves by imagining that they can really believe such unreasonable doctrines, and who attempt by their means to do what could be done so very much better without them. 2nd, those who are deficient in education and mental power, and who will accept anything the priest tells them, no matter how absurd. 3rd, those who have some little education but very little brain power, and who consider themselves very important members of society, when in reality the world does not know them even by name. They resent in their little minds the silent affront offered to them by their fellows, who, they think, ought to know their superior worth; and they look around for a little church or chapel, where the stream of intellect is sufficiently thin to allow of their feeble mental power being perceived. They join, take a leading part in the performances, carry the collecting box, open pew doors, hand hymn-books to strangers, and are happy in the consciousness of their importance, being gazed at Sunday after Sunday by an admiring congregation. Were these folk obliged to do their religious work under cover of masks, their names being at the same time studiously concealed from the congregation, the race of pew openers, box carriers, etc., would soon die out; but as it is, vanity, egotism and pomposity yet keep the race alive. The fourth class consists of sharp business men, with plenty of brains and fair average education, who join a church with a large congregation, and adopt the particular creed in vogue there, as a means of pushing their business, by assuming a mien of pious "respectability." These are the men, devoid of all honour, who forfeit their manhood at the shrine of hypocrisy, and who ought more particularly to be shewn up in their true colors. Without these four classes the religion of the fall and redemption scheme would soon become a thing of the past. No mention has been made of the ladies, who, according to some rude and

ungallant people, look forward to the lord's day as one on which they can display their new bonnets, procure food for another week's gossip, or hold sweet communion with the unmarried curate—all for Jesus. It is unnecessary to say that this may not be true, and that a higher and nobler motive may prompt the ardent zeal of the fair sex.

Do not believe the parsons when they tell you that your souls are in jeopardy for rejecting the Christian doctrines; the truth is that their incomes are in danger, not your souls. Take care not to follow their evil advice that it is a blessed thing to have your quiver full, and that the lord loves a cheerful giver. Have small families, being careful to bring into the world only as many as you can decently provide for, so as to give them a fair chance in the world; and let your creditors and your saving-banks, and not your lord, have your spare cash—your lord being but another name for your parson. When they tell you that you must take no thought for the morrow, and must not lay up treasure on earth, where moths and rust corrupt, and where thieves break through and steal, give them the cold shoulder, insure your life in some sound office, and leave the laws of the country in which you live to take care of the thieves, and their reverences to look after the moths and rust.

It will, no doubt, be urged that Christianity has done, and is doing a great good in the world. This I emphatically deny. I readily admit that some good has been effected in the name of Christianity, but deny that the fall and redemption religion has been the cause. The same amount of good would have resulted with any other religion, and much more with no religion at all. All the good that has ever been effected in the world has emanated from lofty individual minds; but as chance has had it, the majority of these men in the past have been Christians, simply because that religion has prevailed in Europe for nearly two thousand years. In the present day this is not the case; and it is a fact beyond contradiction that all the leaders of thought of our time are men who have rejected the fables of the creation and fall as given in Genesis, together with the consequent redemption scheme, as false and vain. John Stuart Mill, Herbert Spencer, Charles Darwin, Tyndal, Carpenter, Huxley, Oliver Wendell Holmes, Ralph Waldo Emerson, Rénan, Victor Hugo, Schopenhauer, Haeckel, and in fact every other modern leader of thought, have rejected the orthodox faith; and yet we look forward to the future with bright hope, expecting a steady

progress in man's general welfare. Even when Christians themselves in days long gone by, attempted to introduce any useful reform, their church invariably persecuted them, as for instance Copernicus, Galileo, Bruno, Luther, etc.; and the only Christian priest who ever propounded any theory which was calculated to be a lasting boon to society was Malthus, who declared that over population was the great cause of all misery, and that until people were taught conjugal prudence it was useless to attempt to ameliorate their social condition. This friend of humanity was bitterly denounced by the church, and to this day his followers are held in contempt, notwithstanding that the Malthusian principles are now endorsed by the leading social scientists, and that it is as clear as the sun at noon day that within the short space of 45 years the present population of this country—now about 36,000,000—will have doubled itself. The people now cannot support themselves, so how they will manage when the population is 72,000,000 it is hard to say. What with over population and land monopoly the future has indeed some terrible social evils in store for us.

Individual Christians undoubtedly have done something towards making their fellows happy, but not so Christianity, as witness the Inquisition and other enormities of the middle ages. But do the Jews, Unitarians and Infidels of to day do nothing for their fellows? What about Sir Moses Montefiore, who rejects the atonement? Have not the Agnostics just founded the Whitminster College for purely secular education? And what do we not owe to those heterodox scientists just mentioned? It is the fashion with some people to give the name of Christianity to the morality of this century; but this very ingenuous attempt to clothe one of the most immoral of the world's religions with the garment of righteousness carries no weight for the scholar and the historian. There is as much difference between the morality of to day and the genuine Christian religion as there is between the north and south poles. The two are the exact antitheses of each other. The real reason that the human race has in the last hundred years so rapidly advanced in intellectual qualities and moral progress is not because it has become more Christian in its character but because it has gradually shaken off the yoke of Christianity piece by piece. The whole Mosaic cosmogony, with its flat earth theory, creation of man, etc., as taught in Genesis, has been destroyed by Copernicus, Newton, Laplace and

Darwin; slavery has been abolished; witches are no longer burnt at the stake; polygamy is discountenanced; and human sacrifice, murder, rapine, theft and personal assaults are no longer justified. All these immoralities are distinctly and prominently taught in the Christian Bible, but have been expunged from the moral code of this century. Were Christianity now dead instead of dying the same amount of good would accrue to the race as before; and, judging from past history, there would be a very vast decrease in the opposition that has for two thousand years been offered to progress.

The question after all is not what Christianity has done, but whether or not its story is a true one. As already stated, if the creation and fall stories are not true the whole scheme of Christianity, with its god-man and its sacraments, is a fraud and a delusion. No religion that cannot bear the test of reason, and be maintained on a public platform can be founded on truth. If the Christian story be true there is no need for the holy ones to secure themselves behind the fortifications of 'coward's castle' every Sunday to preach their doctrines; the open platform being a more suitable place from which to propagate the truth. But what are the facts? The man who dares to submit the religion to the test of reason, or even to discourse publicly upon evolution or any other scientific theory that is likely to interfere with the steady flow of bullion into the collection box, is denounced from the pulpit, the holy ones branding him as a dangerous infidel, and using all the means in their power to blacken his character and to insidiously undermine his business. The challenge to debate is never accepted.

The question before us is a momentous one. Creation or Evolution? Moses or Darwin? We cannot follow both.

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