

PART III.

VIEWS CONCERNING THE SIGNIFICANCE OF CUP-SHAPED AND OTHER PRIMITIVE SCULPTURES.

In a preceding section of this essay I have described the cupped granite boulder, called the Balder Stone, near Falköping, Sweden. As stated, it was first brought into notice by Professor Nilsson, who thinks it served in the worship of Baal as a sacrificial altar, the cup-shaped cavities of which were designed to receive the blood of victims. The cups on the Willfara slab (Fig. 23), he believes, were excavated for the same purpose. We have also seen that he ascribes the introduction of bronze in the North of Europe to Baal-worshipping Phœnicians, who, according to his view, had established factories or settlements in those parts, for the purpose of trading with the natives. He considers the sculptured concentric circles in general as emblematic of sun (or Baal)-worship, drawing at the same time attention to their similarity to ornaments seen on weapons and other objects of the bronze age and even of the early iron age. In order to show by what mode of reasoning Professor Nilsson was led to these conclusions, it will be necessary to devote some space to a consideration of his remarkable work on the bronze age, in which his views are laid down. Yet, if I were to give a résumé of its contents, and comments thereon, I would enter upon a task most ably performed by Sir John Lubbock, and I therefore quote his concise observations in full:—

“Professor Nilsson’s arguments,” he says, “may be reduced to seven, namely, the small size of the sword-handles, bracelets, etc.; the character of the ornaments on the bronze implements; the engravings in bronze-age tumuli; the worship of Baal; certain peculiar methods of reaping and fishing; and the use of war-chariots.

"The implements and ornaments of bronze certainly appear to have belonged to a race with smaller hands than those of the present European nations; the ornaments on them are also peculiar, and have, in Professor Nilsson's opinion, a symbolic meaning. Although the great stones in tumuli attributed to the bronze age are very seldom ornamented, or even hewn into shape, still there are some few exceptions; one of these being the remarkable monument near Kivik in Christianstad. From the general character of the engravings Professor Nilsson has no hesitation in referring this tumulus to the bronze age, and on two of the stones are representations of human figures, which may fairly be said to have a Phœnician or Egyptian appearance.

"On another of the stones an obelisk is represented, which Professor Nilsson regards as symbolical of the sun-god;* and it is certainly remarkable that in an ancient ruin in Malta, characterized by other decorations of the bronze-age types, a somewhat similar obelisk was discovered; we know also that in many countries Baal, the god of the Phœnicians, was worshiped under the form of a conical stone.

"Nor is this, by any means, the only case in which Professor Nilsson finds traces of Baal-worship in Scandinavia. Indeed, the festival of Baal, or Balder, was, he tells us, celebrated on Midsummer's-night in Scania, and far up in Norway, almost to the Loffoden Islands, until within the last fifty years. A wood fire was made upon a hill or mountain, and the people of the neighborhood gathered together, in order, like Baal's prophets of old, to dance round it, shouting and singing. This Midsummer's-night fire has even retained in some parts the ancient name of 'Baldersbal', or Balder's fire. Leopold von Buch long ago suggested that this custom could not have originated in a country where at Midsummer the sun is never lost sight of, and where, consequently, the smoke only, not the fire, is visible. A similar custom also prevailed until lately in some parts of our islands. Baal has given his name to many Scandinavian localities, as, for instance, the Baltic, the Great and Little Belt, Belteberga, Baleshaugen, Balestranden, etc.

"The ornamentation characteristic of the bronze age is, in the opinion of Professor Nilsson, decidedly Semitic rather than Indo-European. He

* See Fig. 24 of this publication.

lays considerable stress on two curious vase-carriages, one found in Sweden and the other in Mecklenburg, which certainly appear to have been very like the 'vases' made for Solomon's temple, and described in the first Book of Kings. Finally, he believes that the use of war-chariots, the practice of reaping close to the ear, and a certain method of fishing, are all evidences of Phœnician intercourse.

"Professor Nilsson is so great an authority, as an archæologist his labors have contributed so much to place the science on a sound basis, that his opinions are deserving of the most careful consideration. Nor can they fairly be judged by the very short abstract which has been given above, as many of his arguments must be followed in detail before they can be properly appreciated. That the Phœnicians have left their traces in Norway is, however, in my opinion, all that can fairly be deduced from the facts on which he relies, even if we attribute to them all the significance claimed for them by him. Further evidence is required before it would be safe to connect them with the bronze age. As regards the smallness of the hands, we must remember that Hindoos share this peculiarity with Egyptians. This character is therefore not less reconcilable with an Indo-European than with a Phœnician origin of the bronze-age civilization.

"There are three strong objections to the theory so ably advocated by Professor Nilsson. The first is the character of the ornamentation on the bronze weapons and implements. This almost always consists of geometrical figures, and we rarely, if ever, find upon them representations of animals or plants; while on the ornamented shields, etc., described by Homer, as well as in the decoration of Solomon's temple, animals and plants were abundantly represented. Secondly, the burial-customs of the Phœnicians differed altogether from those of the bronze age, and although it may be said that those who attribute the presence of bronze in Northern and Western Europe to Phœnician commerce, do not necessarily, on that account, assume that the population of those countries became Phœnician, still in this case the hypothesis explains the presence of bronze, but not the bronze age, of which the use of bronze, though the most striking, is by no means the only characteristic. Thirdly, the Phœnicians, as far as we know them, were well acquainted with the use of iron; in Homer we

find the warriors already armed with iron weapons,* and the tools used in preparing the materials for Solomon's temple were of this metal. It is very remarkable that scarcely any traces of ancient commerce have been found in Cornwall, and it is much to be regretted that our museums possess so few specimens of Phœnician art. When these wants shall have been supplied, as we may hope that ere long they will be, there is no doubt that much light will be thrown on the subject."†

Professor Nilsson, I may add, finds distinct traces of the Phœnicians in Ireland, which country he visited in 1860, with a view to examine its antiquities. He ascribes to that enterprising people the cairns of Dowth and New Grange, the chambers of which show sculptured figures (zigzags, wheels with four spokes, etc.) resembling those on the slabs of the Kivik monument. He lays particular stress on the fact that the custom of lighting a Midsummer's-night fire, and of dancing around or jumping through it, was still in vogue among the Irish until within a recent period. This ceremony, called *Balstein* by the people, has been abolished through the efforts of the clergy, who were desirous of putting an end to the excesses arising from the practice.‡ The structures of Avebury and Stonehenge, in Wiltshire, England, I may further state, are considered by Professor Nilsson as tem-

* There is repeatedly reference made to iron in the Homeric poems (Il. IV, 482; V, 722; XXIII, 826, etc.), and even the hardening of iron by immersion in water is alluded to (Od. IX, 391). Iron is also mentioned by Homer in connection with more precious metals, a circumstance indicative of the value in which it was held. Thus, bronze, gold, and "much-worked" iron—*χαλκόν τε χρυσόν τε, πολύκμητόν τε σίδηρον*—constituted the treasure of Ulysses (Od. XIV, 324). Yet spears, swords, and other weapons used during the Trojan war are described as being made of bronze.

Dr. Schliemann, however, has arrived at different results. In an address delivered at the Eleventh Annual Meeting of the German Anthropological Society, held at Berlin in August, 1880, he expresses himself as follows:—

"I wish it were in my power to prove that Homer was an eye-witness of the Trojan war. Unfortunately I cannot. In his time swords were in general use and iron was known; at Troy swords were as yet totally unknown, and the people had no knowledge of iron. The civilization described by him post-dates several centuries that which was brought to light by my excavations. Homer gives us the legend of Ilion's tragic fate as it was transmitted to him by former bards, and, in doing so, he clothes the tradition of the war and the destruction of Troy in the garb of his own time. Yet he was not without personal knowledge of the localities, as his descriptions of the Troas in general, and of the plain of Troy in particular, are in the main correct."—*Note by C. Rau.*

† Sir John Lubbock: *Prehistoric Times*; New York, 1872, p. 71, etc.

‡ Mr. Holden, of the well-known firm Harvey & Holden, of this city, told me that, in his boyhood, he used to assist in collecting the wood for these fires and in building them. I obtained similar information from other natives of Ireland. However, the custom of lighting fires on Saint John's eve also prevailed, and still survives to some extent, in Germany, France, and other parts of the European Continent.

ples erected by the Phœnicians, and dedicated to the worship of the sun-god.

Nilsson's Phœnician theory has been discussed at great length, and in a scholarly manner, by Professor Simpson, who is very far from sharing his views, and is even inclined to attribute a *Cimbrian* rather than a Phœnician origin to the Kivik sculptures, to which the Swedish archæologist so often refers in his argumentation.* In more recent writings relating to the introduction of bronze in Europe I have not met with allusions to Professor Nilsson's theory, which thus appears to have been abandoned at the present time.† Yet, though the author has failed to convince his fellow-laborers in the field of archæology of the correctness of his views, his work, nevertheless, possesses uncommon merit, on account of the vast amount of research embodied in it, and Miss Mestorf deserves great credit for having translated it into German—a language more generally understood than the Swedish of the original.

As a consequence of the foregoing, it would appear that the Swedish cupped stones were not sacrificial altars serving in the worship of a Phœnician deity; and grave doubts have been expressed by prominent authorities whether cupped boulders were at all used as altars, considering that the cups often occur on perpendicular or strongly-inclined surfaces, and thus could not have served as the receptacles of liquid substances.

In addition to the altar theory, cup and ring-cuttings have, as may be imagined, given rise to a variety of speculations as to the purpose for which they were made. Some of these views, recorded and commented on in Professor Simpson's work, may be presented in this place.

The Rev. Mr. Greenwell, Sir Gardner Wilkinson, Dr. Graves, and others, consider them as archaic maps or plans of old circular camps and cities in their neighborhood, telling possibly of their direction and character. "But I believe," says Simpson, "this idea has now been abandoned as untenable by some, if not by all, of the antiquaries who first suggested it."

"The carvings," Professor Simpson continues, "have been held by some as intended for dials, the light of the sun marking time upon them—or

* Simpson: *Archaic Sculptures*, etc.; p. 81, etc.

† Views similar to those of Professor Nilsson are expressed by Frédéric de Rougemont in "*L'Âge du Bronze ou les Sémites en Occident*;" Paris, 1866.

upon a stick placed in their central cups—and its shadow corresponding with one of the central radial grooves; but they have been found in localities which neither sun nor shadow could reach, as in the dark interiors of stone sepulchres and underground houses. Others have regarded them as some form of gambling table; but they occur on perpendicular and slanting as well as flat rocks; and besides, if such were their use, they would scarcely have been employed to cover the ashes of the dead.

“I have heard them spoken of as rude representations of the sun and stars, and of other material and even corporeal objects of natural or Sabeian worship; but all attempts to connect the peculiar configurations and relations which they show with any celestial or terrestrial matters have as yet confessedly failed. Nor have we the slightest particle of evidence in favor of any of the numerous additional conjectures which have been proposed—as that these British cup and ring-carvings are symbolic enumerations of families or tribes; or some variety of archaic writing; or emblems of the philosophical views of the Druids; or stone tables for Druidical sacrifices; or objects for the practice of magic and necromancy.”

One of Professor Simpson's friends, Mr. Dickson, of Alnwick, in referring to incised stones in Northumberland, “has suggested that these carvings relate to the god Mithras (the name under which the sun was worshiped in Persia); that about the end of the second century the religion of Mithras had extended over all the western empire, and was the favorite religion of the Romans—a system of astrological theology; that in the sculptured Northumberland rocks the central cup signifies the sun, the concentric circles probably the orbits of the planets, and the radial straight groove the way through the sun. In consequence, Mr. Dickson holds these rock-sculptures to be the work of the Romans, and not Celtic—having been cut, he supposes, as emblems of their religion by Roman soldiers near old British camps, after they had driven out their native defenders. But if they were of Roman origin, they would surely be found in and around Roman stations, and not in and around British localities—in Roman graves, and not in old British kistvaens. The fact, however, is that they abound in localities which no Roman soldiers ever reached, as in Argyleshire, in Orkney, and in Ireland. And possibly even most of them

were cut before the mythic time when Romulus drew his first encircling furrow around the Palatine Mount, and founded that petty village, which was destined to become—within seven or eight short centuries—the Empress of the civilized world.”

The idea that the markings should have any bearing on the worship of the reciprocal principles of nature is summarily dismissed by Professor Simpson in a short note on page 80 of his work. He says: “Two archæological friends of mine—both dignitaries of the Episcopal Church—have separately formed the idea that the lapidary cups and circles are emblems of old female Lingam worship, a supposition which appears to me totally without any anatomical or other foundation, and one altogether opposed by all we know of the specific class of symbols used in that worship, either in ancient or modern times.”

This note is thus commented on by Mr. Rivett-Carnac: “I am sanguine that, if the late Sir J. Simpson had seen the sketches of what I have called the ‘conventional symbols’ on the shrines at Chandeshwar, and had been able to compare them with some of the types figured in his work, he might have been inclined to modify the opinion above extracted. The treatment of these symbols is purely conventional, they bear no anatomical resemblance to anything, they are unlike many of the large, well-known, and acknowledged representations of the Mahadeo and Yoni. Still they nevertheless represent the same idea. And here it may be noticed that the same argument of anatomical non-resemblance might be advanced in regard to the well-known representations, common throughout India, of the meaning of which to the initiated there is no doubt at all. To the uninitiated, however, the shapes convey nothing, and I have known cases of Europeans who have been many years in the country, who were quite unsuspecting of what ‘that jew’s-harp idol,’ as they called it, was intended to represent. As the old priest at Chandeshwar said, ‘Those who can afford it, put up a big Mahadeo; those who can’t, put up these slabs.’ And so also with us. The rich relations or friends of the Christian may put over his grave a solid, richly-carved stone cross. The grave of a poor man, if marked at all, has over it perhaps two pieces of wood nailed together in the shape of a cross, or a cross roughly cut on a piece of stone. The Christian church is built

in the form of a cross. In Pandukoli and many other spots the Mahadeo temples are built in the shape of the conventional symbols of that faith.* He then observes that the symbols of the Mahadeo and Yoni can be more conveniently indicated on stone by what may be called a ground-plan than by a section, and refers for illustration to designs accompanying his publication. It would be difficult to find fault with this refutation of Professor Simpson's assertion concerning the character of those symbolic representations.

Professor Simpson himself does not attempt to explain the special significance of the Scottish and English cup and ring-cuttings; but in view of their thoroughly homogeneous character, he considers them as expressive of some religious conception of those who made them—a conclusion hardly admitting of any doubt. On the other hand, he holds that the more complicated carved figures seen on megalithic structures in Ireland and Brittany are, in part at least, of an ornamental character; and this view seems to me equally correct. Indeed, some of the few illustrations of Irish and Breton carvings given in this publication (Figures 12 and 14) present an appearance calculated to corroborate Professor Simpson's opinion.

The learned Scottish author refers the cup and ring-carvings to a remote period of antiquity. "The very simplicity of the cup and circle forms", he says, "is one strong reason for our regarding these types of sculpture as the most archaic stone-carvings that have been left to us" (page 105). He draws particular attention to their precedence of letters and of traditions of any kind, and to the fact that they appear on megalithic monuments erected at a time when metal was not yet in use. Concerning this point he says: "At present I am not aware that within any of the sepulchres, whose stones are marked only with the incised ring and cup-cuttings, any kind or form of metallic tool or instrument has yet been found. Should further and more extended observation confirm this remark, then it will naturally follow that the *commencement* of these sculpturings must be thrown back to the so-called Stone period, or to an era anterior to the use of metals.— I have no doubt, however, that at whatever time the simple cup and ring-sculptures were first begun to be cut, the practice of carving them—if it

* Rivett-Carnac: *Archæological Notes*, etc.; p. 11.

did not initiate in—was at least continued into, and indeed extended during the so-called Bronze era, and perhaps till a later period; for bronze tools and ornaments have occasionally been found in localities in Argyleshire, Northumberland, and elsewhere near to spots where the sculptures exist in unusual numbers; though none yet have been discovered, as far as I am aware, in immediate or direct connection with these carved stones or cists themselves" (pages 119, 120).

Professor Simpson's remarks concerning the race that first introduced the carving of the lapidarian cup and ring-sculptures are of great interest. The earliest really historical records of Britain, he observes, date from the time of Julius Cæsar's expeditions to the island, antedating the Christian era about half a century. At that period the population appears to have chiefly consisted of Celts, with an admixture of Belgian and probably of Ligurian elements. When Scotland was first invaded by the Romans (81 after Christ), the inhabitants made use of war chariots, and, having already passed through the era of bronze weapons, fought in the battle of the Grampian Mountains, in which Agricola defeated the native forces under Galgacus, with huge blunt-pointed swords (*enormes gladii sine mucrone*);* which form of weapon, Simpson thinks, can only be supposed to have been made of iron.

The remarks following next in his work (page 125) are of such striking character that I cannot refrain from quoting them in full. He says:—

"We have no adequate data as yet to fix the date of advent to our shores of the Cymry and Gael, and to determine whether or not they brought along with them, at their first arrival, as some hold, a knowledge of the metallurgic arts. But much evidence has been gradually accumulating of late years to prove that there had existed some pre-Celtic races in Britain. Without venturing in the least to point out all, let me simply note two or three. A race of Megalithic Builders—if we may so call them—who have not left in their sepulchres, and therefore we infer did not possess, in their earlier era at least, any metal tools or weapons, seem to have either preceded the Celts, or to have formed our first Celtic or Aryan wave; and judging from the extent of their remains in massive chambered catacombs

* Tacitus: Vita Agricolæ, XXXVI.

and cromlechs, in numerous cyclopean forts, gigantic stone circles, etc., they must have held the country for a considerable length of time, and overspread the whole of it by the diffusion of their population. From their remains, as left in their tombs and elsewhere, we know that they employed weapons and tools of horn, wood, and *polished* stone; manufactured rude hand-made pottery; had ornaments of jet, bone, etc.; partially reared and used cereals, as indicated by their stone mullers and querns; and possessed the dog, ox, sheep, and other domestic quadrupeds. I do not stop to discuss the various questions whether these Megalithic Builders did or did not hollow out and use the archaic single-tree canoes found on our shores, rivers, and lakes;—whether they were the people that anciently whaled in the Firth of Forth with harpoons of deer-horn, when its upper waters were either much higher or its shores much lower than at present;—whether they or another race built the earliest stone-age crannoges or lake-habitations;—and again whether there was not an antecedent population of simple fishers and hunters, totally unacquainted with the rearing of corn and cattle, and who have bequeathed to archæology all their sparse and sole historic records in casual relics of their food, dress, and weapons buried in heaps and mounds of kitchen-refuse, which they have incidentally accumulated and left upon our own and upon other northern and western coasts of Europe. Whether these formed one, or two, or more races, let me add, that long anterior to the Megalithic Builders there certainly existed in our island a tribe of inhabitants that dwelt, in part at least, in natural or artificial caves, where their bones and their contemporaneous relics have been found; who possessed implements and weapons of stone and flint, but rough, and *not* polished like those of the Megalithic Builders; who seemingly possessed no pottery; who—if we may judge from the want of rubbers and querns to grind corn-food—had little or no knowledge of agriculture; and who lived in those far-distant times when the colossal fossil elephant or mammoth, the woolly-haired rhinoceros, the gigantic cave-bear, the great hyæna, etc., were contemporaneous inhabitants with him of the soil of Britain; when the British lion was a veritable reality and not a heraldic myth; and when possibly England was still geologically united to the Continent, and the Thames was only a tributary of the Rhine.

I am not aware that we have yet sufficient evidence to consider as of the same family with these ancient Cave-men, or as of a race still anterior to them, the Flint-folk of the southern counties of England, whose *unpolished* flint hatchets—besides being found in great abundance on the banks of the Somme and Loire—have been discovered in various parts in the river-drifts of South England, and an excellent specimen of which, along with the bones of an elephant, was dug up, in the last century, from a gravel-pit near Gray's Inn Lane, in the centre of London itself.”*

The question to which of these races of man the first sculpturings of cups and rings are to be referred, is one which, Professor Simpson thinks, cannot be positively answered in the present state of archæological knowledge. He wants further data as to their distribution in Europe and in other parts of the world. Admitting the fact that such carvings were executed by the “Megalithic Builders” of the age of *polished* stone, he thinks the practice may possibly have antedated the era of that race, and, further, expresses his belief in its continuance through the bronze period and even later times.†

Mr. Tate arrives at somewhat different conclusions. He infers from the wide distribution of the cup and circle-carvings over the British Islands “that at the period when they were made, the whole of Britain was peopled by tribes of one race, who were imbued with the same superstitions, and expressed them by the same symbols.” He refers to the invariable association of these carvings with ancient British forts, oppida, villages and sepulchres as an evidence of all having been the work of the people who dwelt in these places, and were buried in these tombs. Though alluding to the existence of ante-Celtic races in Britain, he thinks it may be inferred “that the old remains in Northumberland, the sculptures included, belong to the Celtic race, though they may tell the history of many centuries prior to the Christian era.” The Northumbrian sculptures being executed on sandstone, he does not deny the possibility of their having been carved with stone instruments; yet he is of opinion that metal was known in the district when the sculptures were made, as bronze and copper objects occur

* This often-mentioned specimen, preserved in the British Museum, is figured on p. 522 of Evans's “Ancient Stone Implements, etc., of Great Britain.”

† Simpson: *Archaic Sculptures, etc.*; p. 79-134.

in their neighborhood. In North Northumberland, indeed, considerable numbers of bronze celts have been discovered, and also bronze daggers, spear-heads and swords. Mr. Tate further refers to querns taken from some Northumbrian forts, and made of hard, untractable porphyry, which, he believes, could not have been fashioned by any stone tool, and he therefore argues that the Northumbrian sculptures generally were made by means of tools of metal, probably of bronze. Mr. Tate seems to underrate the efficiency of flint instruments, when applied to hard stones.*

Mr. Tate offers no definite view with regard to the meaning of these rock-sculptures, but considers them as symbolical—most probably of religious ideas. However, he seems to have a leaning toward the belief that they originated with the Druids, and were connected in different ways with the rites of that powerful priesthood. In support of this very cautiously advanced view he quotes passages from Pliny, Mela and Strabo.

*The question was practically solved during the International Anthropological Congress, held at Paris in the year 1867. There are in the Museum of Saint-Germain casts of the sculptured stone plates forming portions of the tumulus-dolmen on the Island of Gavv' Inis, Brittany. These slabs, consisting of compact granite, exhibit, as we have seen, surfaces covered all over with intricate curved lines and other designs. The savants who were present considered it impossible to execute such sculptures without employing tools of steel or hardened bronze. But M. Alexandre Bertrand, the director of the museum, was of different opinion, and proceeded to make a trial. A piece of the same granite was worked with stone implements, and the experiment proved to be a perfect success. After a day's labor, a circle and a few lines were engraved. A chisel of polished flint used during the whole time was hardly injured; one of nephrite had become somewhat blunted, and a similar implement of greenstone still more. But the edge of a bronze axe used in the operation was instantly bent, and it became evident that those sculptures had not been executed with bronze, but with stone. This account is given by Professor Carl Vogt in one of a series of letters addressed, in 1867, from Paris to the Cologne Gazette. I have quoted it before this in the Smithsonian publication entitled "The Palenque Tablet in the United States National Museum."

A similar experiment, made at the suggestion of Professor Simpson, is thus described by him:—

"I have found experimentally that the rings and cups can be engraved deeply and without difficulty upon the Argyleshire schist, and even upon hard Aberdeen granite, with a flint celt and a wooden mallet. In the Edinburgh Antiquarian Museum there is a block of gray Aberdeen granite from Kintore, forming one of the sculptured stones of Scotland, and containing upon one side two crescents, etc. On the back of this hard granite Mr. Robert Paul, the doorkeeper of the Museum, tried for me the experiment I allude to, and cut, in two hours, two-thirds of a circle with a flint and a wooden mallet. The flint used was about three inches long, an inch in breadth, and about a quarter of an inch in thickness. The circle which he sculptured with it in the granite was seven inches in diameter; and the incision itself was nearly three-quarters of an inch broad, above a quarter of an inch in depth, and very smooth on its cut surface. In hewing out the circle with the flint, its sharp tips from time to time broke off, but another sharp edge was always immediately obtained by merely turning it round.

"The result of this simple and decisive experiment seems to me to be important, as showing that if these archaic cuttings could be sculptured alike either by stone or by metallic tools, their mere character and form afford no evidence whatsoever that they were not carved till after the discovery and use of metallic implements. In other words, the experiment shows that they might have been produced before the introduction of metals—or during the Stone age."—*Archaic Sculptures, etc.*; p. 122.

"As the functions of the Druids were varied", he observes, "so might these sacred stones be used for several purposes. On them, as altars, sacrifices may have been slain to avert either personal or state calamities; some of the figures may be the hieroglyphics of the gods to whom they were dedicated; the philosophical views of the Druids may be symbolically represented in the circles combined with circles on the Routing Linn Stone,* which, situated in a wild district and probably in the midst of forests, would be such a place as the Druids would choose, wherein to teach their occult doctrines and practise their superstitious rites. Some of the groups of the concentric circles may show their idea of the motion of the heavenly bodies; and the radial lines might set forth the 'influence and ability of the immortal gods,' as extending through and beyond the orbits of the heavenly bodies; the plant-like figures might enable them to expound 'the nature of things,' as seen in vegetation; possibly the grooves passing from the centre of one system of circles to another might symbolize the passage of a soul from one state of being into another and a higher state. And in addition, I cannot but think that one of the chief uses of those sacred stones was for magic and necromancy. The religious and philosophical significance of the figures would add to their impressiveness on the popular mind, when used for this purpose, and magnify the mysterious power of the Druid priest or magician when he cast a horoscope, or endeavored by incantations to avert personal or public calamities."

These passages, I repeat, contain Mr. Tate's suggestions as to what the significance of the sculptures possibly might be, being by no means intended to convey a matured opinion; and in order to show how far he is from considering the problem as solved, I quote here the concluding paragraph of his work:—

"Those who are not content unless every mystery is fully explained may feel dissatisfied, that after all the labor and research bestowed on the inscribed rocks, we cannot read them off as from a lettered book. Before, however, more definite results can be arrived at, further investigations must be made in other parts of the world. Two lines of research may yield information; one among the Laps in the far North, and the other, with

* Represented on Plate I of his work.

more hope of success, in the early home of the Aryan family. Something, however, has been achieved—materials for aiding in the fuller solution of the problem have been placed on record—an advanced starting-point made for future inquiries—and a description and representation preserved of marvelous sculptures, which time and the elements will eventually obliterate.”*

Professor Desor devotes a considerable portion of his often-quoted pamphlet to a discussion of the probable meaning of the primitive rock-sculptures, more especially those of the simple cup type. In referring to M. de Bonstetten, who considers the cup-shaped cavities in general as the work of nature (weathering out of imbedded nodules, etc.), he admits that such an explanation may be applied in certain cases,† but that on the whole M. de Bonstetten’s view appears totally untenable. Professor Desor is not very favorable to the altar theory, advocated by Nilsson, Troyon and others, because the cups often appear on slanting and even vertical surfaces, and thus could not have served for holding the blood of victims, or libations of any kind. Nor does he agree with Mr. Westropp, who believes that the cups have no significance whatever, but were excavated by the prehistoric people with no other object in view but that of passing the time; and he likewise rejects the idea, expressed by others, that they are simply of a decorative character. Having, in addition, alluded to several other theories—most of them already brought to the reader’s notice—Professor Desor observes as follows:—

“If the cups on our erratic blocks are not ornaments, boundary-marks, hieroglyphs, or simply the fancy-work of idle herdsmen—what else can they signify? We hold with Dr. Keller that they were chiefly made for the purpose of marking indelibly certain blocks designed to recall a circumstance or an event, the recollection of which was of a nature to be perpetuated.‡ It was doubtless left to oral tradition to explain their purport, and to transmit it from generation to generation. Hence the stones thus marked were invested with a monumental character—using the term in its most primitive acceptance—like the menhirs and the blocks which the

* Tate: *The Ancient Sculptured Rocks, etc.*; p. 35–44.

† Professor Simpson noticed in several instances *natural* cup-excavations.—*Archaic Sculptures, etc.*;

p. 3.

‡ In applying the term *Denkstein* to the Ober-Farrenstädt cup-stone, Wagener expresses the same view. See page 24 of this publication.

patriarchs put up in commemoration of important events. They were the natural auxiliaries of traditions, without being their interpreters. This was more than sufficient to render them popular. It is not surprising that they were the objects of a certain veneration, which, indeed, has not yet ceased in our days in some parts of Europe, where they are denominated 'sacred stones' by the people."*

Mr. Rivett-Carnac's views in relation to the primitive sculptures of India have been given, in connection with his descriptive account, in a preceding part of this publication, and I need not revert to them for the present.

Though Professor Nilsson's theories are likewise known to the reader, I have to draw attention to his statements concerning the continuance of cup-cutting in comparatively modern times. He is of opinion that the first Christian missionaries who came to Sweden, found in certain parts of the country a population still sacrificing on cupped Baal altars. In order to wean the people in a gentle manner from this practice, he thinks, the priests first used the cupped boulders as holy-water stones, and afterward introduced *aspersoria* in the shape of cupped stone vessels in the churches. Indeed, he describes and figures several of these vessels belonging to Scanian churches in which, before the era of Protestantism, Catholic worship was performed. Fig. 59 represents one of the holy-water basins figured by Nilsson, which is still seen in a church at Strö, in the Bishopric of Lund. Its upper surface shows five cup-excavations, but is otherwise smooth. A transition from this simple to a somewhat more elaborate device is shown by Fig. 60, likewise copied from Nilsson's work, and representing a holy-water basin in a church at Oennarp, in Scania. Its slightly hollowed upper surface exhibits five excavations, namely, a cross in the centre and a cup in each corner.†

There is but little doubt that this Christian contrivance of employing holy-water basins with cup-excavations is the survival of a preceding heathenish practice; but it is more than questionable whether these Christian church-vessels were designed to perpetuate, as it were, the recollection of what Professor Nilsson considers as sacrificial altars. Taking it for granted that

* Desor: *Pierres à Écuellies*; p. 18 and *passim*

† Nilsson: *Das Bronzalter*; Nachtrag, S. 42

cup-cuttings were still made in Sweden when the work of converting the inhabitants from paganism was begun, it by no means follows that the original motive for cup-cutting then still actuated the people of that country. We must at least take into account the possibility of such mutations, the more so as examples are not wanting. In most countries of Europe and in China and Japan, for instance, popular superstition even now invests prehistoric stone implements, such as axes, celts and arrow-heads, with magic powers, though the remote ancestors of the believers certainly used such weapons and tools. What was originally an object employed in daily life, became in the course of time a charm.

Some curious superstitions in relation to cupped stones are still in vogue among the uneducated people of different European countries. As we have seen, they are called *elfstenar* in Sweden. "The elfs," says Miss Mestorf, "are the souls of the dead; they frequently dwell in or below stones, and stand in various relations to the living. If their quiet is disturbed, or their dwelling-place desecrated, or if due respect is not paid to them, they will revenge themselves by afflicting the perpetrators with diseases or other misfortunes. For this reason people take care to secure the favor of the 'little ones' by sacrifices, or to pacify them when offended. Their claims are very modest: a little butter or grease, a copper coin, a flower or a ribbon will satisfy them. If they have inflicted disease, some object worn by the sick person, such as a pin or a button, will reconcile them. A Swedish proprietor of an estate (in Uppland), who had caused an elfstone to be transported to his park, found a few days afterward small sacrificial gifts lying in the cups. In the Stockholm Museum are preserved rag-dolls, which had been found upon an elfstone."* These probably had been deposited by women who wished to become mothers. Thus we see the cup-stones in Sweden applied to the use of altars; their cups, however, instead of holding the blood of victims, as Nilsson conjectured, serve to receive the harmless gifts of a simple-minded peasantry.

The cup-stone question has of late frequently been discussed in the annual meetings of the German Anthropological Society as well as in the meetings of the Anthropological Society of Berlin, Messrs. Virchow, Desor,

* Correspondenz-Blatt der Deutschen Anthropologischen Gesellschaft, 1879, S. 4.

Friedel, Mehlis, Schaaffhausen, and Voss being conspicuous among the participants in the debates. Much of what was said in these meetings bearing on the subject has been brought to the reader's notice, according to original sources; in addition, however, various communications relating to the occurrence of cup-excavations and furrows on the outside of the walls of churches were made on these occasions.

It appears that Dr. E. Veckenstedt, a member of the Berlin Anthropological Society, first pointed out the existence of these curious marks on a church at Cottbus, in the Province of Brandenburg, Prussia.* They were afterward noticed under similar circumstances at Guben, in the same province.† Mr. E. Friedel, Director of one of the Berlin museums (*Märkisches Provinzial-Museum*), becoming much interested in the subject, succeeded in discovering them on churches in many other places of that province (Spandau, Prenzlau, Angermünde, Strausberg, Fürstenwalde and Vetschau). He further found the marks on churches in Pomerania (Greifswald, Stralsund, Gützkow, Lassan, Anklam, Wolgast, Sagard, Altenkirchen, Bergen on the Island of Rügen; Gristow, Hanshagen and Neuenkirchen near Greifswald; Morgenitz and Mellenthin on the Island of Usedom; Stettin); and extending his researches beyond the boundaries of Germany, he found cup-marks on churches in Sweden (Malmö, Upsala, and Wexiö). Mr. Woldt noticed them in Berlin, and, according to Dr. Veckenstedt, they occur in Goslar (Hanover) and Brunswick. Dr. Voss saw them in Baireuth (Bavaria).‡ Mr. W. Schwartz sent to the Anthropological Society of Berlin a report concerning cups on churches in the Province of Posen;§ and Professor Virchow, finally, discovered himself these artificial excavations on the walls of ecclesiastic buildings in Switzerland (Thun and Berne) and in the valley of the Rhine.|| Many additional discoveries of the kind are to be expected.

The Prussian churches on which these curious markings have been observed, appear to be mostly built of brick, and the excavations, of course, are made in that material. They are usually, though not always, found on

* Verhandlungen der Berliner Anthropologischen Gesellschaft; Sitzung vom 19. Juni 1875, S. 18.

† Ibid.; Sitzung vom 21. Juli 1877, S. 22.

‡ Ibid.; Sitzung vom 16. Februar 1878, S. 23.

§ Ibid., Sitzung vom 15. November 1879, S. 18.

|| Ibid., Sitzung vom 18. October 1879, S. 36.

the southern side of the churches, near an entrance, and, as a rule, placed within the reach of a man's arm. The cups are smaller than most of those seen on blocks, measuring only from two to four centimeters in diameter, and are commonly distributed without apparent order. Sometimes they are partly executed on the mortar between the bricks, a fact demonstrating beyond doubt that they were made after the erection of the churches. Such a case is well shown in Fig. 61, representing a portion of the portal of the *Marienkirche* (Saint Mary's Church) at Greifswald, in Pomerania.* The two uppermost cups, it will be seen, are partly excavated in the mortar. The lowest course shows two furrows. In some instances such markings have been observed on stone-built churches.

It appears more than probable that the practice of thus marking the outside of these buildings indicates the continuation of a pagan custom, though in these cases the cups may not have the significance of those seen on boulders and megalithic monuments. I already have expressed a similar doubt while speaking of the cupped holy-water basins. The motives which induced people in comparatively modern times to mark churches with cups and furrows are not yet known. The theory that they are the work of children will not explain the wide extent and uniformity of the practice, though mischievous urchins may have amused themselves now and then by adding to the number of markings.† They evidently are not bullet-marks, as has been suggested: in fact, none of the views thus far advanced to account for their presence appears to me satisfactory. The cups on churches in Germany seem to have been thought to possess healing qualities. Fever-sick people blew, as it were, the disease into the cavities. According to other accounts, the patients swallowed the powder produced in grinding out the cups. The latter practice has not yet become obsolete in France; for Professor Desor learned from M. Falsan that in the church of Voanas, near Bourg, Department of the Ain, a large stone, called *La Pierre de Saint-Loup*, is preserved, into which the sick and impotent grind holes, and drink the pulverized matter, which, as they believe, cures the fever and renews

* The illustration is taken from an article by Miss Mestorf, published in "Matériaux", 1878, p. 277. I have reversed the position of the illustration, supposing that it was wrongly inserted in the French periodical. It accompanied originally one of Mr. Friedel's publications.

† Verhandlungen der Berliner Anthropologischen Gesellschaft; Sitzung vom 16. Februar 1878, S. 25.

the vital strength. Another stone, known as *La Pierre de Saint-Clement*, in the village of Nanney, in the above-named department, is used for the same purpose. In the Swiss Canton of Valais, Professor Desor further states, ailing persons drill into the stones of a certain chapel, and swallow the dust thus obtained.* Mr. Friedel learned from a citizen of Greifswald that the cups were still resorted to in his time for charming away the fever. The *Bischofs-Stein*, near Niemegk, mentioned on page 24 of this publication, Mr. Friedel observes, is still visited by patients and quack doctors who rub it with grease, in order to bring about cures. In a few instances, it seems, the inside of cups on German churches was found to exhibit traces of grease. The same gentleman has drawn attention to the anointing of stones practised for religious purposes by the ancient Jews. He refers to Genesis XXVIII, 18: "And Jacob rose up early in the morning, and took the stone that he had put for his pillows, and set it up for a pillar, and poured oil upon the top of it"; and to Zechariah III, 9: "For behold the stone that I have laid before Joshua; upon one stone shall be seven eyes; behold, I will engrave the graving thereof, saith the Lord of hosts, and I will remove the iniquity of that land in one day." These "eyes" were anointed with oil.† Such customs, however, may have sprung up independently among different nations.

There are some curious popular traditions connected with the cup-excavations and grooves on churches in Germany. Thus, the grooves on the cathedral at Brunswick pass for the claw-marks of the lion said to have followed Duke Henry of Saxony and Bavaria, surnamed "the Lion," from Palestine to Germany. This lion, the legend says, made the marks in a fit of rage, being unable to enter the church in which his master was praying‡ In Posen a tradition refers the cups to the souls of the damned, who, during their life-time, never had visited churches. They ground out the cavities during the night, and left them as tokens of their despair at not being allowed access to the closed churches.§ There are other similar

* Correspondenz-Blatt der Deutschen Anthropologischen Gesellschaft, 1878, S. 156.

† Verhandlungen der Berliner Anthropologischen Gesellschaft; Sitzung vom 16. Februar 1878, S. 24.

‡ Ibid., Sitzung vom 19. Juni 1875, S. 18.

§ Ibid., Sitzung vom 15. November 1879, S. 19.

stories told, to which I will not allude, as they have no scientific value whatever, but simply show the current of popular fancy.

It is to be hoped that the efforts of European savants—more especially of those of Germany, who show so much interest in the matter—will ultimately result in clearing up the mystery that still shrouds the origin and meaning of cup-excavations and grooves on ecclesiastic structures.

I have to allude once more to Mr. Rivett-Carnac's remarkable discoveries in India, and to the views thereon based by him. No one who has examined his publications in connection with those of Simpson and Tate can help admitting the striking resemblance between the cup and ring-cuttings of India and Great Britain. Indeed, his theory that the primitive rock and stone-sculptures of those countries were executed by people akin in race, following similar customs, and observing similar forms of worship, deserves the highest attention. Yet, after all, we deal here for the present with a speculation and not with an established fact. The necessary evidences, based upon the discovery of cup and ring-carvings in various countries of the Old World, where thus far they have not been shown to exist, are at present wanting. If they should come to light in the course of time, we may be allowed to construct the ethnological chain which is still imperfect.

Professor Desor's Aryan theory, as given in a preceding part of this publication, appears to me truly captivating, although the difficulties just alluded to have, of course, also to be overcome in this case. In fact, Mr. Rivett-Carnac and Professor Desor are aiming at similar results. The last-named gentleman's view, formulated with great distinctness, would tend to establish a kind of archæological harmony, by reducing, as it were, a number of factors, hitherto not properly connected, to a single principle. Leaving aside for a moment the question touching megalithic monuments and primitive sculptures, how well would this theory explain the gap existing between palæolithic and neolithic implements, and likewise the introduction of domestic animals so characteristic of the era of polished stone. The opinion that the Aryans were still in the stone age at the period of their dispersion probably will gain more and more ground; but the question concerning the original home of this people, the existence of which was traced in a manner somewhat analogous to that by which

Leverrier discovered the planet Neptune, is still an open one. It should also be considered that, though the Mahadeo-worshipping Saivas are (as I judge) more or less modified Aryans, the Khasias of Bengal, who are prominently mentioned as the modern builders of megalithic structures, belong to a totally different race. "It is at all events worthy of remark," says Miss Buckland, "that those who now in India build cromlechs, erect pillars and circles of stones, and construct miniature kistvaens, are not the dominant Aryan race, but the dark-skinned aborigines, descendants of the pre-Aryan occupiers of the soil, and that in every country westward, wherein these monuments are found, they are traditionally associated with a long-forgotten race. It is remarkable, too, that some are assigned to giants and some to dwarfs."* Similar traditions, it will be remembered, are recorded by Mr. Rivett-Carnac.

After all that has been said concerning the significance of the cup and ring-sculptures in the Old World, I hardly venture to offer an opinion of my own. However, it appears to me that the close connection between cups and rings has not been sufficiently considered. It certainly appears that both belong to *one* system of primitive sculpture, of which the former seem to be the earlier expression; and if, indeed, the combined cups and rings are what Mr. Rivett-Carnac thinks them to be, a kindred purport should be assigned to those cup-excavations which occur without circles and radial grooves on rocks and stones in Europe and Asia. I cannot see how these two kinds of sculpture can be separated from each other, unless by supposing that the primary application of the cups was simply of a practical nature, and that afterward, owing to the force of habit, they were made to enter into the composition of more elaborate carvings of an entirely different character. This, however, is rather doubtful.

Turning to America, we find the difficulty of approaching anything like a solution of the problem still greater, considering that here as yet the number of discovered cup-stones is by far too small to permit the merest attempt at generalization. As to the smaller North American cup-stones, I have expressed, though in a guarded manner, my opinions concerning their

* Buckland (Miss A. W.): Notes on some Cornish and Irish Pre-historic Monuments in: *Journal of the Anthropological Institute of Great Britain and Ireland*; November, 1879.

probable application—opinions which I am ready to abandon, as soon as more satisfactory explanations are brought forward. Regarding the larger North American cupped stones, more especially that belonging to the Cincinnati Society of Natural History, I am unable for the present to offer the slightest elucidation.

The question naturally arises, whether the practice of excavating cups in rocks was introduced in America by immigrants from abroad, or whether it sprang up spontaneously in the New World. Being a believer in the Darwinian doctrine of evolution, I consider man as a foreign element in America. My reasons for that belief need not be given in this place: they are known to all who follow in the wake of the great English naturalist. I am further of opinion that the present American continent received its population at a very remote period, when, perhaps, the distribution of land and sea was different from what it is now. The earliest immigrants may have been so low in the scale of human development that they yet lacked the faculty of expressing themselves in articulate language.* However, it can hardly be supposed that the peopling of America took place at a certain time and was discontinued afterward: on the contrary, there are reasons which render a continued connection with distant parts, more especially with Asia, highly probable. The innate tendency which leads man independently in different parts of the world to the same or similar inventions and conceptions, provided that there is a sufficient similarity in the external conditions of existence, will account for many customs and practices of the aboriginal American; but it fails to explain, for instance, the highly artificial and complicated system of reckoning time, which was in vogue among the Toltecs, Mexicans and Yucatecs, and was almost identical with the system still applied in Thibet and Tartary. It hardly can be imagined that a method so intricate and peculiar in its principle could have originated in different parts of the world, and hence one is almost driven to believe in later connections between the inhabitants of Asia and America.†

* In what other way can we account for the totally diverse characteristics of the numerous linguistic families of America?

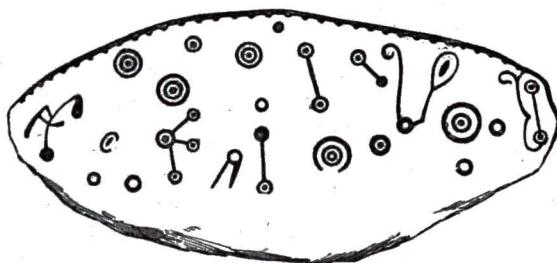
† Those desirous of more precise information on the subject will find it in Humboldt's "*Vues des Cordillères*" (Paris, 1810, p. 125-194), or in the translation of that work, known as "*Humboldt's Researches*" (London, 1814, Vol. I, p. 276-409), and in Tylor's "*Anahuac*" (London, 1861, p. 241, etc.).

The cups on the Cincinnati boulder are perfectly similar to those on many stones in the Old World, and it is probable that they owe their origin to the same motives. If these motives arose from some religious conception, we might feel inclined to trace the origin of American cup-cutting to Asia. But if, on the other hand, the cups were designed for a practical purpose, the custom of excavating them may have sprung up in America as well as elsewhere.

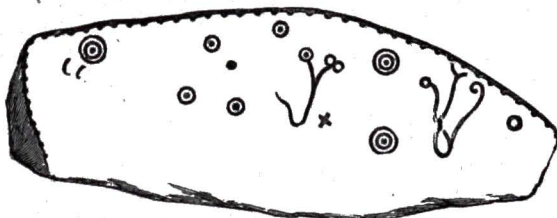
My task is now finished. It was my chief object to draw attention to a very curious class of North American antiquities as yet but little known, and thus to bring them within the range of a closer observation, which possibly may lead to a better understanding of their meaning. As stated on the title-page, I have tried, moreover, to present the subject under discussion in its entirety—a mode of treatment which, I hope, will not be deemed an objectionable feature of this publication.

SUPPLEMENTARY NOTE.

While treating in these pages of primitive American sculptures bearing some analogy to those observed in the Old World, I omitted to mention the incised rock in Forsyth County, Georgia, briefly described and figured by Colonel Charles C. Jones on pages 64 and 65 of the "Journal of the Anthropological Institute of New York" (Vol. I, New York, 1871-'72). The subjoined illustrations are those published by Colonel Jones, who kindly loaned me the wood-cuts.



North side of sculptured rock in Forsyth County, Georgia.



South side of the above.

Here follows his description:—

"In Forsyth County, Georgia, is a carved or incised boulder of fine-grained granite, about nine feet long, four feet six inches high, and three feet broad at its widest point. The figures are cut in the boulder from one-half to three-quarters of an inch deep.

"As yet no interpretation of these figures has been offered, nor is it known by whom or for what purpose they were made; but it is generally believed they were the work of the Cherokees. On the eastern end of the boulder, running vertically, is a line of dots, like drill-holes, eighteen in number, connected by an incised line."

The character of the sculptures being shown by the illustrations, I need not add any further remarks.

SUMMARY.

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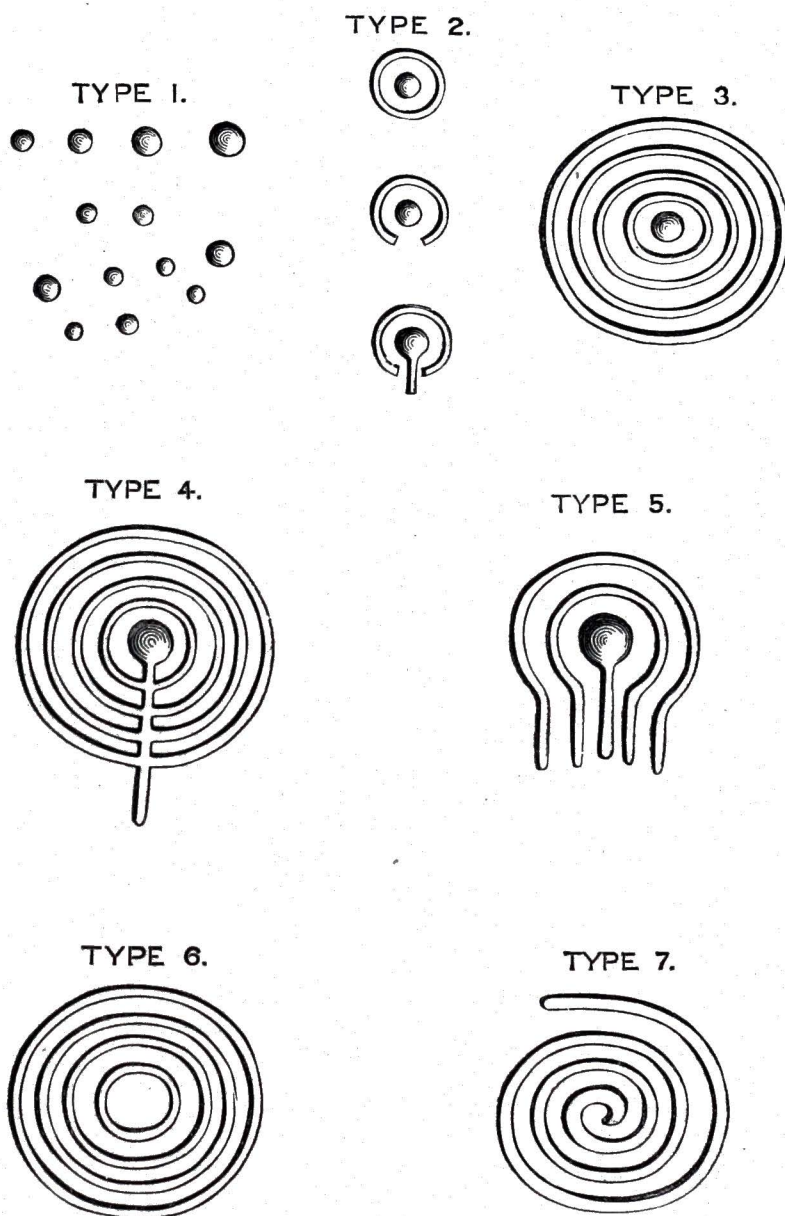
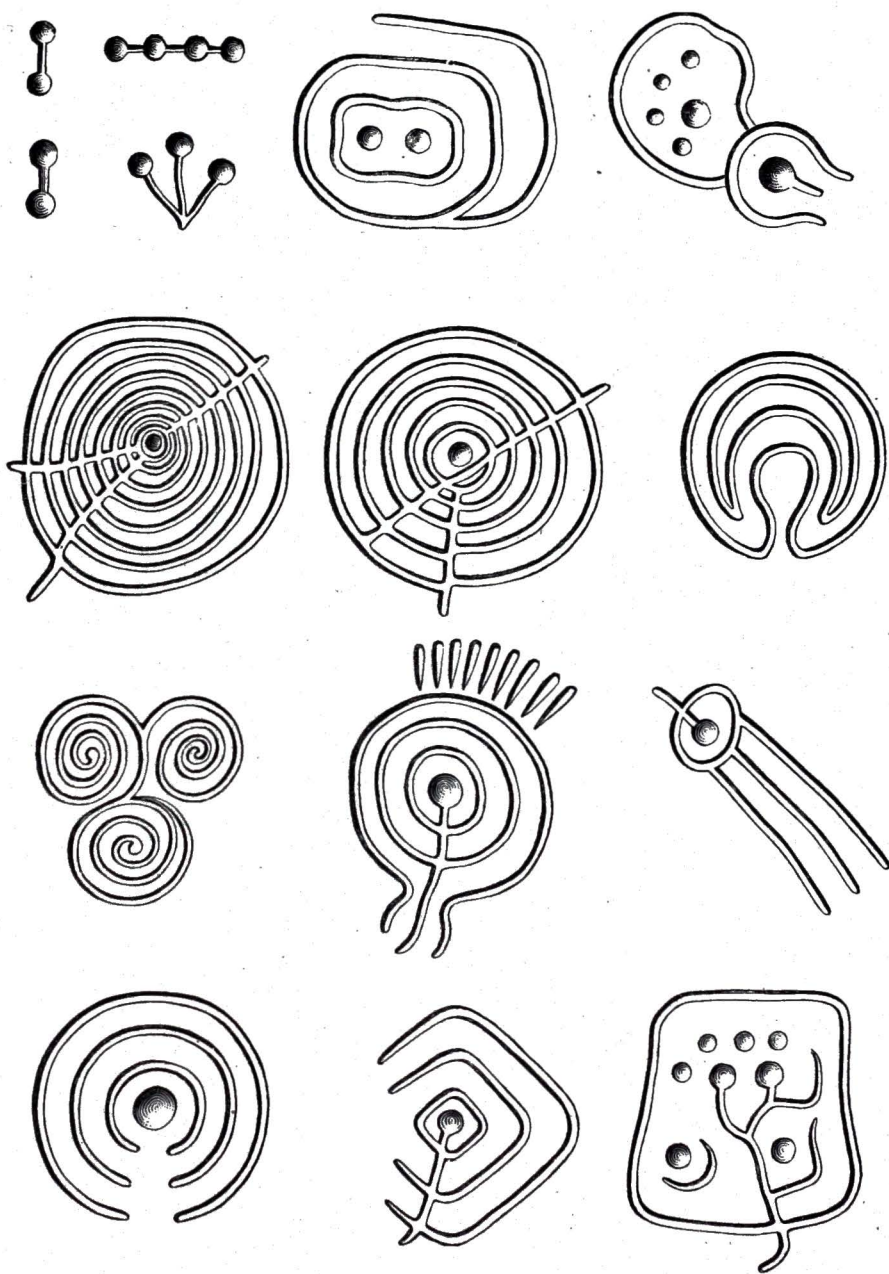


FIG. 1.—Common types of European cup and ring-cuttings.



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FIG. 2.—Chief deviations from the general types of European cup and ring-cuttings.

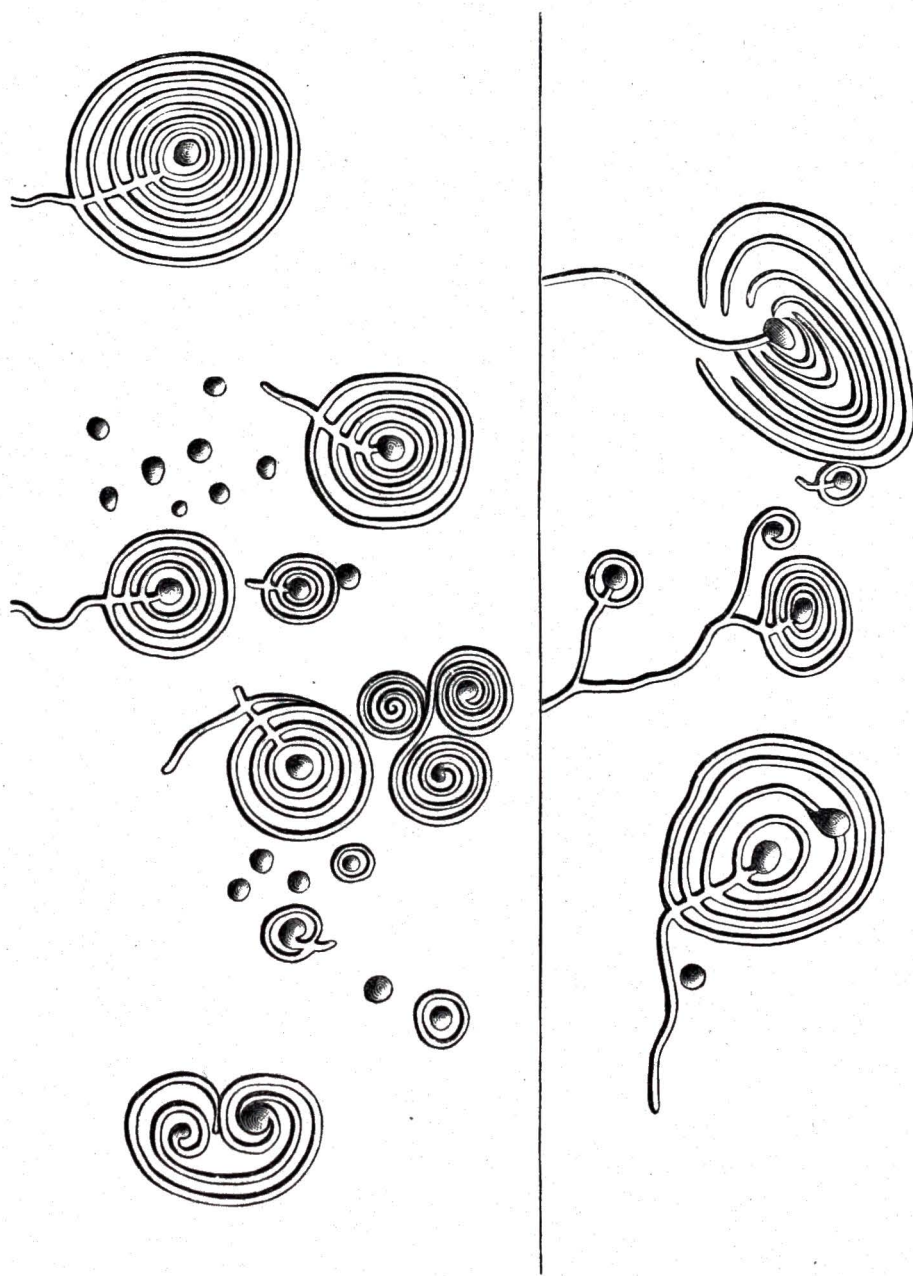


FIG. 3.—Sculptured rock-surfaces at Achnabreach, Argyleshire, Scotland.

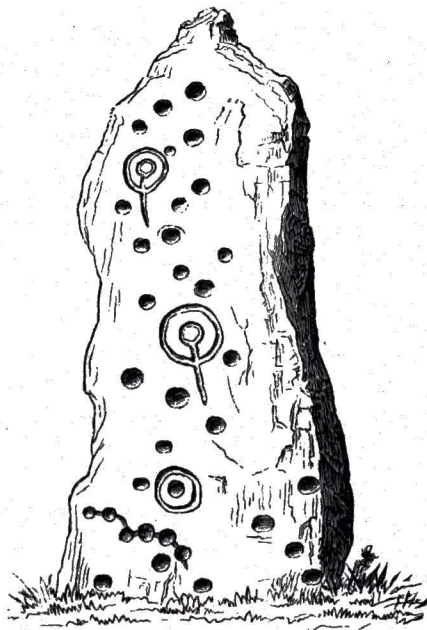


FIG. 4.—Cup and ring-cuttings on a menhir at Ballymenach, Argyleshire, Scotland.

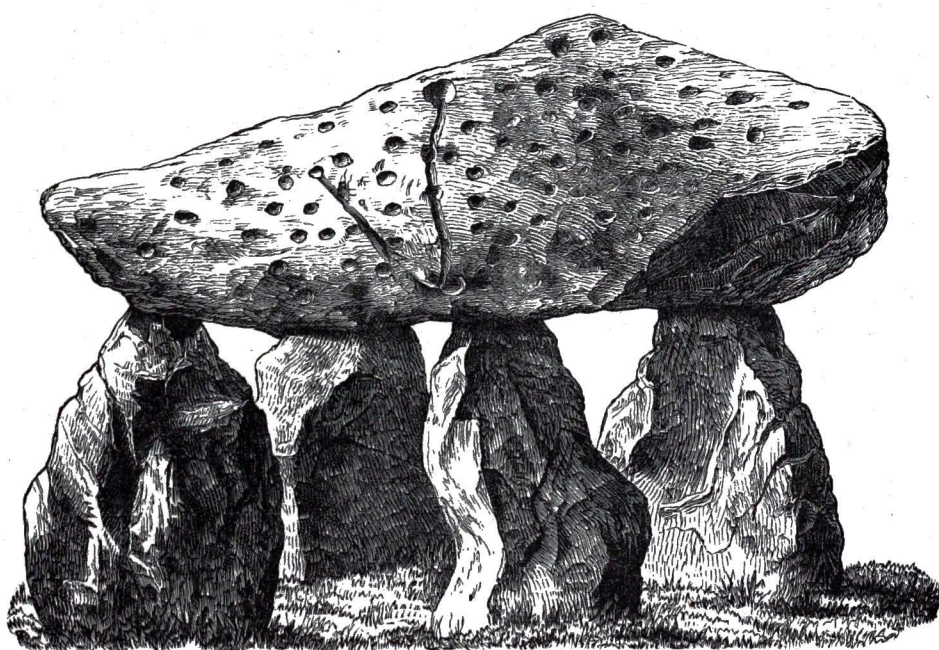


FIG. 5.—Dolmen with cup-marked cap-stone, near Clynog Fawr, Cærnarvonshire, Wales.

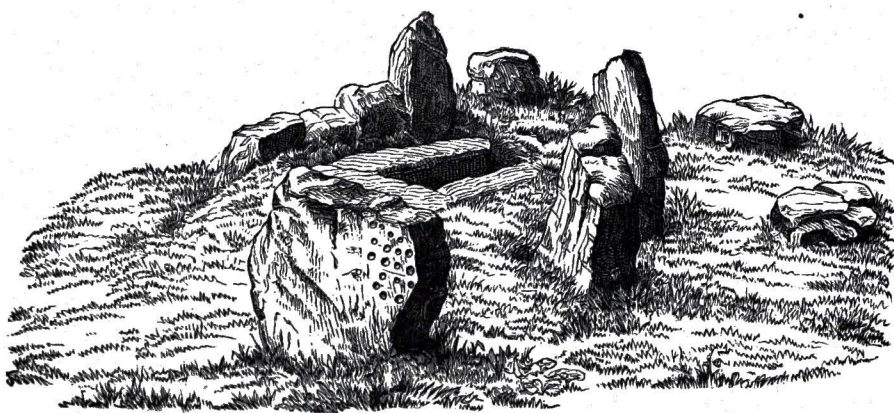


FIG. 6.—Kistvæn surrounded by blocks, one of which is cup-marked. Oatlands, Isle of Man.

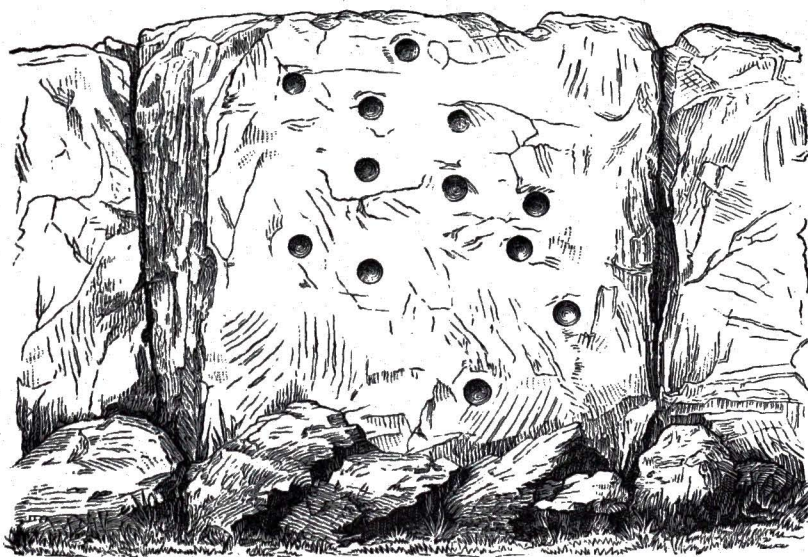


FIG. 7.—Cupped stone in a chambered tumulus at Clava, Inverness-shire, Scotland.



FIG. 8.—Cupped monolith near Dunbar, East-Lothian, Scotland.

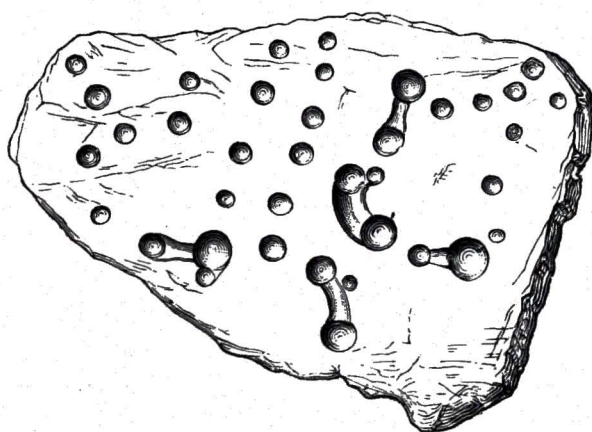


FIG. 9.—Large cup-stone near Balvraid, Inverness-shire, Scotland.

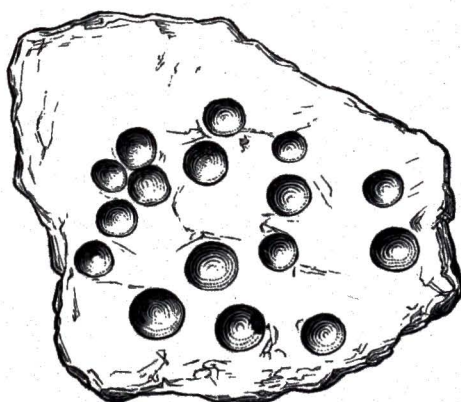


FIG. 10.—Cupped stone found at Laws, Forfarshire, Scotland.

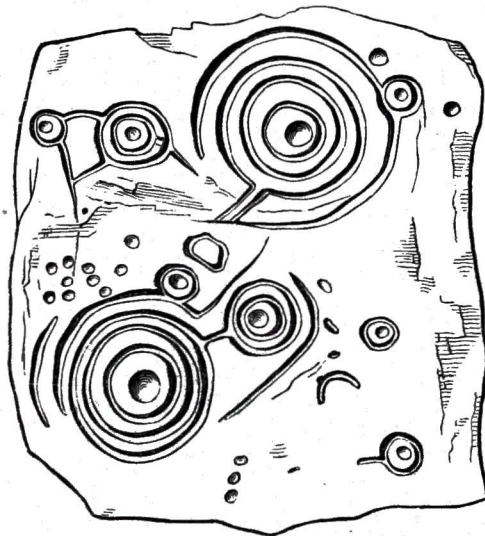


FIG. 11.—Stone with cup and ring-cuttings. County of Kerry, Ireland.

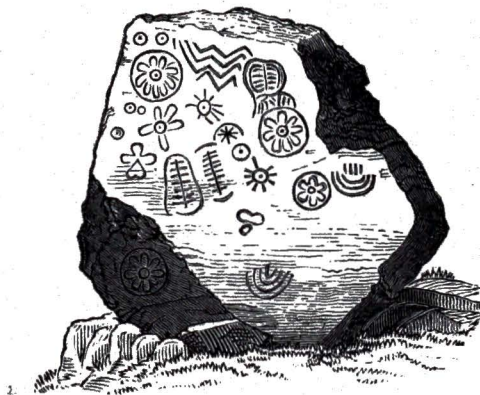


FIG. 12.—Incised stone in the tumulus at Lough Crew, Ireland.

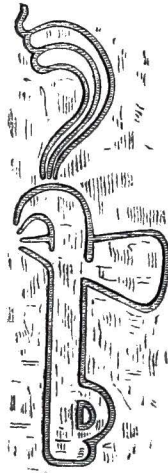


FIG. 13.—Carving of a celt in a plumed handle on the roof of a dolmen near Loemariaker, Brittany.

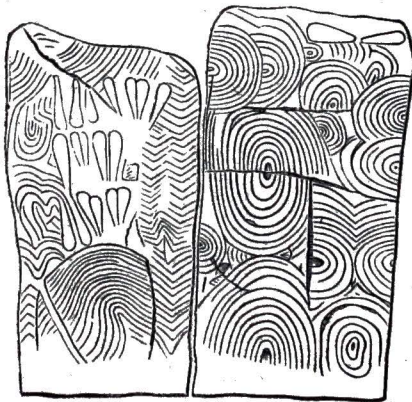


FIG. 14.—Incised chamber-stones in the tumulus of Gavv' Inis, Brittany.

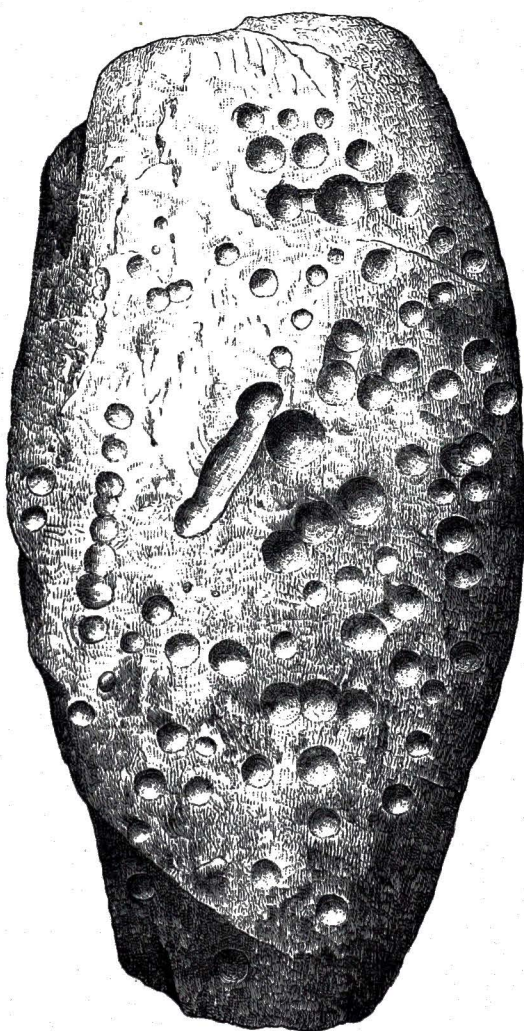


FIG. 15.—“La Boule de Gargantua,” a cupped boulder near Belley, Ain, France.

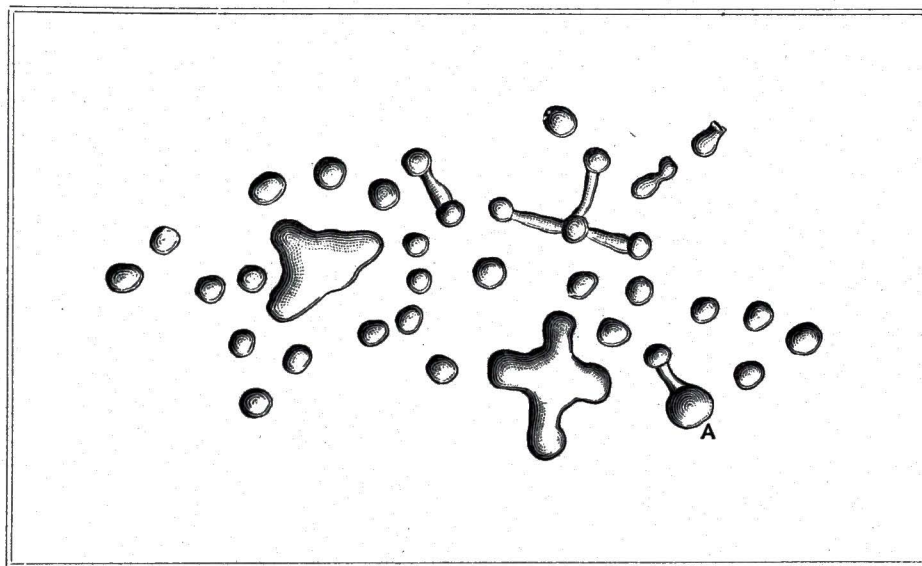


FIG. 16.—Cup-cuttings on a rock near Chirac, Lozère, France.

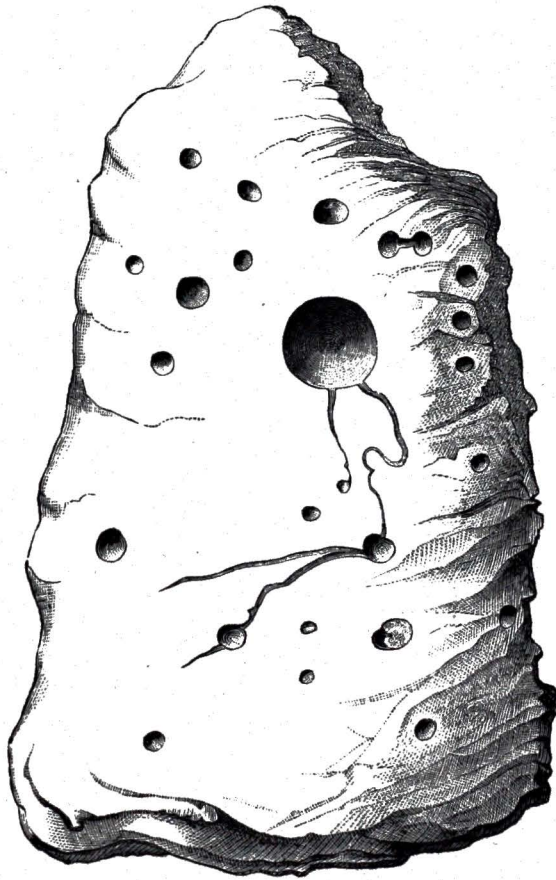


FIG. 17.—Cupped block near Mont-la-Ville, Canton of Vaud, Switzerland.

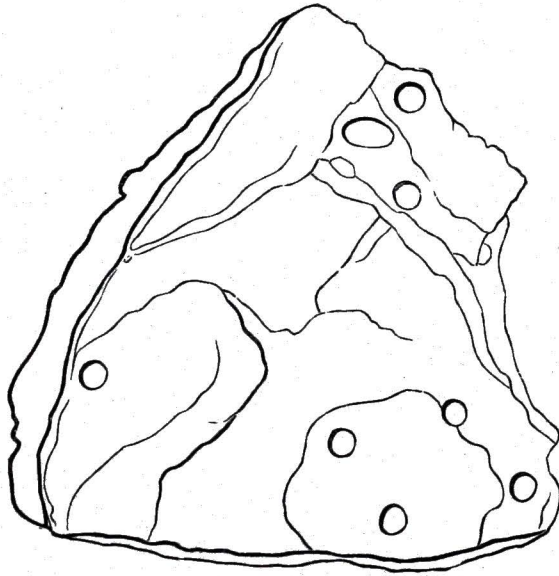


FIG. 18.—Fac-simile representation of a cupped rock near Ober-Farrenstädt, Prussian Saxony.

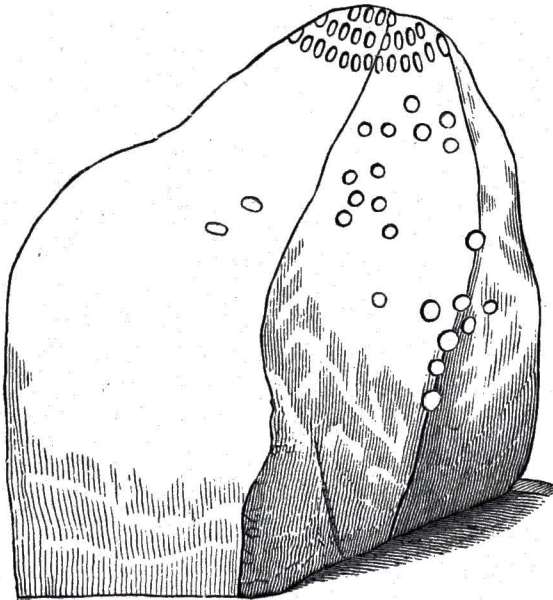


FIG. 19.—Fac-simile representation of a cupped rock near Meissen, Saxony.

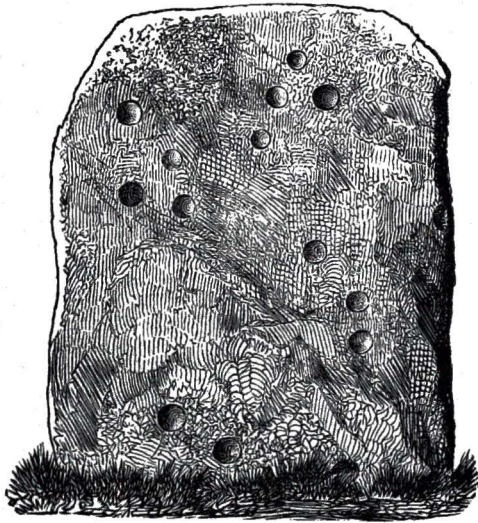


FIG. 20.—Cupped backside of a runic stone at Ravnkilde, Jütland, Denmark.

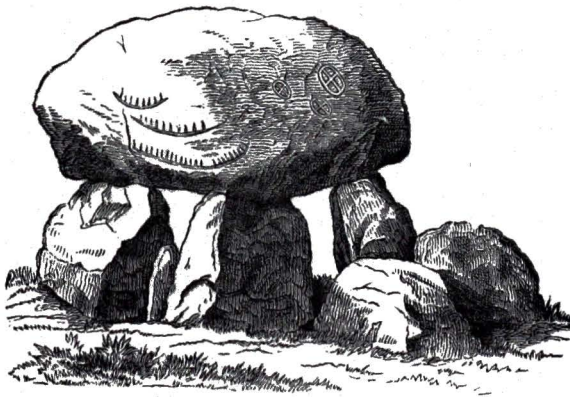
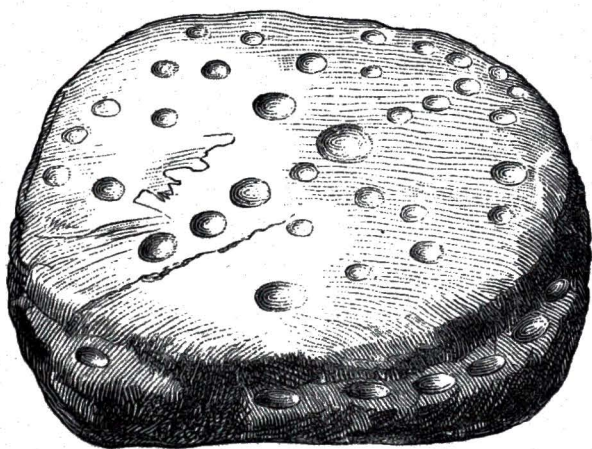


FIG. 21.—Tracings of ships and wheels on the roof-stone of a funeral chamber near Herrestrup, Seeland, Denmark.

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Baal

FIG. 22.—The “Balder Stone” near Falköping, Sweden.

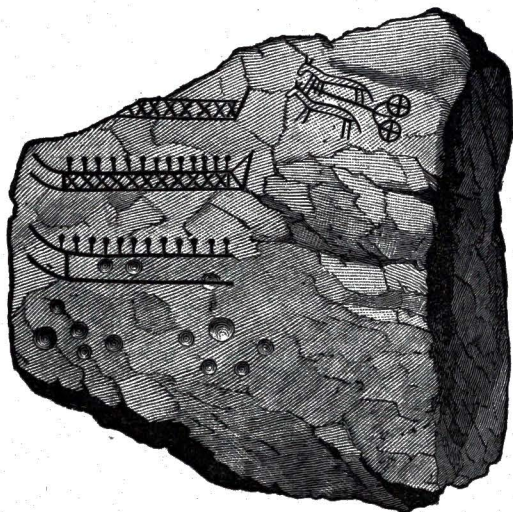


FIG. 23.—Stone slab showing cups and engraved designs. From a tumulus in Scania, Sweden.

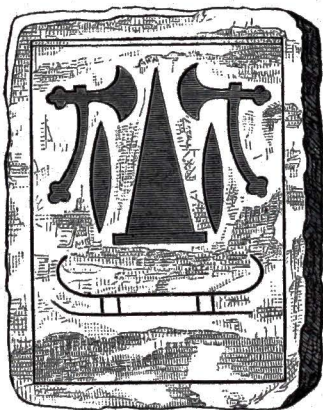


FIG. 24.—One of the engraved slabs of the Kivik monument, Scania, Sweden.

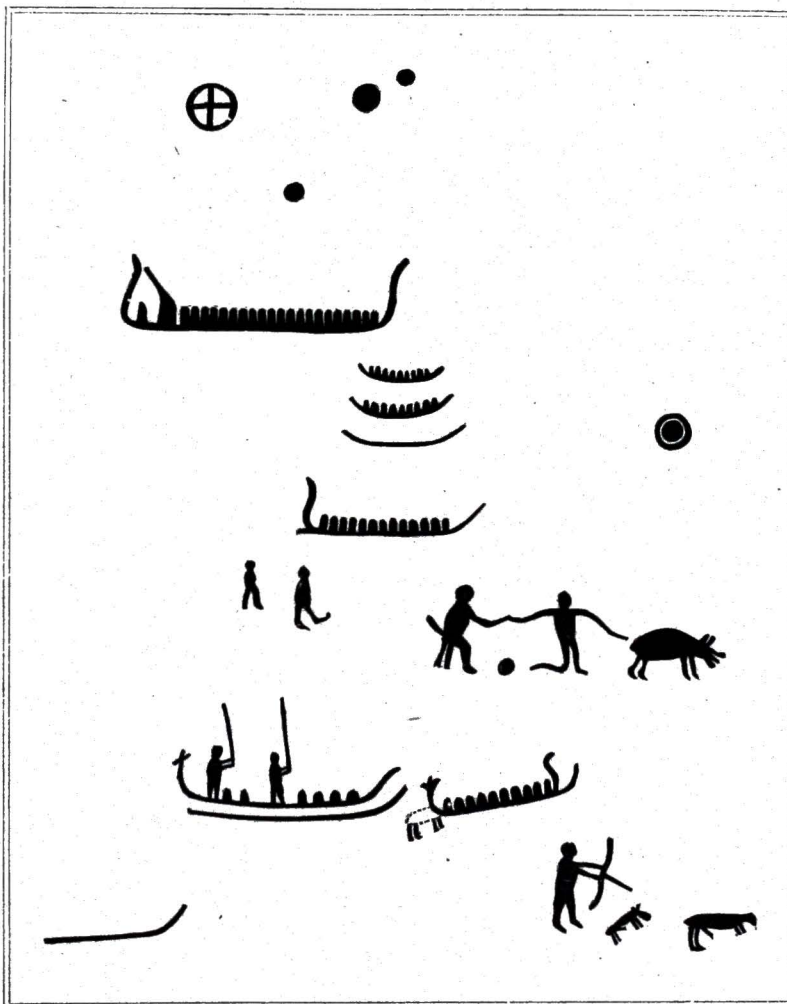


FIG. 25.—Rock-sculptures in Quille Härad, Län of Bohus, Sweden.



FIG. 26.—Cup and ring-cuttings at Chandeshwar, India.

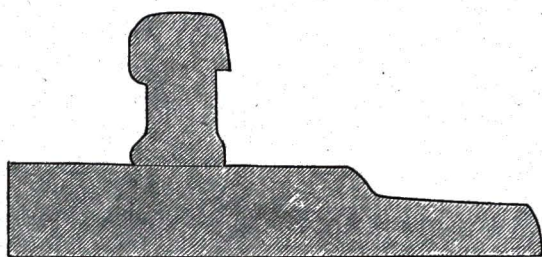


FIG. 27.—Section of a stone Mahadeo in the temple of Chandeshwar, India.

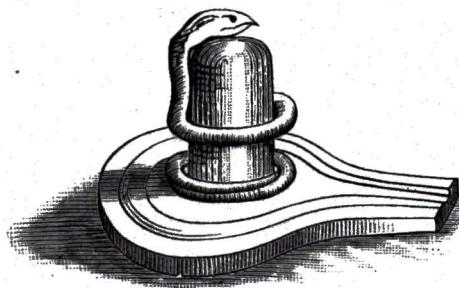


FIG. 28.—Mahadeo in a shrine at Benares, India.

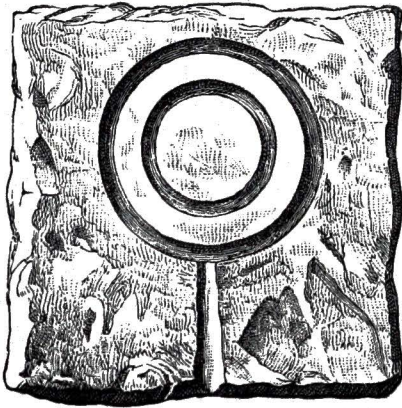


FIG. 29.

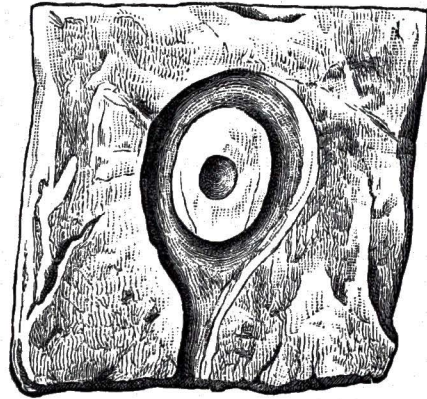


FIG. 30.

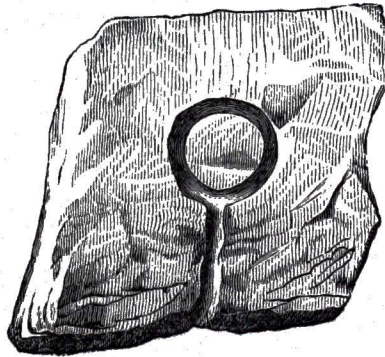
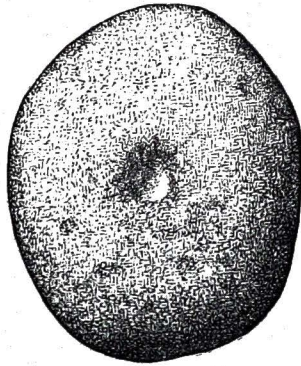


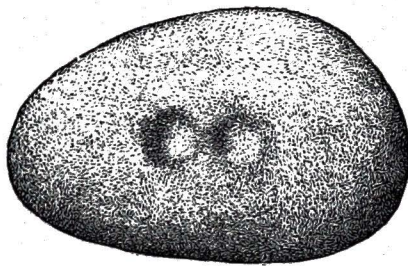
FIG. 31.

FIGS. 29, 30, and 31.—Mahadeo symbols engraved on stone slabs in the temple of Chandeshwar, India.



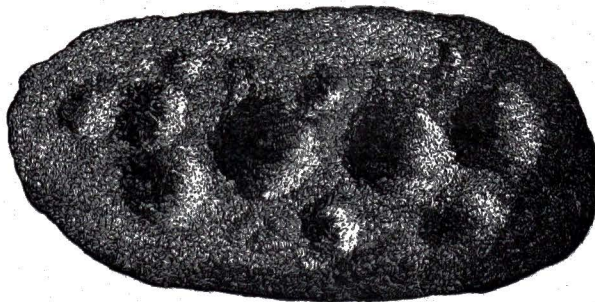
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FIG. 32.—Pitted stone found near Franklin, Williamson County, Tennessee (Mus. No. 19953).



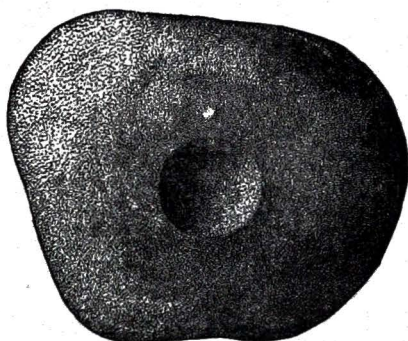
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FIG. 33.—Pitted stone from Muncy, Lycoming County, Pennsylvania.



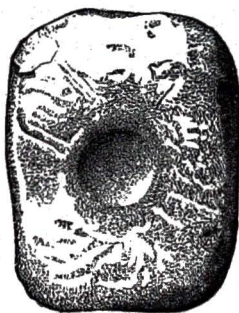
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FIG. 34.—Nut-stone from the neighborhood of Loudon, Loudon County, Tennessee (Mus. No. 21647).



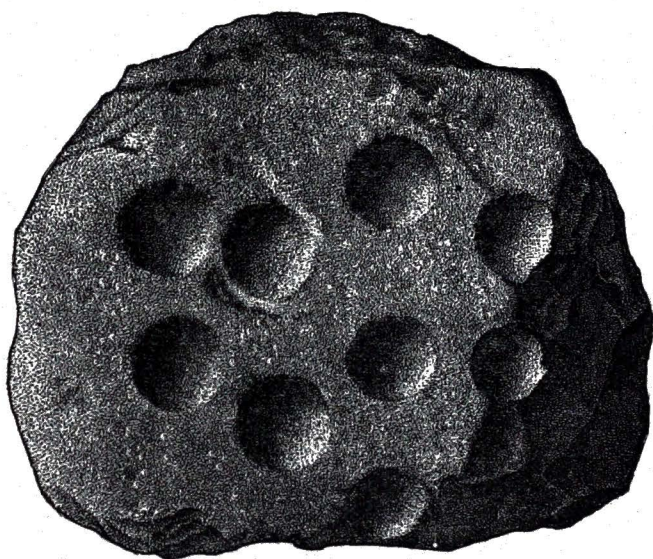
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FIG. 35.—Cupped stone found near Groveport, Franklin County, Ohio (Mus. No. 7743).



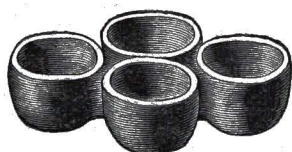
$\frac{1}{8}$

FIG. 36.—Cupped stone from the neighborhood of Portsmouth, Ohio (Mus. No. 19594).



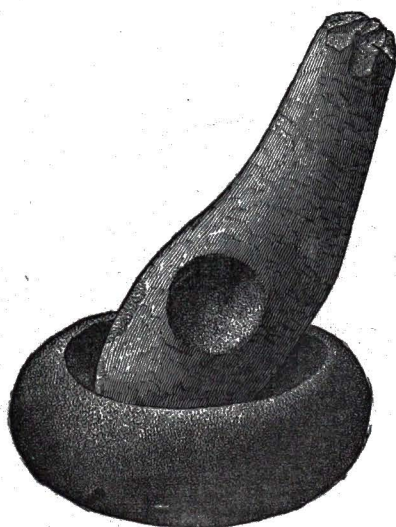
1

FIG. 37.—Cupped stone from Summit County, Ohio (Mus. No. 28018).



†

FIG. 38.—Earthenware paint-cups used by the Zuñis, New Mexico.
(Mus. No. 40446).



†

FIG. 39.—Stone mortar and pestle with a cup-shaped cavity. From
the Tesuque Indians, New Mexico (Mus. No. 42340).



†

FIG. 40.



†

FIG. 41.

FIGS. 40 and 41.—Terra cotta spindle-whorls from Tezcuco, Mexico.
(Mus. Nos. 786 and 757).

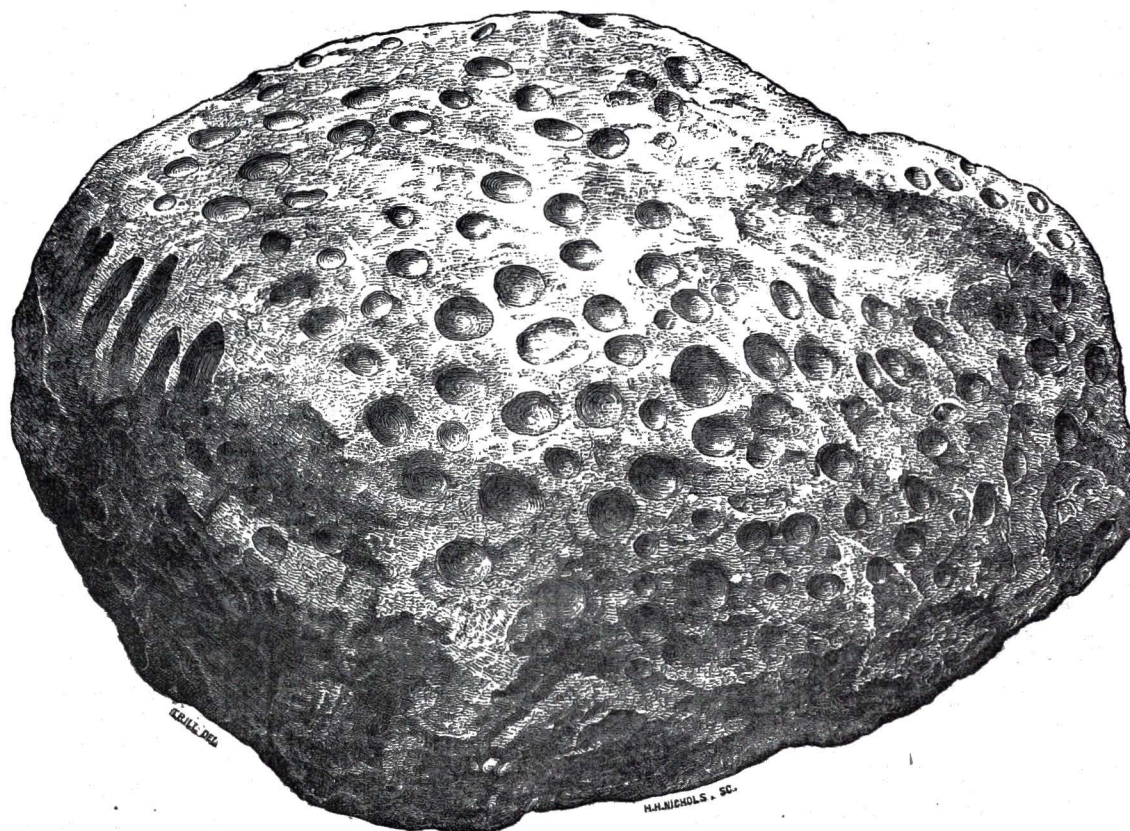
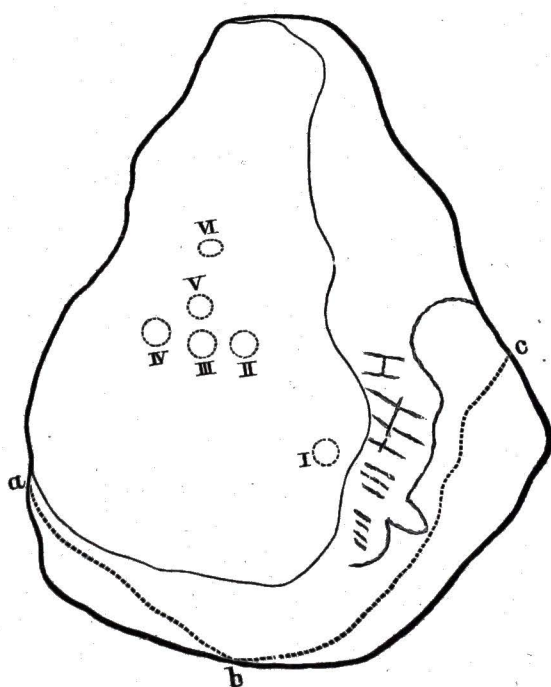


FIG. 42.—Cupped sandstone block, discovered in Lawrence County, Ohio; now in Cincinnati.



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Scale: 1 inch = 2 feet.

FIG. 43.—Cupped granite boulder at Niantic, New London County, Connecticut.

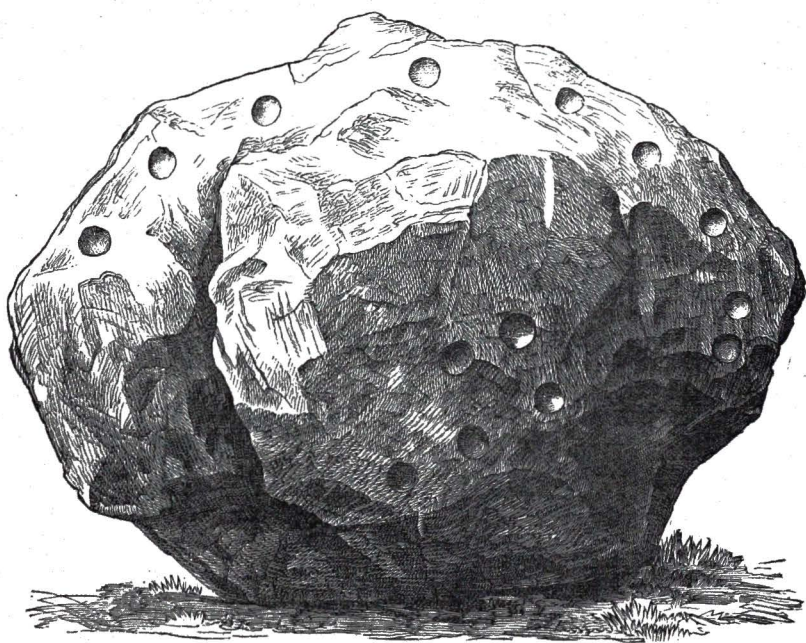


FIG. 44.—Cupped (?) rock in the neighborhood of Orizaba, Mexico.

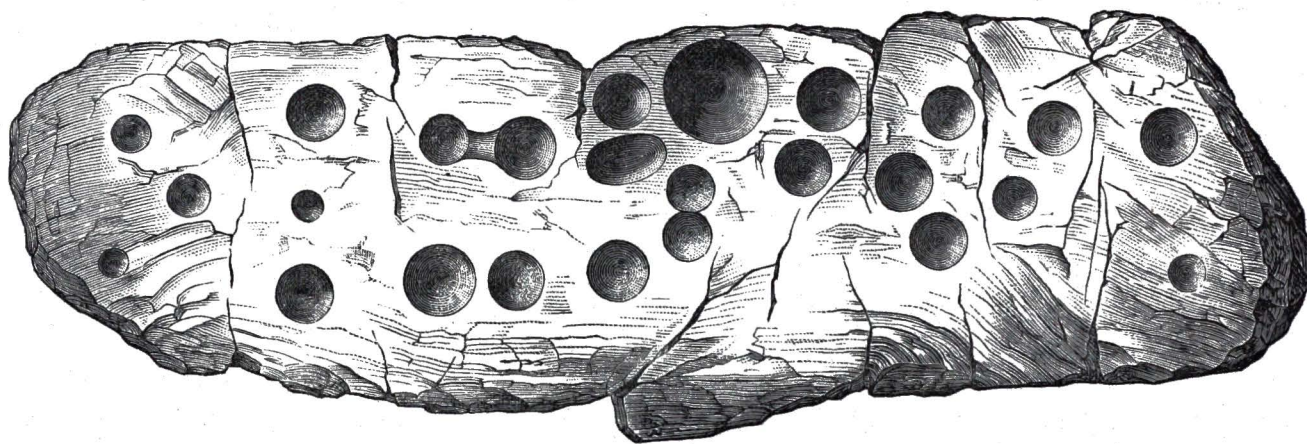


FIG. 45.—Large boulder with mortar-cavities. Santa Barbara County, California.

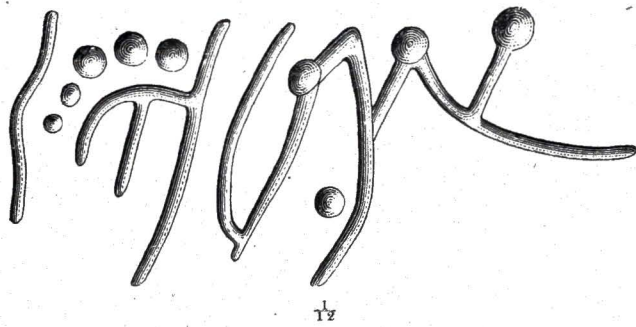


FIG. 46.—Sculptures on Bald Friar Rock, in the Susquehanna River, Maryland.

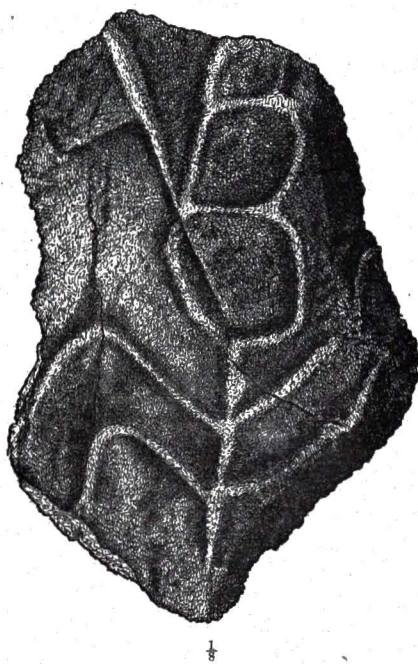


FIG. 47.—Sculptured slab from Bald Friar Rock (Mus. No. 39010).

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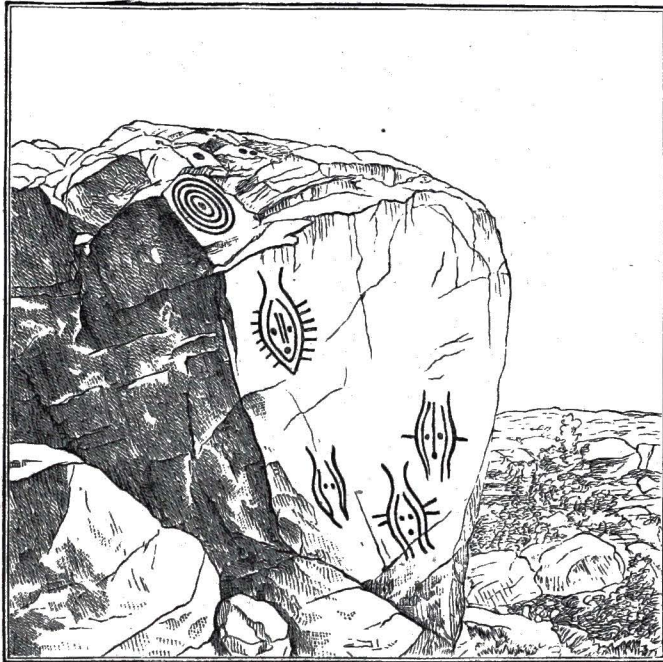


FIG. 48.—Northeastern end of Bald Friar Rock.

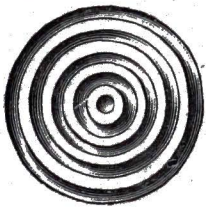


FIG. 49.



FIG. 50.



FIG. 51.

FIGS. 49, 50, and 51 ($\frac{1}{2}$).—Sculptures on Bald Friar Rock.



FIG. 52.—Sculptured boulder in the Gila Valley, Arizona.

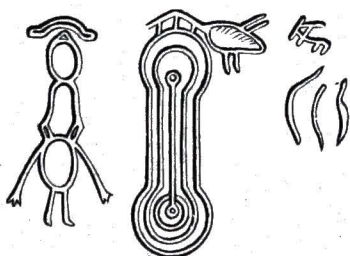


FIG. 53.—Rock-carving in the San Pete Valley, Utah.



FIG. 54.



FIG. 55.

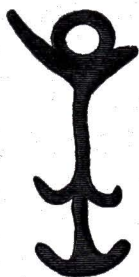


FIG. 56.

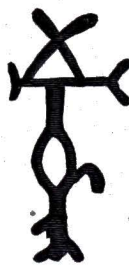


FIG. 57.

FIGS. 54, 55, 56, and 57 ($\frac{1}{2}$).—Rock-paintings in Lake County, Oregon.

Handwritten signature or mark.

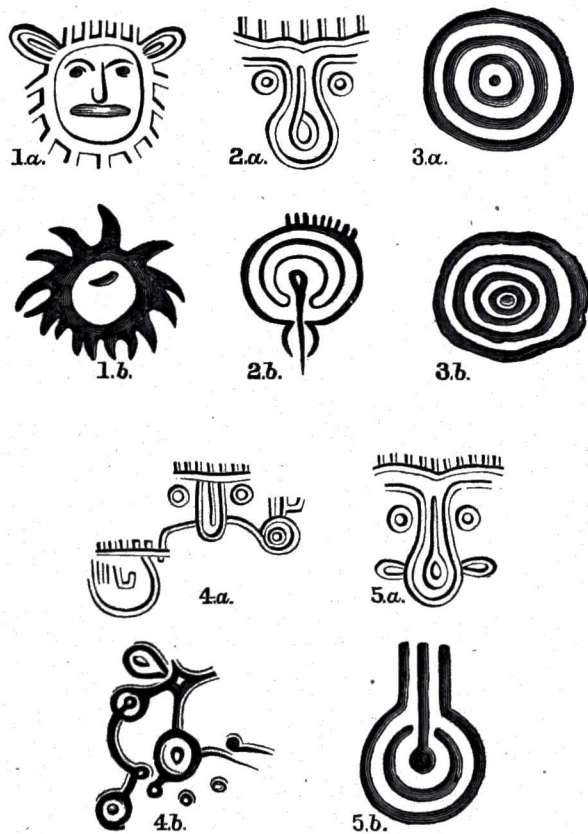


FIG. 58.—Rock-sculptures near David, Chiriqui, and Northumbrian types.

- No. 1 represents two radiant suns—*a* the American, *b* the British character; in Chiriqui this character has been found but once, nor does it occur oftener among the published British figures.
- No. 2. *a* the American, *b* the corresponding British figure, showing several grooves radiating from an outer arch, and bearing some resemblance to what is termed the "Ogham characters" by British antiquaries.
- No. 3. *a* the American, *b* the corresponding British figure, showing the completely closed concentric circles.
- No. 4. *a* the American, *b* the corresponding British figure, showing how the various characters (symbols) are connected by lines.
- No. 5. *a* the American, *b* the corresponding British figure, showing the groove or outlet of the circle.

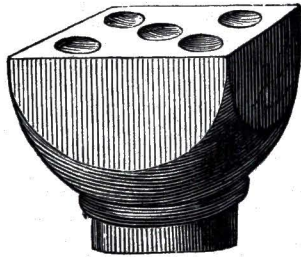


FIG. 59.—Holy-water stone in a church at Strö, in Scania, Sweden.

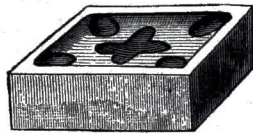


FIG. 60.—Holy-water stone in a church at Oennarp, Scania.

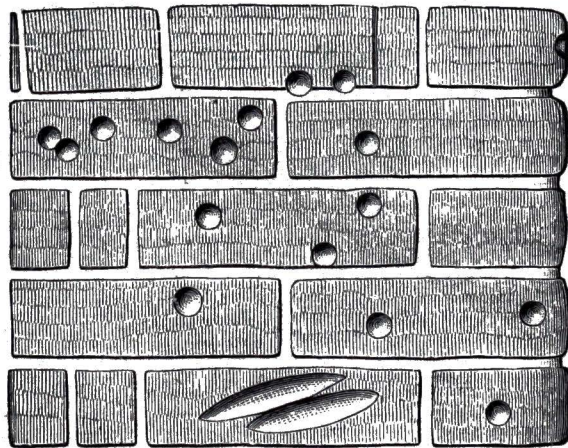


FIG. 61.—Cups and furrows on the wall of Saint Mary's Church, at Greifswald. Pomerania.

