

SMITHSONIAN MISCELLANEOUS COLLECTIONS

VOLUME 61, NUMBER 6

GREAT STONE MONUMENTS IN HISTORY
AND GEOGRAPHY

BY

J. WALTER FEWKES



(PUBLICATION 2229)

CITY OF WASHINGTON
PUBLISHED BY THE SMITHSONIAN INSTITUTION

1913

The Lord Baltimore Press
BALTIMORE, MD., U. S. A.

GREAT STONE MONUMENTS IN HISTORY AND GEOGRAPHY¹

By J. WALTER FEWKES

INTRODUCTION

A seemingly well defined phase of human culture history, attained independently in localities widely separated geographically, has been designated the megalithic. The dominant racial feeling, religious or cultural, was expressed in this epoch by great commemorative monuments constructed of stone and called "monoliths," or, when sculptured in life forms as representations of animals, men, and gods, they are termed colossi.

The close connection, in the mind of primitive man, of culture and religion is preserved in the Latin word *cultus*, or its English derivative, culture, the stimulus for which is desire for improved condition of life in thought and act or a striving for higher ideals, so well brought out in Mr. Matthew Arnold's scholarly essay, "Sweetness and Light." The megalithic epoch expresses objectively a consciousness of power and is largely correlated with religious feeling and the cult of the dead.

This phase in racial history culminated in the later Stone Age, and in some cases lasted long after the discovery of metals, echoes of it appearing sporadically even in the highest civilization. Many races appear not to have had a megalithic epoch in their history; in others the expression was individual, not racial; some peoples had not sufficiently advanced to have attained it, while others have progressed so far beyond this condition that its very existence is at present known only by monuments; the names and the races of the builders have passed out of memory, or are unrecorded.²

¹ Presidential address delivered before the Anthropological Society of Washington, February 20, 1912. This address was accompanied by stereopticon views, only a few of which are here reproduced as illustrations.

² Since the habit of erecting megalithic structures is of independent origin and not derivative, the age of monoliths varies among different races. While the dynasty in which many of the Egyptian obelisks were erected is known from the inscriptions they bear, no one has yet satisfactorily determined the antiquity of the unworked dolmens and menhirs, nor is it known whether they were erected contemporaneously with obelisks or earlier.

The able archeologist, Dr. Daniel Wilson, was one of the first to clearly recognize this epoch, as will appear in the following quotation from his article on *Archæology* in the *Encyclopædia Britannica* :

There appears to be a stage in the development of the human mind in its progress towards civilization when an unconscious aim at the expression of abstract power tends to beget an era of megalithic art. The huge cromlechs, monoliths, and circles still abounding in many centers of European civilization perpetuate the evidence of such a transitional stage among its prehistoric races. But it was in Egypt that an isolation, begot by the peculiar conditions of its unique physical geography, though also perhaps ascribable in part to certain ethnical characteristics of its people, permitted this megalithic art to mature into the highest perfection of which it is capable. There the rude unhewn monolith became the graceful obelisk, the cairn was transformed into the symmetrical pyramid, and the stone circles of Avebury and Stonehenge, or the megalithic labyrinths of Carnac in Brittany, developed into colonnaded avenues and temples, like those of Denderah and Edfu, or the colossal sphinx avenue of Luxor.

He refers elsewhere to it as follows :

There seems to be an epoch in the early history of man when what may be styled the megalithic era of art develops itself under the almost endless variety of circumstances. It is one of the most characteristic features pertaining to the development of human thought in the earliest stages of constructive skill.

It is an instructive study in religious or culture history to trace the distribution of megalithic monuments characteristic of this epoch, to compare the varieties of forms they assume in different localities and consider their purpose ; but the vastness of the subject limits my consideration to one aspect, monoliths and colossi, rendering it necessary to pass over a large number, perhaps the majority, of megaliths.

Why do these monuments occur in certain geographical localities and not in others, and how are they to be interpreted by the student of human geography ? What is the nature of the feeling they express ?

The causes which have led one race and not another to develop a megalithic habit may be sought in certain psychical conditions difficult of interpretation, but the custom appears to have originated independently and spontaneously under different physical conditions. The erection of monoliths is not due to similarity of environment so much as to identity of thought ;¹ the feeling originating subjectively rather than in response to surroundings. Westropp (" Prehistoric Phases ") writes :

It is now a generally accepted canon that there are common instincts implanted by nature in all the varieties of the human race, which lead mankind

¹ A consciousness of power, always a source of personal and racial gratification, tends to express itself in huge monuments.

in certain climates and at a certain stage of civilization to do the same thing in the same way, or nearly so, even without teaching or previous communication with those who have done so before.

Mr. John Evans apparently had a similar idea and remarks:

The curious similarity observed in different parts of the world may possibly be due to some analogous development of thought and feeling rather than to any intimate connection between the races who erected them.

In much the same way Professor Westropp thus expresses himself in his work "Prehistoric Phases" (p. 122):

The weapons and instruments of stone which are found in the north of Europe, in Japan, in America, the South Sea Islands, and elsewhere, have, for the most part, such an extraordinary resemblance to one another in point of form, that one might almost suppose the whole of them to have been the production of the same maker. The reason for this is very obvious, namely, that their form is that which first and most naturally suggests itself to the human mind.

Mr. Dennis in a suggestive work,¹ speaking of those megalithic monuments called cromlechs, writes:

This form of sepulchre can hardly be indicative of any race in particular. The structure is so rude and simple that it might have suggested itself to any people and be naturally adopted in an early state of civilization. It is the very arrangement the child makes use of in building his house of cards. This simplicity accounts for the wide diffusion of such monuments over the Old World . . . there is no necessity to seek for one particular race as the constructors of these monuments or even as the originators of the type.

The significance of megalithic monuments is correctly pointed out by Mr. Fergusson who writes:²

Honour to the dead and propitiation of the spirits of the departed seem to have been the two leading ideas that, both in the East and West gave rise to the erection of these hitherto mysterious structures which are found numerous scattered over the face of the Old World.

In somewhat the same vein are the words of Mr. John Stuart:

The remains of most ancient people attest that greater and more enduring labor and art have been expended on the construction of tombs for the dead than in abodes for the living.

Sir James Stimpson held somewhat the same belief:

There is no longer reason to doubt that the Egyptian pyramids are megalithic tombs of the dead.

¹ Groge Dennis, *The cities and cemeteries of Etruria*. London, 1848, 3 ed., 1883.

² Fergusson, *Rude Stone Monuments*, p. 509.

A study of the megalithic epoch has its historical and its geographical sides; the historian being concerned with its appearance in time; the geographer with place. The anthropogeographer embracing both in his consideration asks the pertinent question: Why has this epoch occurred at a certain place at a certain sequence in culture history and not elsewhere at another time?

It is unnecessary to remind you that culture history is not limited to written records, and that concerted actions of races, whether recorded or not, constitute their history. Those inventions that have most profoundly influenced culture, like the discovery how to make fire, are more important in results than great battles that have brought about dynastic changes.

Monoliths, as expressions of a desire to perpetuate the memory of ancestors or to commemorate past events, are naturally found only where the race had arrived at a self consciousness of its own power. Their geographical distribution¹ over the earth's surface corresponds roughly with the awakening of that consciousness. The megalithic custom, therefore, has an independent origin among different people, and its prevalence among widely separated races by no means implies, much less proves, acculturation or contact. It is autochthonous and its origin, being mental, can be traced to what for a better name we call psychic influence.

The megalithic habit is necessarily dependent on the nature of convenient rock formations and other geological conditions.

It is self evident that except in so far as the production of megaliths is dependent on transportation of material used, the distribution of monoliths is largely geographical, correlated with that of stones suitable for their manufacture. Great plains or sandy deserts furnish scanty material for construction of monoliths, and if megaliths are used by people living in this environment the distribution of rivers and the direction of their flow, by which they were transported from a distance, must be given weight. Monumental structures are not to be expected in cold regions where the earth's surface is covered with snow or ice clad; while generally children of the deserts, they occur in forested regions, and are commonly found in those regions of the earth that show a long continued habitation by man. They are tropical and warm temperate zone structures and exotic elsewhere.

¹ Evidences of great human antiquity are commonly found in regions where megaliths occur. It takes a long time to develop this habit or phase of thought, and monumental structures are not the product of a few years.

It will be well, at the very outset, to choose a few types of megalithic monuments for study and to eliminate certain huge single stones used in construction of cyclopean walls, although they also are the same mental expressions and have a close cultural affinity with colossi and monoliths; they may be passed by but not neglected.

For convenience, monoliths may be treated under the following headings: (1) natural stones of great size placed vertically by human means but showing no sign of having been artificially shaped; (2) monoliths carved or otherwise worked artificially generally bearing elaborate inscriptions; (3) colossi or cyclopean monolithic representations of real or imaginary beings.¹ Monoliths may be still further classified, according to their purpose, as erected in commemoration of events or persons, boundary stones, or connected with ceremonials, but in no classification that has yet been devised do we find a clear cut line of demarkation between different classes. Thus large stones commemorative of events or statues of kings easily develop into objects of reverence. It is interesting to note that colossal statues of so-called gods are often commemorative of deified heroes, and it is probable that the same feeling that leads civilized man to erect statues of those he honors also accounts for the existence of monoliths among men less highly developed culturally.

Natural monoliths or huge stones, unchanged by the hand of man, have been set up by all races, occurring with equal abundance in Europe, Asia, Africa, America, and the islands of the Pacific. They are found singly, or in groups, regularly or irregularly arranged, taking the forms of rectangles, circles, and other combinations.

OLD WORLD MEGALITHIC EPOCH

In certain regions of the earth's surface, as in France, England, the Mediterranean Islands, along the coast of northern Africa,² Syria, Egypt, and India, monoliths are more abundant than in regions situated in higher latitudes. They are not found very far from the historic zone of civilization. The similarity of these objects along both shores of the Mediterranean Sea and beyond the Pillars of Hercules has suggested to some students that they were erected at the

¹ The discussion is limited to monolithic colossi for obvious reasons.

² A. Lissauer, *Archæologische und Anthropologische Studien über die Kabylen* (*Zeit. f. Eth.*, Vol. 40, part 4, 1908. Berlin, 1908) gives figures and illustrations of dolmens, menhirs, and cromlechs from Tunis to Tangiers. A map locating the megaliths shows the distribution of different types. Translation in *Smithsonian Report for 1911*.

same time by the same race, but the constructors of monoliths have not necessarily a racial connection.

It is believed that the unworked monolith was used far back in human history for some religious purpose. While its erection as a commemorative object would seem to be secular and to have developed from the habit of throwing together a heap of stones to mark some event, a large stone has almost invariably acquired a religious meaning. Worship of stones is universal;¹ the Greeks early worshipped a shapeless stone, probably a meteorite, in Ephesus that was later replaced by a beautiful statue representing Diana. The Kaaba of Mecca, as is well known, antedates the Mohammedan era; the shrine of the Earth and Fire god of the Hopi Indians of Arizona is a log of petrified wood.²

The following interpretation of the structure of megaliths known as cromlechs has been suggested by Herr W. Pastor. They present three distinct regions: (1) a centrally placed altar; (2) one or more concentric circles³ of stone surrounding this altar; (3) an entrance passing to the holy enclosure formed by rows of stones cutting the concentric circles at right angles.

Since monoliths from their very nature are commemorative they early became the media on which pictographs were incised, and there is an instructive connection between the origin of writing and the construction of monoliths. Man first inscribed his ideas on the face of cliffs, rocks, or boulders, and it is a significant fact that the races that have invented writing have likewise been foremost in erecting monoliths. The relation, however, is not necessarily one of cause and effect. On Easter Island, for instance, where great colossi in human form exist, we also find evidence of writing. The glyphs of the Central American stelæ are well known. The Egyptians who excelled all people in the grandeur of their megalithic monuments, have left the largest known corpus of hieroglyphic material. Irish

¹ My friend, Dr. I. M. Casanowicz, has called my attention to the fact that Cybele (Magna deum Idæa) "came from Phrygia to Rome in 204 B. C. and was solemnly installed on the Palatine under the form of a black aerolite."

² Very many instances of stone worship among American Indians might be mentioned; almost any strangely shaped stone is supposed to have magic powers.

³ Professor Lockyer finds in these circles of megaliths evidences of sun worship; according to him the concentric lines of stones represent the course of the Sun god. To Mr. Arthur Evans "it seems a universal rule that the stone circle surrounds a central dolmen or stone cist containing the remains of the dead."

ograms and Scandinavian runes are well known, but no North American tribe erected a monolith or independently invented a system of writing. In the majority of cases the most perfect monoliths, like the obelisk and colossus, in the New World as well as the Old, bear hieroglyphics.¹

We find at various places in the old and new continents monoliths arranged in alignment or rectangular or circular forms which were connected with solar or stellar ceremonies. These combinations bear various names, being known in the New World as Indian



FIG. 1.—Portion of Stonehenge, Wiltshire, England, from Lockyer.

enclosures, ball courts, or corrals; while in the Old World they are called dolmens, menhirs, and cromlechs.

Columns or pillars supporting roofs of buildings, which are so common in sacred architectural constructions, are regarded as monoliths related to those commemorative or religious forms we are considering.² In the same architectural category are huge stone blocks

¹The association of writing with monoliths is one aspect of a general truth, already mentioned, that the latter almost universally occur in localities where there are evidences of a great antiquity of man.

²This theory would consider the columns of Greek temples as morphologically upright stones surrounding a sacred enclosure, rather than homologues of wooden piles of archaic pile dwellings, as taught by Sarasin.

used in foundations or construction of buildings or monolithic roofs of tombs. The covering of the grave of Theodoric the Great at Ravenna, Italy, is a good example of this type of monolith, as are likewise the huge stones found in buildings in Japan, at Ostia near the mouth of the Tiber, in Peru, and elsewhere.¹

At this point in a consideration of megalithic structures may be mentioned the almost universal duality of types of buildings among human races, or the deep-seated architectural distinction between sacred edifices and habitations. This difference is primarily due to dissimilarity in origin and use. The hut or habitation has, as a general thing, no resemblance to a primitive sacred edifice, nor does the home and temple develop along the same lines. One is transient, the other permanent; one disappears in a generation or two, the other remains unchanged; one is the product of individual labor, the other of combined racial work governed by religious ideals. Consequently little or nothing is known of the houses of the builders; we know only their great temples or religious structures.

As megalithic structures are religious in use it is natural to trace their origin to the same feeling that erected rude stone monuments or monoliths to tombs of the dead, rather than habitations of the living. Temples and shrines thus belong to a series apart from secular buildings. To them we owe the development of sacred architecture which is primarily a communal expression of religious feeling in the building art. The palace-temple contains rooms for the residences of priests, but still preserves the primary distinction between a habitation and a sacred edifice.

The best known of all megalithic monuments is the famous Stonehenge, in Wiltshire, England, the purpose of which has been variously

¹ So far as size goes some of the circular disks with central holes, from Uap, one of the Caroline Islands, may be called monoliths. These stones have been figured and described by Mr. Wm. H. Furniss, 3d, who thus identifies these as stone coins: "This medium of exchange they call Fei and it consists of large, circular, stone wheels ranging in size from a foot in diameter to twelve feet, and having in the center a hole, varying in size with the diameter of the stone, wherein a pole may be inserted sufficiently strong to bear the weight and to facilitate transportation. These stone coins, if I may so call them, are not made on the island of Uap, but were originally quarried and shaped in the Pelao Islands, four hundred miles to the southward, and then brought to Uap by some venturesome navigators in canoes and on rafts, over seas by no means as pacific as the name implies." (University of Pennsylvania, Trans. Dept. Archæol. Free Museum of Science and Art, Vol. I, 1904-5, p. 53.)

interpreted by different authors. This monument consists of many monoliths and trilithons, some of which are more or less artificially worked, others natural, surrounded by rings of stone.

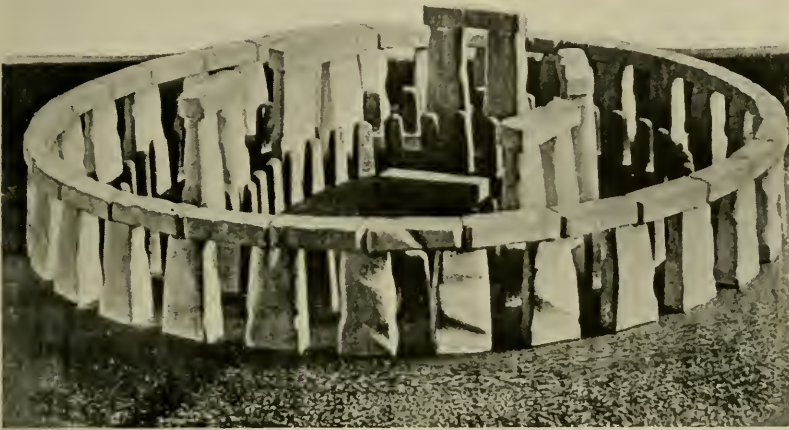


FIG. 2.—Stonehenge, Wiltshire, England (restored).



FIG. 3.—Stonehenge, Wiltshire, England, from Lubbock.

The stone circles of Avebury, measuring 1,200 feet across, were the largest and finest megalithic monuments in existence, "exceeding Stonehenge as a cathedral does a parish church." Other stone circles occur at Stanton Drew in Somersetshire, in the Orkneys and other English islands.

Simpler forms, like "Kit's Coty House," one of the best known dolmens¹ in England, are reproduced almost in duplicate in Sweden, Holland, Denmark, Portugal, France, India, on the banks of the Jordan, in the deserts of Arabia, India, Syria, Mexico, and Peru.

The evidence available shows that rude undressed stones, like menhirs, dolmens, and cromlechs, are essentially sepulchral or memorial stones, but their wide distribution over the earth's surface precludes our limiting them to any one race of men. In some parts of



FIG. 4.—Talaya, Balearic Islands, from Cartailhac.

Europe they have been ascribed to the Druids, but the presence of dolmens² and cromlechs in lands where Druids never lived shows that this popular belief must be somewhat modified. In their distribution around the shores of the Mediterranean, Corsica, Sardinia, and the Balearic Islands, they seem to have followed certain laws which might

¹ Particularly fine table stones called talaya, occurring in the Balearic Islands, have been described by Cartailhac, *Monuments primitifs des isles Baleares*, Toulouse, 1892. The latest work on these talayas is by A. Bezzenberger, *Vorgeschichtliche Bauwerke der Balearen*, Zeit. für Ethnol., Berlin, 1907.

² Their names are Gaelic, but there is nothing to show that a cromlech or dolmen was ever constructed by the Druids for an altar.

lead us to refer these monoliths to a center of distribution, situated on the shore of the eastern Mediterranean, but this law can not account for the presence of similar monoliths of the New World or in eastern Asia or southern Africa.

Some of the dolmens now above ground were formerly buried and were superficially indicated by mounds or barrows.¹ But perhaps the religious character of menhirs, cromlechs and dolmens is best indicated by those buried in mounds:

The great Lanyon dolmen in Cornwall was uncovered about one hundred years ago by a farmer who supposed it to be a mere heap of earth which he thought might be usefully applied to farming purposes. By degrees, as the earth was carted away, the great stones began to appear and when operations were completed and all the soil had been cleared away the dolmen, much as it now exists, was disclosed containing in its interior a heap of broken urns and human bones.

The relation of megalith and mound is shown in the accompanying views (figs. 5, 6) of New Grange, Ireland, from a work on Irish antiquities by Vallancey, published near the close of the 18th century.

The geographical distribution of megalithic remains is almost parallel with that of stone buildings, which in turn are identical with caves, natural and artificial.

Mr. Baring Gould² describes and figures buried dolmens in south France upon which churches were constructed, the chamber of the dolmen serving as the crypt of the church, a perpetuation of the sacred character of a building used for religious purposes in prehistoric times before the introduction of Christianity. This fact is in evidence

¹ Some of the dolmens may have always been aerial or never covered with soil forming a mound; others apparently were formerly buried, appearing on the surface as a barrow or mound.

² *Cliff Castles and Cave Dwellings of Europe*, London, 1911. According to Mr. Baring Gould (pp. 190-192) there is situated near Plouaret, in Cotes-du-Nord, a prehistoric dolmen under a tumulus on which is a chapel, the crypt of which is the subterranean chamber of the dolmen. The prehistoric monument in this example consists of two capstones of granite resting on vertical uprights. He likewise describes from Cangas-de-Ones near Oviedo, in north-west Spain, a chapel on top of a mound covering a dolmen. From the chamber of the dolmen that serves as the crypt to the church prehistoric copper and stone objects have been taken, the country people regarding the cavity of the dolmen as a saint's tomb, soil from which is regarded by them as possessing medicinal virtues. The cover or capstone of a dolmen near S. Germain-sur-Vienne is supported on pillars made in the 12th century, the original supports having been removed. It served as a cover of an altar made of stone and a chapel now destroyed was built about it—a transmission of the sacred use of the dolmen as an altar into Christian worship.

in its bearings on the former religious use of the megalithic monuments.

Windle,¹ in considering the use of monoliths, writes:

Such stones have been in other countries not merely memorials of some great deed or departed hero, but objects of worship, and the same was probably the case in this country.

Mr. Gomme, in an instructive work, "Survivals of Worship," shows how the reverence once attached to them persists in folk practices.

At the village of Holme situated on one of the moors of Dartmoor is a field of about two acres, the property of the parish and called Plog Field. In the center of this field stands a granite pillar (menhir) 6 feet or 7 feet high. On May mornings before daybreak the young men of the village used to assemble there and then proceed to the moor where they released a ram lamb, and after running it down brought it in triumph to the Plog Field, fastened it to the pillar, cut its throat and then roasted it whole.

The relation of megalithic chambers and burial tumuli is shown by a writer in the following quotation from the Edinburgh Review:

It may probably be assumed that the dolmen or cromlech was originally a stone cist in the center of a tumulus meant to contain either one or more bodies. This, afterwards, was expanded into a chamber for the accommodation of several. In the third stage it was furnished with a passage or avenue of entrance so as to be permanently accessible. In the fourth stage, the covering tumulus was dispensed with; but the last form most probably was when the cromlech was placed externally on the top of the mound as a mere ornament or simulated tomb, as we find in France and Algiers.

The evidence drawn from a study of the monoliths known as menhirs, dolmens, and cromlechs seems conclusive that they were connected with religious beliefs and always related in some way to the dead or mortuary ceremonials. In western Europe these stones have long since ceased to be used in religious rites, although survivals of former ceremonials persisting in peasant folk lore, are significant. We must look elsewhere in other lands where similar objects occur for light upon the meaning of monoliths. Asia and Africa furnish important aid in this study.

Herr Kremer in his accounts of the ancient cults of Arabia makes frequent allusions to natural stone worship, and in the village of Tarf there was worshipped a great irregular stone block identical with a

¹ B. C. A. Windle, *Life in Early Britain*. London, 1897. This author also writes: "The observation of Aristotle, to which Dr. Thurman calls attention, that the Iberians used to place as many obelisks around the tomb of the dead warrior as he had killed enemies perhaps gives a clue to the origin of this custom."

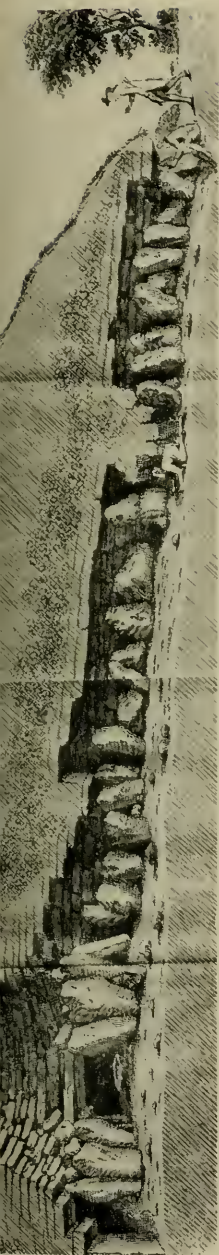


FIG. 5.—Lateral view, New Grange, Ireland (schematic) from Vallancey.



FIG. 6.—Ground plan and elevation of mound at New Grange, Ireland, from Vallancey.

goddess whom Herodotus called Urania. The Phenicians were very much given to the worship of stones called baetylia, and wherever the influence of this wide roving race of traders was exerted there these monoliths are found. They are scattered along routes of trade of this people and to a degree their distribution follows the same law as that of Greek colonization so ably pointed out by Professor Myers. Apparently the same paucity of these monuments is found on the coast of the Adriatic Sea, for the same reason that it has no Greek colonies. These baetylia are most abundant where Greek and Phenician settlements, especially the latter, are most numerous.

Certain districts of India, as the Neermul Jungle, are said to swarm with monoliths and megalithic monuments. In Berrary, alone, Dr.



FIG. 7.—Carnac, Brittany, from Hunter-Duvar et alii.

Forbes Watson counted 2,129 megalithic monuments, and menhirs, cromlechs, and dolmens have been recorded in Sorapoor and Khasia; they also occur elsewhere among the hill tribes. The Todas in the Nilghery Hills have large stone circles similar to those of England, and in the Deccan, in India, villages are said to have circles of large stones sacred to Vetac. Col. Leslie records stone circles in Ceylon, and according to Palmer there are stone circles over 100 feet across near Mt. Sinai in Arabia, where Kohen mentions three large stone circles consisting of lofty trilithons 10 feet high, standing on raised foundations. Stone monuments occur in Morocco, Algiers, Tripoli, and along the whole coast of northern Africa; Lieutenant Oliver has compared the megalithic structures found in Madagascar, among the Hovas, with those of the Channel Islands.

The upright stones of some of the East Indian dolmens in the Deccan are, according to Capt. Meadows Taylor,¹ perforated and used by the natives for various purposes one of which is to facilitate the passage of food to the manes of the dead.

Similar "holed-stones," according to Mr. W. G. Wood-Martin,² which "may, in most instances, be regarded as pillar-stones," are found in Ireland: they occur in Scotland, England, and France, and from thence can be traced to India. It is stated that in the last mentioned country these perforated stones are "used by devotees, as a means of attaining forgiveness of sins, or for spiritual regeneration. If the hole is large enough, the suppliant creeps through, but if it is small the hand alone is passed through."

While some of the Irish "holed-stones" are unworked monoliths perforated, belonging to pagan times and worship, the early Christian missionaries, in order "to divert the religious feeling pertaining to them into Christian channels, caused them to be cut in the shape of crosses, the hole being reduced to the size of the finger." These so-called "secondary holed-stones" are also known in Ireland as "prayer-stones" and still appeal to the imagination of the modern peasants, who suppose they possess magic powers. Irish country women resort to them to pray for children; marriages are performed near them, the betrothed pair clasp hands through them; while children by creeping through them are supposed to be cured of certain



FIG. 8.—Holed-Stone, India, from Strand Magazine.

¹ Capt. Meadows Taylor, *Trans. Roy. Hist. Acad.*, Vol. 24, p. 329.

² W. G. Wood-Martin, *Traces of the Elder Faiths of Ireland*, 2 vols., London, 1902.

ailments. The ancient varieties sometimes take the form of stone rings which Mr. Wood-Martin labels, "enormous wedding rings." Circular "secondary holed-stones" known to have been "lying for ages in the church yard of Kirk Braddan in the Isle of Man," remain, according to Mr. Wood-Martin, "ready for use by any bewildered bridegroom who may have forgotten to bring the ring for his bride."

It is a far cry from the Manx stone rings to the stone "collars" of the aborigines of Porto Rico, but both may have been connected with rites of similar intention.¹



FIG. 9.—Holed-Stone, Ireland, from Wood-Martin (Welsh's Irish Views).

For obvious reasons I shall not attempt to consider the phallic side of the study of monoliths, but my presentation would be incomplete if it were not mentioned. It is self evident that the mystery of the origin of life made a profound impression on the mind of the primitive as well as on the most highly educated mind.

¹ In a short article in the *American Anthropologist* (Vol. 13, No. 3, 1911) Mr. Herbert Janvrin Browne interprets the Porto Rican slender stone collars as representing the female sex organ used in auto-suggestion at birth. He also identifies on them the different anatomical parts. It is not unlikely that these enigmatical objects may be connected with germination ceremonies, but how far we can go in comparing them in detail with the organ mentioned is not wholly satisfactorily determined.

Similar perforated stones, called in Germany "helfensteins," are interpreted as connected with a future life in the sepulture they enclose. Perforated slabs of rock of unknown significance occur in pueblo graves near ruins along the Little Colorado in Arizona.

Dolmens have been found in Korea, and others constructed of unhewn stones have been discovered in Kiusia and in the south part of the island Yeso. Some of these Japanese dolmens are two chambered and have stone floors and passageways.

Palgrave mentions in an account of his travels that he saw in the Kaseem, central Arabia, enormous stone boulders placed perpendicularly and he also records having observed others arranged in curves as if they once formed a part of an immense circle, differing but little from Stonehenge or other European dolmens and cromlechs.

The artificial monolith includes all single stone monuments of size worked by human hands, from a rude hewn slab set on end to a finely carved obelisk inscribed with hieroglyphs. Some of these stones are enormous in size, but how they were cut from the quarries and transported long distances are facts difficult to explain with our limited knowledge even of the Egyptians, whose every art and craft is illustrated on the walls of tombs and temples by picture writing. Many of these large stones were apparently moved without the use of machinery, yet we find this accomplished without leaving any traces of roads or highways. To indicate the magnitude of the work of transporting these great stones consider the amount of labor in transporting the monolithic pillars of the Treasury building in Washington, which are among the largest single stone blocks in the United States, and have been calculated to weigh 38 tons; some of the Egyptian obelisks weigh 300 tons, or nearly eight times as much.¹

The columns or pillars of the Cathedral² of St. John the Divine in New York will be even larger than the monoliths of the Treasury building.

¹The monument of Emperor Alexander I, standing in front of the winter palace in St. Petersburg, probably the most remarkable monument of artificial monolith in existence, is a cylindrical pillar of one solid piece of granite 78 feet high and 12 feet in diameter.

²Granite monoliths are being quarried at Vinal Haven, Maine, for the cathedral being built at Morningside Park, New York. Thirty-two of these columns are required to be 54 feet long and 6 feet in diameter, each weighing 160 tons, or two-thirds as much as Cleopatra's Needle in Central Park. For dressing and polishing these granite columns they are mounted in a giant lathe and revolved so as to bring their exterior surface first against cutting tools and afterward on polishing materials. This lathe is 86 feet long and weighs 135 tons, and the rough stone which it reduces to dimension, weighs at first as much as

Prof. G. P. Merrill, Curator of Geology, U. S. National Museum, has kindly sent me the following data on large stones lately quarried:

Authority	Quarry	Destination	Size	Weight.	Kind of Stone
Stone, Dec. 1892, p. 60	Stony Cr., Conn.	West Point, N. Y.	41'x6'x6"	100 tons	Branford Red Granite
Stone, Mar. 1902	Hallowell, Me.	Hall of Records, N.Y.	36'10"x4'10"	Granite
.....	Badger Bros Quincy, Mass.	72" diam.	110 tons
.....	Barre, Vt.	Mausoleum Vice-Pres. G. A. Hobart	34'	43 tons	Granite
.....	J. J. and F. P. Treanor, Hastings-on-the-Hudson, N. Y.	Stoop, Huntington Mansion, 5th ave. and 57th st., N. Y.	22'x15'x18"	24 tons

Several of the obelisks quarried and moved by the Egyptians were double the size of any of these and weighed several times as much:

The estimated height of the Lateran obelisk is 105 feet 6 inches and its weight 510 tons; Cleopatra's Needle in New York is 69 feet 6 inches high and weighs 224 tons. The obelisk still in the quarry at Syene is 95 feet long and it is estimated to weigh 770 tons, which may be a greater weight than the Egyptians could move.

The monolith has a religious significance in Arabia and is used to designate a place of prayer in some parts of Asia Minor. The present distribution of these monoliths marks the distribution of that pagan worship or abomination the Israelites repeatedly tried to root out but without success.¹ These "high places of worship" formerly found

310 tons. This lathe was designed and patented by engineers of Boston, and was constructed in Philadelphia. (*American Geologist*, Vol. 27, No. 1, January, 1901, p. 66.)

¹ Whether or not we accept the theory that the church spire and minaret is the surviving homologue of the ancient obelisks marking places of prayer, the absence of steeples in synagogues is often quoted as a protest against these indications of heathen worship.

Although the Israelites were commanded not to set up an image of stone (eben maskith) they often used stones for commemoration, as when Joshua erected 12 stones in Gilgad after crossing the Jordan.

everywhere among the Moabites, Canaanites, Edomites, and Samaritans are still to be seen in the Syrian and Arabian mountains, where they are marked with obelisks cut out of solid rock, photographs of which are shown by Libbey and Hoskins¹ in their account of the ruin of Petra.

It is instructive to note how universally ancient megaliths have come to be associated with germinative rites, which among primitive man are universal. In Brittany and elsewhere in France, Sabillot has found in the folk lore of the country people many large boulders where germinative rites are still performed. The same association exists

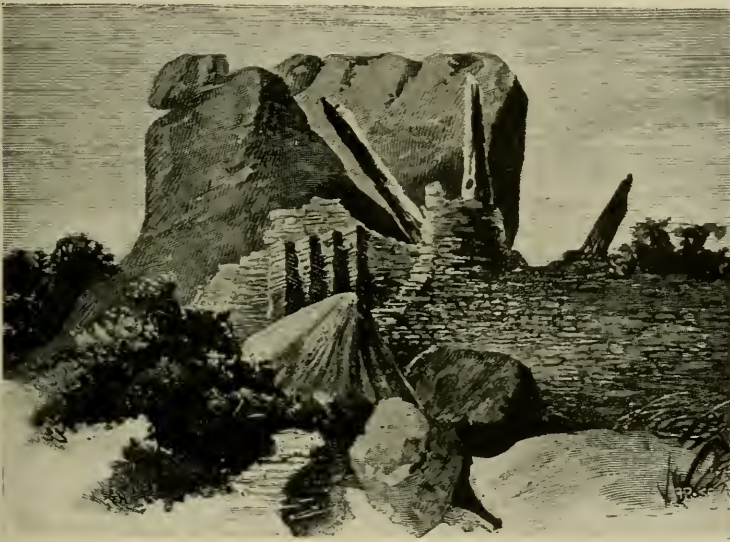


FIG. 10.—Platform monoliths, Zimbabwe, Africa, from Bent.

wherever monoliths occur. The obelisk or stone pillar of Begig in the Fayum is resorted to by Egyptian women who desire children, and the god of germs at Hopi is a log of petrified wood; survivals from different geographical locations which are instructive as showing the connection of these large stones with earth goddess worship.

The monoliths found in the great ruins of Mashonaland, in South Africa, recall in general forms the menhirs of Brittany, being for the most part tall, rude monoliths alternating with small round masonry towers arranged on platforms, reminding one of the stone colossi and their bases at Easter Island.

¹ William Libbey and Franklin Evans Hoskins, *The Jordan Valley and Petra*. New York, Putnam and Sons, 1905.

At the great ruin Zimbabwe, in South Africa, there are huge boulders about 50 feet high; immediately below the highest is a curious little plateau adorned by huge monoliths and soapstone pedestals supporting gigantic stone birds, the tallest of which stood 5 feet 4 inches in height. Several of these monoliths are decorated with life figures, one of which, $11\frac{1}{2}$ feet high, is made of soapstone and adorned with geometrical patterns. In Bent's account¹ of this ruin occurs the following forcible description:

Such is the great fortress of Zimbabwe, the most mysterious and complex structure that it has ever been my fate to look upon. Vainly one tries to realize what it must have been like in the days before ruin fell upon it, with its tortuous and well-guarded approaches, its walls bristling with monoliths and



FIG. 11.—Stone birds, Zimbabwe, Africa, from Bent.

round towers, its temple decorated with tall, wierd-looking birds, its huge decorated bowls, and in the innermost recesses its busy gold-producing furnace. What was this life like? Why did the inhabitants so carefully guard themselves against attack? A thousand questions occur to one which one longs in vain to answer. The only parallel sensation that I have had was when viewing the long avenues of menhirs near Carnac, in Brittany, a sensation at once fascinating and vexatious, for one feels the utter hopelessness of knowing all one would wish on the subject. When taken alone this fortress is sufficiently a marvel; but when taken together with the large circular building below, the numerous ruins scattered around, the other ruins of a like nature at a distance, one cannot fail to recognize the vastness and power of this ancient race, their great constructive ingenuity and strategic skill.

Although we have no positive evidence that the South African obelisks are religious, the probability is that these monoliths illustrate

¹ J. Theodore Bent, *The Ruined Cities of Mashonaland*. London, 1892, p. 112.

the same law as similar structures found in Asia, Europe, America, and Polynesia. They are religious in nature or connected with worship and the cult of the dead.

OBELISKS

The most finished type of monolith is the obelisk,¹ a stone structure best represented in the valley of the Nile and adjacent territory. In architectural proportions the Egyptian obelisk is a perfect monolith. Although from the early times transported by conquerors



FIG. 12.—Monolith, Zimbabwe, Africa, from Bent.

of Egypt to different localities in Europe and adopted throughout the world as a commemorative or mortuary monument, the obelisk in its present form originated in a narrow geographical area skirting the Nile, in northeastern Africa.

Hardly a civilized country can be mentioned where imitations of Egyptian obelisks are not found. Essentially Egyptian in origin the obelisk was copied by both Greeks and Romans, especially the latter,

¹ Egyptian Obelisks by Henry H. Goringe, New York, 1882. This monograph contains an exhaustive account of all known obelisks and a special description, profusely illustrated, of the removal of Cleopatra's Needle from Alexandria to New York; also Erasmus Wilson, *Cleopatra's Needle and Egyptian Obelisks*, London.

and its beauty¹ has been admired from earliest times. Good examples are found in Italy, England, the United States, France, Germany, and Constantinople; it has been stated by an acute student of the subject that at present there are more obelisks above ground in Rome than there are in Egypt,² their native land.

The purest type of obelisk, like that of Heliopolis, is a monolith tapering from base to apex, its height being about 10 times the length of one side of the base. In true obelisks all four faces are plain surfaces equal in width, although sometimes as observed by Verninac at



FIG. 13.—Obelisk, Heliopolis, Egypt.

Karnak there is a marked entasis or convexity similar to the curves in pediments of temples. When obelisks bear hieroglyphics they are regularly arranged in three rows reading from above downwards, the oldest vertical row being always in the middle.

The original inscriptions on some obelisks have been erased and new ones added, a method adopted by some rulers to express their consummate egotism.

¹ The obelisk has the three essential qualities indispensable in architecture as pointed out centuries ago by Vitruvius. It has *firmitas*, *utilitas*, and *venustas*—stability, utility, beauty.

² The largest number of obelisks found in one place in Egypt was 10 or more, some in fragments (Ebers says 12; Fergusson 13) at San in the Delta, the Zoan of the Bible (Brugsch's Egypt).



FIG. 14.—Temple and obelisk, Karnac, Egypt, photograph from Lekejian.

The various Egyptian obelisks not only vary slightly in proportions but also in decorations: some have pictures and inscriptions, others not. There is a variety in mounting; thus, the obelisk of the Piazza del Minerva in Rome and one at Catania in Sicily are carried on the backs of stone elephants. Supporting the corners of Cleopatra's Needle now in Central Park, New York, were bronze props representing crabs, which probably belonged to a later cult and were placed under this monolith when it was first moved and set upright in Alexandria.

Egyptian obelisks, as those of Karnac (Thebes), commonly stood in pairs before the gates of the temples and were made of hard stone obtained from quarries at Syene, from which fact the word syenite has come to designate this geological formation. They commemorate the deeds of rulers whose cartouches they bear, accompanied by invocations and grandiloquent references to the mighty deeds of the builders, or subsequent rulers.

The prostrate obeliscoid column of Begilg near Crocodilopolis, in the fertile valley of Fayûm, differs in the shape of its shaft and form of the apex from the others. Its sides are unequal and bear representations of beings¹ formerly worshipped. Its top is rounded, deeply grooved across the middle, and the sides are of unequal breadth. From an inscription on the narrow sides, as translated by M. Chabas, and as interpreted by the practices of native women about its fallen fragments, one is led to regard this obelisk as somewhat different from the majority of commemorative monuments. It is still regarded in the same light as the Phœnician monoliths known as *baetylia* that are found on both shores of the Mediterranean from Asia Minor to Spain and Morocco.

Many theories have been framed to explain how these obelisks were quarried. A large specimen still remaining in place in the quarries at Syene is attached to the rock by one side, the other three sides having been fashioned into shape. It is supposed by some authorities that the form of the obelisk was first marked out on the surface by cutting a groove, and that the rock was cracked by first building fire on it, after which the ashes were swept away and water poured into the groove—a method still used at the present day by the East Indians. Other authorities have supposed that holes were made at intervals and a series of wedges was placed in these holes

¹ The upper part is occupied by 5 vignettes representing the king Usertesen I, before 10 pairs of divinities, 5 on the right and 5 on the left.

and thus the stone was cracked off.¹ Having been quarried the obelisk was dressed and inscribed, after which it was moved to its future home. The means by which it was transported on rafts are known, but how the great weight was set on end after the obelisk had been brought to its future site is as yet not clear.

It would seem that the meaning of the Egyptian obelisks would be revealed by the inscriptions they bear on their sides. While this might be expected, unfortunately there is some lack of uniformity in the translation of those inscriptions, although all agree they contain arrays of grandiloquent titles and exalted references to attributes of the Pharaohs, indicating that they serve as memorials and were erected in commemoration² of rulers or events.

It is instructive for comparisons to pass to a consideration of commemorative objects like Alaskan totem-poles made of wood and those of New Zealand, where the same idea has been executed in both wood and stone. Lieutenant Meade, in an interesting work entitled "A Ride through New Zealand," describes a trilithon consisting of two perpendicular blocks of stone about 25-30 feet high supporting a horizontal one about half as long again. In the center of the latter



FIG. 15.—Monolith, Abyssinia, from Bent.

¹ The great Seringapatam obelisk erected by Hindoos in memory of Josiah Webbe, in 1805 was split off with iron wedges as described by Col. Wilks (Edin. Philos. Trans., Vol. 9).

² Pompey's Pillar, a shaft 88 feet 6 inches, according to an inscription was erected at Alexandria in Egypt in honor of the Emperor Diocletian. Its monolith measures 69 feet.

is a circular hollow or basin that the natives call the "kava bowl" of the gods or giants. The New Zealand totem-pole like that of our Northwest Coast was commonly carved in wood, but the same idea was expressed here as in other parts of Polynesia by great stones often uncut.

As we depart from the Nile, the home of the obelisk, southward into Abyssinia, we find representations of the obelisk of somewhat different forms and probably of different development. The main difference outside of the form appears to be the absence of inscriptions and a departure from the square section with equal faces.

The best Abyssinian obelisks would seem to represent sacred buildings, or sun houses consecrated to Baal, being connected with sabeism or sun-worship, a pagan cult that antedated the introduction of Christianity into Abyssinia, but which has left in that country several architectural survivals, among which may be mentioned circular churches with doorways at the cardinal points, and ceremonial rites as dances before the church altars.

It is almost impossible, indeed not necessary, to enumerate or describe all the monoliths of Abyssinia. The type is a characteristic one. Bent¹ estimates that there are 50 of these stones standing in the holy city, Aksum, alone, and Bruce says of the Aksum pillar stones:

In one square there are 40 of these obelisks, none of which have any hieroglyphs. One large specimen is still standing, but there are two others still larger that have been broken in falling. These obelisks are constructed of one piece of granite, and on the top of that which is standing there is a decoration somewhat Greek in appearance, that is exceedingly well carved. Below this apical ornamentation there is carved on the surface of the stone a door-bolt and lock, as if to represent an entrance into a rear room. The form of the lock and bolt resemble those used in Egypt and Palestine at the present day.

One instructive fact about the Aksum obelisks is that they present all varieties of form, from the rude unhewn stone to a highly finished obelisk with polished surface. The simplest form is a monolith set on end, and an intermediate stage of the series is represented by a squared natural rock with several notches on the corners or holes cut in the angles or on the faces to indicate floors or beams. A still more complicated form has four bands and accompanying circles supposed to represent the end of rafters cut in relief, and the most highly real-

¹ J. Theodore Bent. *The Sacred City of the Ethiopians*, London, 1893.

istic represents the wall of a many-storied house, each having a sham door cut on the face of the obelisk, and in one instance with lock and bolt carved in relief.¹ Instead of having a pyramidion on top, as in the Egyptian obelisk, we find some of the Abyssinian obelisks tipped with a round projection with flat front and rear faces on the rim of which are still visible the holes for pegs by which a metallic disk, like those



FIG. 16.—Monolith, Abyssinia, from Bent.

used in sabeism or sun-worship, was riveted. Bent finds at their bases remains of benches or tables on which he supposes sacrifices were formerly made in further support of the theory that these obelisks were devoted to the solar cult.

The monoliths of Russia, commonly called babas, or old women, grannies, may be classified as colossi and are probably of Mongol

¹ The obelisk in this example represents, symbolically the habitation, the temple proper, or adytum, Beth-el, or House of God.

origin, being found from Mongolia to the banks of the Danube. They represent a connecting link between the statue menhirs or engraved dolmens of Aveyron, south France, the "steinfiguren" of Germany and the colossi of China, to all of which they are akin. They show that monoliths and colossi are the same in intent, and that the basal



FIG. 17.—Monolith, Aksum, Abyssinia, from Bent.

principle of both is ancestor worship or the almost universal cult of the dead.

The latest historical and comparative study of these rude statues has been published by Joseph Castagné,¹ who has figured not only the babas or "grannies" of the steppes of Russia, but also a few similar images from Mongolia. Some of the babas of Orenburg preserved in the museum of that place are of considerable size, one being

¹ Joseph Castagné, Bull. et Mem. de la Soc. d'Anthropologie, No. 45, 1910.

mentioned as 10 feet in height. These babas are almost always found associated with burial tumuli, and are interpreted by Castagné as examples of the Roman custom of carrying wax masks of the deceased, or images of the defunct, their presence being survivals of the



FIG. 18.—Babas, grannies, Siberia, from Castagné.

cultus of the dead that had a real and serious meaning to primitive man.

COLOSSI

The highest expression of the megalithic art appears in great single stones carved into life forms known as colossi, of which the statues of Memnon are good examples. In these monoliths man attempted to

express his ideas of the greatness of his gods¹ or ancestors by the mammoth size of his idols.

We detect very clearly in the colossus the influences of geographical environment. They can be traced to a sedentary life, for a wandering people is not one that produces great sculptures. The dependence of the sculptor on available rock formation has long been recognized, for the production of a colossus of great size is impossible unless a certain kind of rock is available for that purpose. Colossi were made in the most advanced stage of the megalithic epoch and are abundant in both the old and new worlds.²

With exception of the sculptured menhirs, "steinfiguren," and babas, European colossi are small and inconspicuous. Monolithic colossal statues are not characteristic of ancient Greek, Etruscan, or Roman art in Europe, but occur in Asia,³ northern Africa, Central America, and Polynesia.

We find some of the largest known colossi in Egypt where the megalithic age reached its highest development. The great sphynx at Ghizeh, the statue of Rameses II⁴ and the enormous seated figures of the vocal Memnon, at Thebes, one of which is still a monolith, attest the barbaric power of the ancient Egyptians in this line of expression.

¹The area immediately surrounding the colossus is generally without roof, open to the sky—a characteristic feature of various forms of monoliths. The development of the enclosure where the idol stands into a temple led to a diminution in size of the colossus and a predominance of accessories. The idol being a symbol, the shrine or temple is symbolically the habitation of the god, but the main structures of the more complicated temples are elaborations of entrances and porticoes. Very diverse structures are called temples; the Yucatec sacrificial pyramid has little in common with the palace temples of Egypt and Assyria. Some of the Abyssinian obelisks have the house, as well as the disk, of the sun (Baal) upon it.

²In modern times we find allegorical figures, as the statute of Liberty at the entrance to New York harbor, that of Walhalla at Ratisbon, Bavaria, or the statue of Ariovistus, Germany, taking a colossal form. While the religious feeling is absent the commemorative element still survives, and is expressed in these and many other sporadic instances that might be mentioned.

³The terrace on which the temple (of Baalbec) stands is formed of stones of enormous magnitude; at the northwest angle are three stones, two of which are 60 feet, and the third 62 feet 9 inches in length. Hodder M. Westropp, *Handbook of Archaeology*, 1867.

⁴This stupendous statue now in fragments measured 22 feet 4 inches across the shoulders. Sir G. Wilkinson estimated that the whole mass entire weighed 887 tons.

The Babylonians and other ancients of the Euphrates valley were not inferior to the Egyptians in the production of enormous colossi, while the monolithic figures of Buddha scattered through India, Ceylon, Java, China, and elsewhere express the same feeling of enormous or ponderous power controlling the mind of a people dominated by a like consciousness.

In the buried cities of Ceylon there are many monoliths and colossi of Buddhas. The interior of the first temple of Dambulla contains



FIG. 19.—Great sphynx, Ghizeh, Egypt.

“the gigantic recumbent figure of Buddha, which together with the pillow and couch on which it rests, is cut out of the solid rock, and measures 47 feet in length.”¹ “The reclining figure of Buddha,” says Burrows in his description of Gal Vihara (rock temple) of Ceylon, “is by far the finest of the three. It measures 46 feet in length and has suffered little from the ravages of time.”

The colossi of China are best illustrated by the stone figures lining the road or dromos to the tombs of the Ming dynasty, about 40 miles north of Peking, recalling the avenue of colossal sphinxes in Egypt. These huge images take the forms of men, griffins, elephants, camels,

¹ S. M. Burrows, *The Buried Cities of Ceylon*. Colombo, 1905.

and turtles, 32 in number, arranged in pairs; one of the latter having an obelisk on its carapace reminds one of the elephant bearing an obelisk now in the Piazza del Minerva at Rome, and can be traced directly to Mongol influences, although in southern China where it is not as strong, giant images of Buddhas are frequently encountered.



FIG. 20.—Elephant colossus, Ming Tombs, China, photograph from F. B. Wright.

Historical monoliths like the Nestorian tablet of China set up in 781 A. D., or that erected by the Japanese in commemoration of the visit of the U. S. squadron to Japan under Commodore Perry, the Tomb of Midas and other massive rocks bearing inscriptions claim attention in our studies of the megaliths.

Boundary stones are repeatedly mentioned in Biblical writings. Both the Romans and Chinese erected stone pillars commemorative of battles, or memorials of famous emperors or generals.

The consideration of the great monoliths of the Pacific islands naturally lead us to the architectural wonders of Java, or to the great temples which arose in that island under Hindoo influences. In the



FIG. 21.—Elephant colossus, Ming Tombs, China, photograph from F. B. Wright.

silent jungles of this island stand the massive ruin of Chandi-Sewa, the "thousand temples," adorned with figures constructed of solid stone. Some of these ruins, as that of Chandi-Kali-Bening, surpass in size those in India itself and the magnitude of the great temple of Boroboda with its triple circle of towers compares favorably with the temples of Luxor and Karnac. The human labor necessary to

construct these sculptured hill temples of Java is almost incomprehensible. No other people have excelled the builders of these tremendous temples in their constructive skill and power of work.

It would be quite impossible to embrace in a few remarks any adequate account of the many colossi found in these Javanese temples, nor will a few examples, however fitly chosen, aid in your appreciation of them. I cannot in such a dilemma do better than refer you to the writings of Raffle and the magnificent plates of the temple of Boro-Bodo (Bara-Budur) published by the Minister of the colonies



FIG. 22.—Camel colossus, Ming Tombs, China, photograph from F. B. Wright.

of the Netherlands. Here we find massive megalithic architecture in all its grandeur, relieved with a profusion of detail, decorated with an artistic embellishment nowhere else duplicated in the megalithic age. These Javanese temples, as pointed out by W. H. Holmes, suggest the great prehistoric terraced sacred buildings of Central America,¹ and yet they are so characteristic of East Indian art that they

¹ A general view and ground plan of Boro-Boda (Bara-Budur), a typical example of these Javanese temples, shows a rectangular terraced structure with niches for sitting figures, like Papanla in Mexico, the whole covered by a cupola 52 feet in diameter surrounded by smaller cupolas. Like the topes or dagobas of Ceylon this building was for the enshrinement of relics rather than a temple in the Greek or Egyptian sense of the term.

stand out as a distinct architectural type. The mind of man was in both instances under the influence of an identical thought, environment furnishing different materials for the expression of that thought.



FIG. 23.—Colossus of soldier, Ming Tombs, China, photograph from F. B. Wright.

The existence of colossi on Easter Island, one of the most isolated islands of the Pacific Ocean, so far from all other monumental works of magnitude, is one of the archeological enigmas. Here and there on Pacific islands there are stones that may be called monoliths, but the images of Easter Island surpass them all in size and importance.

The latter are thus described in a report on a visit to this island in 1876 by Paymaster William J. Thomson,¹ U. S. Navy:

In order to form an estimate of the magnitude of the work performed by the image-makers, every one on the island was carefully counted, and the list shows



FIG. 24.—Brambanan temple façade, Java.



FIG. 25.—Boro-Bodo temple façade, Java.

a total of 555 images. . . . Of this number 40 are standing inside of the crater . . . The largest image is in one of the workshops in an unfinished state and measures 70 feet in length; the smallest was found in one of the caves and is a

¹ Te Pito Te Henua, or Easter Island, by Paymaster William J. Thomson, U. S. N., Report U. S. National Museum for 1889, p. 497.

little short of 3 feet in length. One of the largest images that has been in position lies near the platform which is ornamented, near Ovahe; it is 32 feet long and weighs 50 tons. . . .

The images were designed as effigies of distinguished persons and intended as monuments to perpetuate their memory. They were never regarded as idols, and were not venerated or worshipped in any manner. . . .

The work of carving the image into shape and detaching it from the rock of which it was a part, did not consume a great deal of time, but the chief difficulty was, in the absence of mechanical contrivances to launch it safely down the slope of the mountain and transport it to a distant point. It was lowered to the plain by a system of chocks and wedges, and the rest was a dead drag accomplished by main strength. A roadway was constructed over which the images



FIG. 26.—Monoliths and images (fallen) Easter Island, from Thomson.

were dragged by means of ropes made of indigenous hemp, and sea-weed and grass made excellent lubricants. The platforms were all built with sloping terraces in the rear, and up this incline a temporary road-way was constructed of a suitable height, upon which the statue could be rolled until the base was over the proper resting place. The earth was then dug away to allow the image to settle down into position, the ropes being used to steady it in the meantime. . . .

The fact that these huge monoliths rise from platforms recalls conditions in South Africa already considered where monoliths and gigantic birds stand on similar great stone platforms.

There is abundant evidence that Mr. Thomson has correctly interpreted the Easter Island colossi as "effigies of distinguished persons . . . intended as monuments to perpetuate their memory." Investi-

gation of the monoliths and colossi of other Polynesian islands points to the same conclusion regarding them.

Wherever we find the megalithic pillars in the Pacific we find them connected with a cult of the dead, and as we pass westward across the Pacific to the architectural wonders of Java where the stone working becomes more elaborate we find the same connection. The megalithic monuments of Polynesia have been repeatedly likened to the cromlechs and alligned stones of Stonehenge in England and Carnac in Brittany.

In the Penrhyn Islands there are small circles of stone described by Mr. Lamont that enclose an area some hundred yards square, "a sort of Stonehenge in a small way," and there are megalithic tombs in the Tonga Islands described in the *Natural History of Man* by Mr. Wood. The Australians likewise had stone circles with an upright stone slab in the middle.

In the Sandwich (Hawaiian) Islands we find the megaliths limited to walled enclosures like the pagan temple at Waikiki, but in Rapa-titi there are massive stone forts. In the Friendly Islands, near the ancient metropolis of Tongatabu, there are 19 truncate pyramids, the stones composing which average 18 feet long by $5\frac{1}{2}$ feet high and 3 feet thick weighing 20 tons each. Near these pyramids is a trilithon the uprights of which are 14 feet high, 8 feet wide and nearly 4 feet thick, weighing 15 tons, the cross-piece being somewhat smaller. They were transported over 3 miles by savages supposed to be ignorant of mechanical appliances.

In the Ladrões there are rows of stone columns, called the "houses of the ancients"; and massive walls built of basaltic prisms, 300 feet long and 35 feet high, exist in Ponape of the Caroline group.

Of the many archeological problems presented by the islands of the Pacific none are more instructive than the great heathen temple 51 feet by 39 feet in size, situated in a secluded valley in the center of Opala in Samoa. The adjacent tombs of the Tonga chiefs on these islands are marked with monoliths of enormous size.

NEW WORLD MEGALITHIC EPOCH

Mr. E. G. Squier in a brief pamphlet, "The Primeval Monuments of Peru compared with those in other parts of the World," published in the *American Naturalist* in 1870, arrived at the far reaching truth that megalithic monuments "seem to have been the spontaneous productions of the primitive man in all parts of the world, and not neces-



FIG. 27.—Stone image from Easter Island, in U. S. National Museum.
Photograph by René Bache.

sarily nor even probably derivative." Other writers before and since him have recognized that truth, but no one had previously followed the resemblance of New and Old World megalithic structures.

Only a few of the more advanced people of America show evidences of the megalithic phase of culture, but the races dwelling on the Cordilleras of South America and those inhabiting the lowlands of



FIG. 28.—Stela F, Quirigua, Honduras, from Maudsley.

Central America were in this stage of cultural development before the discovery of America by Europeans. The best examples of megaliths occur in Peru, Colombia, Guatemala, Honduras, Mexico, and Yucatan, in all of which countries there are fine examples of both monoliths and colossi. They often bear glyphs or calendar symbols, which are characteristic of the New World as the Egyptian hieroglyphs are of the country bordering the Nile. No satisfactory evidence has yet been brought forward that phonetic writing arose independently on the American continent. The Indians of the terri-

tory of the present United States never developed a megalithic stage, although sporadic instances of natural rocks which have a religious rôle might be mentioned.¹

Unworked monoliths or giant natural stones set upright singly or in numbers are found in both Central and South America, one of which from Argentina is as high as the head of a man on horseback.²

With few exceptions where we find monoliths and colossi, cyclopean walls likewise occur, evidently intended to express the same consciousness of power. This is particularly true of the Incas and pre-Incan races who handled the largest blocks of heavy stone and fitted them together with an accuracy that has astonished everyone from the time of their Spanish conquerors to the present.

We find in various parts of tropical America circles and alignments of monoliths recalling menhirs or cromlechs of the Old World, and called Indian corrals and ball courts. One of the largest and best known of these described by Schomburgk,³ near San Juan de Maguana in Hayti, was formed of granite stones each from 30 to 50 pounds in weight and arranged in a ring measuring 2,776 feet in circumference. In the center of this dolmen was a rock over 5 feet high supposed to be an idol. Similar enclosures also with central idol found in Porto Rico were described by Dr. A. Stahl and others.⁴

¹ Such natural monuments as the Snake Rock at Walpi or the Twin pinnacles at Tayallone, near Zuñi, or innumerable others which are mentioned in the folk-lore tales of Indians are not here considered, although like all monoliths they have a religious significance.

The stone "mountain lions" of Cochiti are sometimes rightly called colossi. Mr. J. N. B. Hewitt has called my attention to the following from the "Histoire du Canada," by Sagard Teodot, which explains itself:

Ils m'ont montré plusieurs puissans rochers sur le chemin de Kebec, ausquels ils croyent presider quelque esprit, & entr'autres ils me monstrerent un à quelque cent cinquante lieuës de là, qui auoit comme une teste & les deux bras esleuez en haut, & au ventre au milieu de ce grand rocher il y auoit une profonde cauerne de tres-difficile accès. Ils me vouloient persuader & faire croire à toute force avec eux, que ce rocher auoit esté autrefois homme morte comme nous, & que esleuant les bras & les mains en haut, il s'estoit metamorphosé en cette pierre, etc.

² See charts; Las Viejas Razas Argentinas. Felix Fuertes and Carlos Bruschi. In the explanatory text occurs the following quotation that reminds one of batcys and similar structures in the West Indies: "Enciertos localidades se han encontrado piedras disquetas en circolo y paredes quisa in fin religioso."

³ Sir Robert Schomburgk, *Ethnological Researches in Santo Domingo*. Report British Association, 1851.

⁴ A. Stahl, *Los Indios Borinqueños*, Puerto Rico, 1889. J. Walter Fewkes, *Aborigines of Porto Rico and Neighboring Islands*, 25th Rept. Bur. Amer. Ethnology. 1907.

Peruvian and Bolivian "sun-circles," elsewhere mentioned, are structurally comparable with stone circles in Taumalipas and Vera Cruz, except that they approach the circular rather than rectangular forms.

As Egypt is the native land of the Old World obelisk and colossus, so Central America is the home of the colossi and commemorative monoliths of the New. The American counterpart of Egyptian obelisks are the so-called stelæ of Tikal, Quirigua, Ocosingo, Copan, and the ruins of the valley of the Ucimacintla, in Honduras.

According to Mr. C. P. Bowditch¹:

"Monoliths are scattered all over the northern and eastern slopes of the Cordilleras as they run through the State of Chiapas in Mexico, and through the Republic of Guatemala into Honduras . . . and in the whole extent of the peninsula of Yucatan. . . . The monoliths may be roughly divided into two kinds, according to their shape. One kind (called stela, plural stelæ) is tall, measuring in one case 28 feet in height, while they are not over 4 feet in width or depth. The others are low and take various forms, being square, oblong, or round as a rule, though some are carved in the shape of an uncouth animal."



FIG. 29.—Stela B, Copan, Honduras, from Maudsley.

Elsewhere Mr. Bowditch, regarding monoliths, calendaric or hieratic in character, quotes Landa, who states "that there were found in Mayapan seven or eight stones ten feet in length, unworked and with several rows of these (hieroglyphic) characters, and that the Mayas were accustomed to raise stones like these every 20 years." He likewise quotes Cogolludo, who says "that the Mayas counted the

¹ C. P. Bowditch, *The Numeration, Calendar Systems and Astronomical Knowledge of the Mayas*, Cambridge, 1910, p. 6.

ages by 20 years, which they call *katun*, and that they placed one worked stone on another on the walls of their temple at the end of these periods, as he himself has seen."

The stelæ of Copan and other related Central American ruins have carved upon them representations of men or women wearing sym-



FIG. 30.—Stela C, Quirigua, Honduras, from Maudsley.

bolic ceremonial paraphernalia, and like the Egyptian statues of Rameses are not intended for divinities but represent priests wearing symbols or headdresses characteristic of gods. These American monoliths or stelæ, like Egyptian obelisks, bear vertical rows of lines of hieroglyphs; they generally stand in front of temple mounds or on ceremonial plazas, in much the same relative position as obelisks, indicating by the position, general form, and accompanying glyphs that they are both memorial and religious in character.

The great animal effigies of the Lake of Menagua in Nicaragua, described by Dr. Carl Bovallius, belong to the group of monoliths architectural rather than religious in character, being intermediate between unworked monoliths and colossi. Perhaps the best known Aztec megalithic statue is that called Huitzilopochtli, the God of War, which Mr. Payne,¹ with good reason, identifies as the Corn Snake goddess, a colossal representation of an effigy made of corn stalks used in ceremonial dances. The great stone tiger found a short time ago in excavations made in a street back of the cathedral near where the



FIG. 31.—Turtle, Quirigua, Honduras, from Maudsley.

old temple of the Aztecs once stood in Mexico City, is a colossus, and the giant serpent's head, part of the ancient wall of the temple now set in the foundation of an adjacent modern building, belongs to the same category.

Although expressions of the megalithic consciousness were less pronounced among the Totonac and Huastec people of the coast of the Gulf of Mexico than in Central America, or the valley of Mexico, statues from Nico Viejo, near Jalapa in the state, Vera Cruz, and the neighborhood of Tampico, in Taumalipas, have been figured in the speaker's account of the antiquities of eastern Mexico.²

¹ Edward John Payne, *History of the New World called America*, Vol. I, p. 470. Oxford.

² Twenty-fifth Annual Report Bureau of American Ethnology.

No colossi have been reported from the Gulf coast north of Taulmalipas, but the pillar stones in rude human form, like those of the Huastecs,¹ occur from Cuba to St. Vincent, West Indies, showing the presence of the monolithic feeling among the former people of the Antilles, as well as the Spanish Main.

Our studies of megaliths in America would be incomplete were we to neglect the cyclopean buildings of Peru, with monoliths so remarkable that they have excited the imagination of all travellers. Considerable literature² exists regarding these structures; the impression after reading descriptions of them is of great wonder at the magnitude of these buildings.

Mr. E. G. Squier³ has figured and described one of these monuments which he aptly designates the "American Stonehenge":

The temple seems to me to be the most ancient of all the distinctive monuments of Tiahuanaco. The stones defining it are rough and frayed by time. The walls between its rude pilasters were of uncut stones; and although it contains the most elaborate single monument among the ruins, and notwithstanding the erect stones constituting its portal are the most striking of their kind, it nevertheless has palpable signs of age, and an air of antiquity which we discover in none of its kindred monuments. Of course, its broad area was never roofed in, whatever may have been the case with smaller, interior buildings no longer traceable. We must rank it, therefore, with those vast open temples (for of its sacred purpose we can scarcely have a doubt) of which Stonehenge and Avebury, in England, are examples, and which we find in Brittany, in Denmark, in Assyria and on the steppes of Tartary.

¹ Ed. Seler. *Die Alten Ansiedelungen im Gebiete der Huasteca*. Berliner Anth. Gesells., 1888.

The "*Steinfiguren*" figured by Dr. Seler and the rectangular enclosures, *tlachco*, of the Cerro el Cangrejo near Chila, in the neighborhood of Tampico, remind me of the Porto Rican "*batey*" and rude pillar stones of the West Indies. Mr. Joyce has figured a pillar stone in the British Museum said to have come from Nevis in the West Indies, which is a statue comparable with the Huastec, but shows marked old world influences. Mr. Connell of St. Kitts has a similar pillar stone also from Nevis.

² Several writers refer these megalithic monuments to a pre-Incan civilization. Good authorities might be mentioned in support of the belief that the megalithic monuments of Peru belong to different cultures.

³ *Op. cit.* Later authorities, Strübel and Uhle, and Sir Clements Markham, especially the last, have greatly enlarged our knowledge of Incan and pre-Incan megaliths. Some very large rocks at Cuzco are still rough, while the stones at Ollantaytambo are smooth. The monoliths of Abancay and the Cuzco stones are instructive megaliths.

The great monolithic gateway of Tiahuanaco, Peru, is the best known megalith of South America. In describing this structure Squier says:

We must imagine a block of stone, somewhat broken and defaced on its edges, but originally cut with precision, 13 feet 5 inches long, 7 feet 2 inches high above ground, and 18 inches thick. Through its center is cut a doorway, 4 feet 6 inches high, and 2 feet 9 inches wide. Above this doorway and as it now stands on its southeast side or front, are four lines of sculpture in low relief, like the Egyptian plain sculptures, and a central figure immediately over the doorway sculptured in high relief. On the reverse we find the doorway



FIG. 32.—Monolithic gateway, Tiahuanaco, Peru, from Stübel and Uhle.

surrounded by friezes or cornices, and above it on each side two small niches, below which, also on either side, is a single larger niche. The stone itself is a dark and exceedingly hard trachyte. It is faced with a precision that no skill can excel.

Among other examples of South American structures illustrating South American monoliths may be mentioned the sun-circles (*intihuatana*), first described by Squier, of Sillustani and the stone pillars of Hatuncolla, the latter decorated with figures of serpents, lizards, frogs, and elaborate geometrical designs. The sun-circles¹ consist of rings of well-fitted flat stones forming a platform, on the inner edge

¹ The best description of these known to me is found in Bandelier's "The Aboriginal Ruins at Sillustani, Peru" (*American Anthropologist*, Vol. 7, No. 1, 1905). There are a number of sun-circles, less carefully built, on the height called Kajopi, above the village of Huata in Bolivia, according to this authority.

of which are erect uncut stones arranged in ring shape, while in the enclosure thus formed are other upright stones that also show no sign of tools. These sun-circles reminded Squier of megalithic monuments of England and northern Europe, and in certain particulars they recall to my mind the batey¹ or ball courts of the West Indies, Mexico, and Central America.

In the limited time available only a few of many megalithic structures in Peru can be instanced, the list might be much enlarged by



FIG. 33.—Monolithic "gateway," Tiahuanaco, Peru, from Stübel and Uhle.

the addition of monolithic doorways and other examples, but these suffice to show that the erection of megaliths attained a high development in South as in Central America. A people where this power was so highly developed naturally built stones of great size into their temples and fortresses as that of Sacsahuaman, which Squier regarded the greatest specimen of cyclopean style in America. The measurements of the size of the corner-stones of buildings at Cuzco, or salient angles of the component stones of the trinchera-like walls of this fortress are extraordinary; one of the foundation stones is said, by Squier, to be "27 feet high, 14 broad, and 12 in thickness."

¹Compare with Squier's cut of these sun-circles the ball court or batey described by Schomburgk, in Santo Domingo, West Indies.

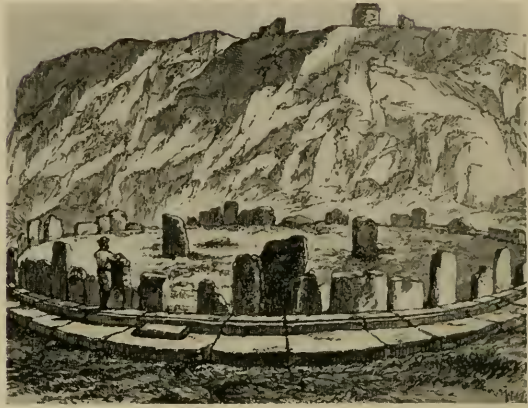


FIG. 34.—Sun-circle, Sillustani, Peru, from Squier.



FIG. 35.—Colossal wall, Cuzco, Peru, from Squier.

The plain near Acora, Peru, is covered with many rude monuments in the forms of circles and rectangles constructed of unwrought upright stones, which Squier finds "almost identical" with cromlechs of Europe, and "might be transferred to Brittany or Wales and pass for structures contemporary with the thousand rude monuments of antiquity found in those regions."

The long, and at times seemingly tortuous, trail we have followed has led the speaker to the following generalization. Although the megaliths are among the oldest buildings or architectural structures erected by man, all, from the simplest to the most complex, belong to

a series wholly distinct from that including habitations of the living. From the rude uncut monoliths to the perfection of architectural expression, the Parthenon, there are many and varied forms of religious edifices, temples, and shrines, but none of them were erected primarily as human residences. Man has never built as good a dwelling for himself as for his ancestors or gods. Man's noblest architectural efforts are not for abodes for himself while living, but in response to



FIG. 36.—Corner of massive wall. Cuzco, Peru, from Squier.

a striving for ideals far higher than personal vanity or shelter for his family. Even dwellings of despots shrink into insignificance in comparison with the creations of a race influenced by the highest religious feeling. The habitations of the builders of the great temples whose ruins astound us by their magnitude, are forgotten; they do not belong in the same series as the megaliths we have studied; they were built by individuals for shelter and personal comfort. Megalithic monuments are expressions of a community feeling influencing man to cooperate for ideals higher than self and should be judged by a very different standard. Temples are not modified human dwellings, but evolutions of the same religious ideal which led man in early times to erect monoliths and colossi.

After what has been said on the geographical distribution of monoliths we may dismiss without serious consideration the theory that they were made by one and the same great race. Equally unattractive is the specious corollary that migrations of culture, save within limits, can be traced by them.

They represent a phase of religious thought, of spontaneous origin almost identically expressed. Commonly associated with tombs or burial places, they are almost universally connected with the cult of the dead. They are both cultural and religious, or expressions of a phase of racial feeling at a time before the two had been differentiated.

In closing it is well to emphasize the main object of the preceding pages and to point out that monoliths and colossi are geographically widespread and not limited to one continent or to any one race of man.

They express a profound racial self-consciousness of power amounting to a religious feeling; incidentally as in arts,¹ institutions, beliefs, and languages, environment furnishes material for or modifies the expression of this consciousness and stimulates endeavor, but culture is due to mental efforts to overcome environment by invention.

If you will bear with me for a few moments longer I will close with a plea for the comparative method of study in culture history. The objection that the existence of megalithic structures with like form and meaning in both the Old and New Worlds does not indicate derivation of one from the other is a lame argument against the use of the comparative method of discovering what has caused these resemblances. The speaker would heartily agree that likenesses in the megalithic habit do not indicate identity of culture, but he believes that these resemblances have a deep significance which comparisons may reveal.

As is apparent to those familiar with the literature of archeology, few new facts are here added to our knowledge of great stone monuments, nor is it claimed that the comparison of monoliths of the Old and New Worlds is an original thought. An attempt has been made to show, by a comparison of similar stone objects, that there is a unity in mental action among very different races of man, and that this similarity, modified somewhat in expression by geographical environment, is an important factor in human history.

¹ Of late the term "material culture" is commonly used by ethnologists in a rather loose way, apparently embracing all material objects characteristic of culture. This is a convenient term, but the intrinsic association of religion and culture cannot be lost sight of in studies of human expression.