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## THE ORIGIN OF THE SWASTIKA.

Away back on the horizon of our records, seemingly a little beyond their limit, an emblem we recognize as the swastika came into existence. Of the past history related to this little emblem we desire to know more; not because it is particularly attractive, or its construction, as we see it, complicated, but because it is known to have been in use in Europe, Africa, Asia, and America when we supposed there was no communication at least between the "Old and New World."

To our minds it appears much like a beautiful cloud that once floated above a setting sun, tinted with brilliant colors-now scattered by the "four cardinal giants" here and there over the earth.
"Where was it invented, by whom, and for what purpose?" has been a question among archæologists, historians, and learned men we know not since when. Variously, it has been considered a lucky charm, a religious emblem, a hoodoo proof, the hammer of Thor, and many other asserts too numerous and trivial to mention.

The compound word swas-tika of the Sanscrit, as applied to the swastika, signifies "come good fortune," and is believed to have originated with the common play-ing-cards with which the games of poker and whist are at this date played. However, it is evident that the swastika figure is only emblematic of what it originally was, from the fact that it must have been a more useful device
and of very necessary application to have forced itself into the needs of so many widely distributed localities, where its remains are found in prehistoric graves and among relics within the remote area of neolithic people.

Among the Aryans, where our attention is most frequently called, its ancient title is a thing of the past. Not even the legends of that once illustrious nation reflect enough light to determine its entire original form or use; hence, to other sources we must go, and seek the desired information in other nations, and gather up the odds and ends-reassemble, if possible, the scattered fragments into a perfect, systematic, and intelligent whole, as no doubt it once existed.

Thus in the mass of wreckage we occasionally find a statement that approaches as close to facts as could be expected of a tradition after running through perhaps several hundred generations of various national attainments, fragmentary records, and linguistic ability.

Accordingly, "The emblem of the sun in motion, a wheel with spokes, was actually replaced by what we now call the swastika."-Max Miiller.

Writing of Thibet: "Invariably there will be found outside a house four things, among them the white and blue swastika, surmounted by a rudely drawn symbol of the sun and moon."-Perceval Landon.
"A Buddhist priest of the Tang dynasty, in writing on the original Buddha, describes him as having the swastika mark on ${ }^{\text {his }}$ breast; and another writer of the same dynasty records a practice among the people of Loh-yang to endeavor, on the seventh of the seventh month of each year, to obtain spiders to weave the swastika on their web."—Yang Yu, Chinese Minister to the United States.

From George Rawlinson's "Seven Great Monarchies"
we learn, by referring to Chaldea, also Persia, that San was the sun-grod, which he compares to our word sum. "In some places he is called 'the lord of fire,' 'the ruler of the day,' 'he who illumines the expanse of heaven and earth.' This sun-god is known by the symbol The moon-god is known by the symbol (87)."


Fig. I is a copy of an illustration in George Stevens' "Handbook of Old Northern Runic Monuments." The stone it represents was found in Denmark ahout the close of the seventeenth century. The swastika is mentioned as the mark of Woden, with assigned date A. D. $800-900$.

Fig. 2 is a sketch taken from a work entitled "Ilios, the City and Country of the Trojans," by Henry Schliemann. It shows the decoration on a rase-cover unearthed in exploring the site of ancient Troy. The time intervening between the Trojan vase and the Denmark etching places an important, it would seem emblematic, use of the swastika at not less than two thousand years.

Fig. 3 is also from "Ilios," by Henry Schliemann. It is said to be a picture of a conical spindle-whorl excavated from a depth of thirteen and one-half feet. The reader, it is inferred, will shortly be able to grasp the meaning of the incised work without farther reference.


Fig 3.
"Considered finalls, it mar be asked if the fylfot or gammadion was an early symbol of the sun, or, if only an emblem of the solar revolutions or movements across the heavens, why it was drawn square rather than curved : The $\not \subset$, even if used in a solar sense, must have implied more than or something distinct from the sun, whose proper and almost universal symbol was the circle. It was evidently more connected with the cross + than with the circle $\bigcirc$ or solar disk." - R. $P$. Gregg, in " Archoologia," XLVIII.
"The writers of that time affirm that at this epoch the calendar of the Europeans coincided within a few day's with the Aztec calerdar: and the accurate calculation of the eclipses of the sun marked in the Mexican annals even render it probable that the difference obseryed between the two calendars proceeded wholly from our own not having yet undergone the Gregorian reform.
"At the beginning of the sisteenth century, as we have before observed, the dates of the Aztec calendar were
more accordant with the days of the solstices and equinoxes than those of the Spanish calendar.
"The names of the months are sometimes chosen among the lunar mansions, as with the Hindoos; at other times they are those of the dodecatemorions, as in the Dionysian year. On the banks of the Ganges they still say the months Arrow, House, or Head of the Antelope." -Alexander von Humboldt, in "Researches Concerning the Institutions and Monuments of the Ancient Inhabitants of America."

Extracts relative to the subject from scientific and historical writings could be increased to a vast number, but enough, it is presumed, has been considered to establish the assertion that there was and always has been an association between the swastika and the sun and moon; that in localities its original identity has been to some extent retained through an expanse of time and reasonably asserted disuse of perhaps three thousand years.

We are informed by the writings of Moses that men who first inhabited the earth lived to be nine hundred years of age, which statement is correct, no doubt, but it bears out the inevitable conclusion that an error has been made in transmitting events which took place among the inhabitants of the earth who lived several thousand years before Moses and the inauguration of the calendar system according to which he was writing, or the translators have misconstrued his work in the application of a foreign tongue. The problem which they had to deal with was the difference between a result of ancient data and a result of recent data with the same word applied to both results. In our version the reader is guided by the former.

If the records of Moses are inspired or of a spiritual
character, the conclusion must be the same, for the reason that a thing may live in the past or in a spiritual way, as it were, and no inspiration can alter, change, or transform its spiritual existence from what it was into something else-in other words, a translation of the meaning of any language from one to another is regarded as a mechanical process, largely of an exterior influence. Taking the entire subject materially as presented, it is considered very good evidence of the inspiration of Moses and the existence of a system of recording time among ancient people that has become extinct, so to speak, and therefore has not been interpreted by the translators of the past three thousand years, with possibly Moses included, conforming with the presented statement.

Whether or not the calendar system referred to was in any way related to the swastika remains an unsettled question, but that the swastika was, in its entire original form, a calendar, we propose to leave little doubt. This assertion, strange as it may appear, could not be verified without the aid of the "calendar wheel" that was still in use in Mexico at the time of the Cortez invasion.

In order to assure the reader that some of our future reasoning is based on the best scientific authority, it will be necessary to make a few extracts from native authors, who have had the subject under consideration, as the correct method of using the calendar wheel has again, strange as it may appear, been lost on the American side of the Ocpan, with scarcely a generation between the invasion and historical records.
"The swastika is considered to be a form of the cross. There may have been no evolution or relationship between them; but no person is competent to decide from a mere inspection or by reason of dissimilarity that there
was not. We have to plead ignoramus as to the growth and evolution of both cross and swastika, because the origin of both is lost in antiquity."-Thomas Wilson, Smithsonian Report for 1894.
"Fig. 4 represents a swastika made of thin hammered copper. It was found associated with a number


Fig. 4.
of artistically executed copper plates excavated from a pre-historic tomb in Ohio." - Smithsonian Report for $189+$.

Relative to the Aztecs: "The years in a given cycle were designated as among the Mayas, by means of the
numeral. The signs were a rabbit, a cane, a flint, a house."-Valentini.
"They throw the year into great cycles of fifty-two each, which they call sheaves or bundles."-Prescott, in "The Conquest of Mexico."
"To enable them to specify any particular year, they divided the great cycle into smaller cycles or indictions of thirteen each. They then adopted two periodical series of signs, one consisting of their numerical dots up to thirteen, the other of four hieroglyphics of the year." -Prescott, in "The Conquest of Mexico."
"The division of the year into four seasons-a division as devoid of foundation in nature as that of the ancient Aryans into three-and unknown among many tribes, yet obtained in very early times among Algonkins, Cherokees, Choctaws, Creeks, Muyacas, Aztecs, Peruvians, and Araucanians. They were supposed to be produced by the unending struggle and varying fortunes of the four aerial giants who rule the wind."-Brinton.
"By the contrivances of these terms of thirteen days and the cycle of fifty-two years they formed a luni-solar period, most exact for astronomical purposes."-Leon Y. Gama.
"Thus every year had its appropriate symbol, by which it was at once recognized; and this symbol, preceded by the proper number of 'bundles,' indicating the half-centuries, showed the precise time which had elapsed since the national epoch of 1091. The ingenious contrivance of a periodical series in place of the cumbrous system of hieroglyphical notation is not peculiar to the Aztecs and is to be found among various peoples on the Asiatic continent-the same in principle, though varying materially in arrangement.
"The solar calendar above described might have answered all the purposes of the nation, but the priests chose to construct another for themselves. This was called a 'lunar reckoning,' though nowise accommodated to the revolutions of the moon. It was formed also of two periodical series, one of them consisting of thirteen numerical signs or dots, the other of the twenty hieroglyphics of the day. But as the product of these combinations would only be 260 , and as some confusion might arise from the repetition of the same terms for the remaining 105 days of the year, they invented a third series, consisting of nine additional hieroglyphics, which, alternating with the two preceding series, rendered it impossible that the three should coincide twice in the same year, or indeed in less than $2,34^{\circ}$ days, since $20 \times 13 \times 9$ equals 2,340 . Thirteen was a mystic number, of frequent use in their tables. Why they resorted to that of nine on this occasion is not so clear."

The above extract is from the "History of the Conquest of Mexico," by W. H. Prescott; a foot-note to it in the same history follows:
"In this calendar the months of the tropical year were distributed into cycles of thirteen days, which, being repeated twenty times-the number of days in a solar month-completed the lunar or astrological year of 260 days, when the reckoning began again. 'By the contrivance of these trecenas (terms of thirteen days) and the cycle of fifty-two years,' says Gama, 'they formed a luni-solar-period, most exact for astronomical purposes.' He adds that these trecenas were suggested by the periods in which the moon is visible before and after conjunction. It seems hardly possible that a people capable of constructing a calendar so accurately on the true principles
of solar time should so grossly err as to suppose that in this reckoning they really 'represented the daily revolutions of the moon.' 'The whole Eastern world,' says the learned Niebuhr, 'has followed the moon in its calendar; the free scientific division of a vast portion of time is pe-

culiar to the West. Connected with the West is that primeval extinct world which we call the New.' "

Fig. 5 represents a "calendar wheel" such as was in use by the Aztecs in the fourteenth century. This form of "wheel" is illustrated in Clavigero's "Ancient History
of Mexico"; its similarity in outline to the swastika is easily recognized.

It may be well to state here that there were several forms of the wheel, some of which made complete circles without the usual cross in the center; some applied exclusively to the sun, others to the moon only; but all were developed, as far as the writer's exerience is concerned, from the one general or fundamental principle.

William H. Prescott was born in Massachusetts in the year 1796. He is the author of "History of Ferdinand and Isabella," "History of the Conquest of Mexico," "History of the Conquest of Peru," and a partial "History of the Reign of Philip II. of Spain." He died in 1859.

Antonio de Leon y Gama was born in Mexico about the year 1735 and died about the year 1800 . He was prominent as an astronomer, and wrote memoirs on "The Satellites of Jupiter," on "The Almanac and Chronology of the Ancient Mexicans," and on "The Climate of New Spain."

Francisco S. Clavigero was born in Mexico about the year 1720 and died in 1793. During his life he served nearly thirty years as a Jesuit missionary among the Mexican Indians; from notes and information gathered while acting in that capacity he wrote the "Ancient History of Mexico."

To the variations made by the priests, who had by appointment entire charge of manipulating the calendar wheel, is due the discrepancy in opinions of writers who have alluded to the astronomical knowledge of the Aztecs, excepting in this remark Humboldt, who devoted his writings relative to "The Mexican Calendar" to the Montezuma Stone, or what is commonly called the Mexican Calendar Stone-a stone simply intended to adjust
chronologically the festivals and sacrificial rites of the people. Nevertheless, he found "the Mexican calendar one of the most complicated, but also one of the most ingenious, to be found in the history of astronomy."

Referring to Fig. 5, the circle is divided into four quar-


Fig. 6.
ters, each indicating a season of ninety-one days. It will be observed later that to correctly operate the wheel it was necessary to have the four divisions of the year, which perhaps otherwise would have consisted of two, terminating at the solsticial points. These four seasons,
which correspond to our winter, spring, summer, and autumn, are represented by the four rectangular arms of the swastika. In the wheel, it will be noted, the four arms are divided into thirteen squares, each of which contains a dot or dots, according to its number and location, extending from one to thirteen, inclusive. These dots were placed in the wheel consecutively, along the spiral line, as shown in Fig. 6, repeating from one to thirteen four times. In this way each year in the Aztec century was recorded, making a total of fifty-tivo, covering all the numbered squares in the wheel.

At the end of the arms along the circumference of the wheel is an opening or disconnecting space, which is similar to the open spaces at the outer ends of the arms of the swastika. These spaces serve as a guide, showing the direction to proceed in making the daily count. As the wheel may be constructed with a left or a right revolution and like results obtained, the example of the wheel figured is called a right revolving wheel, the same as the swastika on the vase-cover from Troy. The openings above mentioned, at the end of the arms, are not an indispensable necessity, as the signs in each quadrant may be used for this purpose. Hence the swastika is sometimes figured as a circle, or a circle with bisecting lines dividing it into four equal parts.

Let us now proceed to explain the progress of the seasons through the quadrants. Each of the thirteen squares in the quadrants of the wheel contains a figure symbolic of the season it represents; these are a cane, a rabbit, a house, and a flint; they indicate the sun movement through each respectively, while the dots in each square refer only to the relative position of the moon.

Notice the four aerial giants, "who rule the winds,"
adjacent to the four quadrants. Seven blasts each blows from his mouth towards the season he is presumed to govern. These seven lines which issue from the mouth of the giants mean that each of the thirteen squares or daily representatives in each quadrant are to be counted over in a circular manner seven times, making ninetyone in each quarter, or a total of 364 days in the wheel. The 365 th or 366 th, as the case may be, were accounted for as holidays at the latter end of the year. However this last remark may apply, we learn from Prescott's history that the terminal adjustments of the Aztecs "brought them within an almost inappreciable fraction to the exact length of the tropical year as established by the most accurate observations." It is astonishing for us to find a calendar among these people, showing as it does many, many years of scientific observations to make such a minute pefection.

With all primitive tribes of the human race the daily changes produced by the sun constituted the first method used as a reference applied to the past or between events. This was followed by a moon record, and each lunation was taken to express a period equal to the number of days each additional lunation contained. Otherwise, if an occurrence was alluded to that happened 295 days previous, it would be stated to have happened "ten moons ago," or "there have been ten moons since."

The full moon marked these periods or divisions, and with much interest the time of the fullness of the moon was looked forward to, as it did by its light relieve some of the dangers attending their crude mode of living, as well as giving other serviceable results.

This reference to and use of the moon as a basis of a calendar system was superseded by the introduction of
the annual sun period, consisting of $365 \frac{1}{2}$ days, which is still in use, retaining the old division of quarters or seasons, and adding twelve divisions to the annual revolution of the sun, now called months, starting the count apparently at any haphazard place.

How the division of thirteen by twenty-eight escaped may be due to the moon making a majority of twelve revolutions annually instead of thirteen. However, a great mistake was made in the arrangement, which we are perpetuating at a sacrifice of a much more convenient way of handling the question. Had they adopted the thirteen-month system with twenty-eight days in each, intercalating at the end of the year any irregularities that may be necessary, we would now be using a calendar system that would be easily retained or called to mind, as each Sunday would come on the same date in all the months, and all holidays would occur on the same day of the week and the same date of the month in all years.

We must accept certain squares in the wheel on which to begin each quarter or season of the year. The column in which these squares are located is the same as that on which the year starts that is in progress. For illustration, we select from the vertical column above the center as follows: the first season, as indicated by five dots; the second season, as indicated by nine dots; the third season, as indicated by thirteen dots; and the last season of the year, as indicated by the top square, containing four dots. Each of these indicators is to be used for the first day in each quarter, respectively, turning in the direction made known by the outer portion of the arms in the wheel.

Then start the first season of the year, as above, with the first full moon on the square containing five dots, which consider equals naught, and proceed along the

broken line as shown in Fig. 7, in the direction of the arrow, counting each square passed over as a day, repeating the circle seven times, including a total of ninetyone squares. It will be noted by this process that the thirtieth day falls on the square containing two dots, thus indicating the occurrence of the second full moon of the first season, and the fifty-ninth day falls on the square containing three dots, indicating that the third full moon of the season occurs on that day. Continuing the count with similar action, the eighty-eighth day falls on the square containing four dots, indicating the fourth full moon of the season on that day. Passing this last fullmoon point with the count of squares to ninety-one, it is found that the moon is two days old on the last day of the first season.

It is essential to know the moon's age at the end of the seasons or quarters to correctly operate the wheel. As this time is continuous in the lunar calendar under consideration, and although this age of the moon is a factor to be used in the beginning of each quarter, it is just as essential to extend the count of the squares or days to include ninety-one in each quarter.

Accordingly, the second season is started with the moon-age of three days on the square containing nine dots; then, treating the revolutions similar to those of the first season, it will be found that the fifth full moon of the year occurs on the thirtieth day of the second season, and the sixth full moon of the year on the fifty-ninth day of the season, and the seventh full moon of the year on the eighty-eighth day of the season. Also on the ninetyfirst or last day of the second season the daily count extends five beyond the full-moon point. Therefore, start the third season with the moon six days old on the square
containing thirteen dots, and proceed as above explained. It will be found that the eighth full moon of the year occurs on the thirtieth day of the third season, and the ninth full moon of the year on the fifty-ninth day of the season, and the tenth full moon of the year on the eighty-eighth day of the season. Continuing the record to the ninetyfirst day, the moon's age is found to be eight days, thus obliging us, according to the index, to commence the last season of the year with the moon nine days old on the square containing four dots.

Treating the fourth season or last quarter of the wheel according to the explanations relating to the preceding quarters, it demonstrates the eleventh full moon of the year occurs on the thirtieth day of the fourth season, and the twelfth full moon of the year on the fifty-ninth day of the season, and the thirteenth full moon of the year on the eighty-eighth day of the season. The maximum moon orbits in any year is thirteen, all of which the preceding explanations have included.

A tabulated construction of the recurrence of the full moon during the year according to the Aztec calendar and the hitherto described method of using it is as follows, beginning with the first full moon one day old on the second day of the first quarter:

2d full moon on the 3 oth day of the Cane quarter.



Fig. 8.

Referring to Fig. 8, which a comparison will show to be a calendar wheel with figures, for simplicity, placed in the divisions instead of dots, it will be found to graphically follow the tabulated statement of the moon, thus making a simple lunar calendar.

In the ancient system the moon was the predominating influence, and all irregularities or intercalations necessary were installed to make the revolutionary time o?
the sun conform to that of the moon. Eventually, when that system was reversed and the sun period mentioned was adopted, the utility of the swastika system naturally went into disuse in what we recognize as the Eastern part of the world.

Referring again to Fig. 8, it will now be in order to take up the question of both sun and moon time, as they are combined in the use of the wheel; and as we are about to give the subject a more annual consideration than was given in the explanations relative to the lunar calendar, it will be apparent to the reader that we are progressing along evolutionary lines. Hence, it will be found unnecessary to ascertain the moon's age at the end of each season in the following luni-solar arrangement.

It is accepted in this explantion that ninety-one days constitute each season or quarter of the wheel; also seven revolutions are made in each quarter, as explained, relative to the lunar calendar, and also the four outer squares of a radial line of same are used to start each season of a year, beginning with the inner square as the first and progressing outward to the last in the vertical or horizontal line, as the case may be.

The squares in these radial lines form the cross in the swastika and are the annual index columns of the wheel, as the first day of each season is indicated progressively, as explained above, for the year on which the first day falls accordingly. At the outer end of each index the divisions of the wheel make right angles to right or left, forming the circumference of the wheel or the straight exterior part of the swastika arms, the angle being made to readily distinguish the index squares from those in the balance of the wheel. The reader will note to this fact the peculiar form of the swastika is attributed.

In these indexes is introduced the Greek cross-the dawn, as it were, of history and inscribed records. It represented a period of time, as did the various parts and entire swastika, including the Greek fret, but finally it was accepted to represent the universal law of God.

That the cross as an emblem came to exist from a more important source than the mere laying or fastening of two sticks together is evidenced by the many who have written or otherwise discussed the subject, and that the cross and swastika were associated in ancient times is also conclusive; but instead of the swastika being a development of the cross, the generally accepted theory, based on a simple and natural process, the evidence very strongly favors the emblem following the swastika.

Referring again to Fig. 8 for the application of the sun and moon revolutionary movements to the wheel, begin the first day of the first season on square No. 5 in the index column immediately above the center of the wheel and proceed uniformly, as explained relative to Fig. 7, to the ninety-first or last day of the season. Begin the second season with the ninety-second day of the year on square No. 9 in the upper right quarter of the wheel, and proceed as with the first season to the 182d day of the year, or last day of the second season. Begin the third season on square No. 13 in the lower right quarter of the wheel with the 183d day of the year, and proceed in same manner as with other seasons to the 273 d day of the year, the last of the third season. Begin the fourth season on square No. 4 in the lower left quarter of the wheel with the 274 th day of the year, and proceed as before to the 364 th day of the year, or last day of the last season, accordingly.

The result of these proceedings, starting with the first
full moon in its first day, on the second day of the Cane, considering the mean lunation of each twenty-nine days, twelve hours, forty-four minutes, two and seven-tenths seconds long, is the following tabulated comparison, giving the number of full moons and the sun days on which they occur, also the dates on which they occur according to the calendar wheel, with proper dates in the seasons of same:

> First Year.

| Moons, | Total Days by Sun. | Total Days by il heel. | Season Dates hyIVheel. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I | Id oh om | 2 d |  | day of | Cane. |
| 2 | 29d $12 \mathrm{~h}+4 \mathrm{~m}$ | 3 Id | 3 Ist | "، ${ }^{\text {c }}$ |  |
| 3 | 59 d ih 28 m | 6od | 6oth | " " | " |
| $+$ | 88d ith 12 m | Sod | 89th | " ${ }^{\prime}$ | " |
| 5 | 118 d 2 h 56 m | I I g d | 28th | " " | Rabobit. |
| 6 | $147 \mathrm{~d} 15 \mathrm{~h}+0 \mathrm{~m}$ | 148 d | 57th |  | ، |
| 7 | 177 d th 24 m | 177 d | 86th | " |  |
| 8 | 206d 17 h 8 m | 207d | $25^{\text {th }}$ | ' | House. |
| 9 | 236 d 5 h 52 m | 236 d | 54 th | , |  |
| 10 | 265 d I 8 h 36 m | $265 d$ | S3d | ، ، |  |
| 11 | 295 d 7 h 20 m | 295 d | 22d | " " | Flint. |
| 12 | $32+d 20 \mathrm{~h} 4 \mathrm{~m}$ | 324 d | 5151 | -• ${ }^{\text {c }}$ |  |
| 13 | $35 t^{\text {d }} 8 \mathrm{~h}+9 \mathrm{~m}$ | $35.3{ }^{\text {d }}$ | Soth | " ، | ' |

Second Year.
$1 \quad 383 \mathrm{~d} 2 \mathrm{rh} 33^{\mathrm{mm} \mid 38+\mathrm{d}}$ Igth day of Rabbit.
Third Year.

| 1 | $738 d$ o6h 22 m | 739 d | 9th day of House. |
| :---: | :---: | :---: | :---: |



Fig. 9.


Fig. 10.

The table has been extended to the second and third years for the purpose of farther illustrating the use of the index columns and to show the precision of their application.

It will now be in order to make an apparent deviation and explain the relation between the triskelion and the swastika.

The triskelion is a figure that gives the mind an impression of motion similar to the swastika. It has arms or lines extending from a central or radial point somewhat like the four composing the swastika, except one has been omitted, leaving but three in the figure we are now dealing with.

The triskelion and swastika are frequently found together, being practically equal in their very remarkable distribution. In the East the triskelion has an ordinary volutional form; in addition it has been given quite an extensive imaginative range in its construction or evolution, as we find it in ancient Sicily represented with three feet and legs joined together and bent at the knee as in running or walking to the left; still remaining the armorial representative of the Isle of Man, of which Fig. 9 is a cut.

In Lycia we find three rooster heads with necks joined together in like manner, pointing their beaks to the right.

In Ireland we have (Fig. Io) a very artistic scroll adoption on bronze with the terminal volutions to the right. Referring to Fig. I, the stone found in Denmark has a combination of three huntsman's horns carved on its surface.

As to what the triskelion has been
 a great number of years and is still considered is appropriately given in the following extract from a paper by Thomas Wilson, Curator, Department of Prehistoric Anthropology, United States National Museum, in Smithsonian Report for 1894: "Pliny attributes the origin of the triskelion of Sicily to the triangular form of the island, ancient Trinacria, which onsisted of three large capes equiiistant from each other, pointing in their respective directions, the names of which were Pelorus, Pachynus, and Lilyb.cum. This statement, dating to so early a period, accounting for the triskelion emblem of Sicily, is much more reasonable and ought to receive greater credit than that of its devolution from the swastika, which theory is of later date and has none of these corroborations in its favor. Whenever or however the triskelion occurred, by whom it was invented, what it represented, how it comes to have been perpetuated, is all lost in antiquity and may never be known;
but there does not seem to be any reason for believing it to have been an evolution from the swastika."

For comparison Fig. II is inserted. It represents an iron spear-head found in northern Germany. The illustration is taken from a publication by J. B. Waring, entitled "Ceramic Art in Remote Ages."

Fig. I2 is an outline sketch of a carved shell from a grave in Tennessee. Presumably, it once had colored figures on its surface, which, on account of exposure, have disappeared. The carved shell is evidently in-


Z゙ig IS.
tended to cover a repetition of ninety-one days or onequarter of a year of a calendar wheel. There are thirteen outside inclosures and seven circles in a separate interior area; also there are four complete circular lines outside the spirals. By revolving on the outside inclosures, counting a day for each, seven times, we obtain the ninety-one days of a season, and this amount repeated four times gives us 364 , the annual number of wheel days.

By a little investigation the reader will find that the swastika calendar system can be worked in its entirety with this form of the triskelion, but much more is dependent on the memory than in the use of the former, as the index columns are practically lost, each season being started on the same day on which the same ends; also the names of the days in each season are, at least in part, a matter of memory.

The natural inference is that the triskelion antedates the swastika, as its invention is not so complete or comprehensive in its application. However, it is not essential at this time to investigate that branch of the subject.

Why the triskelion and swastika came to be two separate affairs the following will serve to explain:

It will be noted, in referring to a previous page, that only three index columns of the four contained in the calendar wheel have been considered. If we continued a consecutive revolution of these columns, and used the fourth in the wheel to guide us through the season of the fourth year, there would be such a discrepancy between wheel time and sun time that the wheel could not be used with the same benefit as demonstrated in the three previous years; therefore, it becomes necessary to make use of but three of the index columns in passing over four years with the wheel, consequently we skip the fourth column and use the same that was used for the first year. Then starting with the first day of the fourth year, which is the rog6th from beginning, on the square containing five in the column immediately above the center of the wheel, and proceeding in the same manner as with the first year, we find the first full moon of the fourth year occurs, according to the wheel, on the 1122 d day from
beginning, the same by mean lunations being 1122 days, 3 hours, 53 minutes, 426 -10 seconds.

There is perhaps no relic at this date that goes farther to verify what has herein been written in regard to the swastika and calendar wheel than the common playingcards in use at this time, laid on a table in the form of Fig. 8. We have the veritable swastika bundle of ancient times. Whence they came is a disputed question, but we again look to the Aryans, where certainly the name originated.

In the pack of cards there are four denominationsclubs, hearts, diamonds, and spades; these in the calendar wheel are cane, rabbit, house, and flint. With both cards and wheel each is associated with thirteen divisions. The club and cane are very similar in appearance; they are intended to represent the foliage of a tree or plant; it is believed their outlines are enough alike to signify they came from the same source. The rabbit of the wheel has been changed to heart in the cards, which was perhaps a benefit to the business for which they have been recently used. However that may be, among the early Oriental astronomers the hare was an important factor, whose influence we recognize at this date in the constellation of the Hare. The diamond and house are four-sided figures, the house being distorted to a rhombusial form in the cards; but both, most likely, represent the "lunar houses" in the astronomy of ancient Asia. Evidently there can be no mistake as to the origin of the spade and flint; one is the outline of a flint arrowhead and the other the same of a flint knife.

The pack of cards is made up of four parts consisting of thirteen in each, or a total number of fifty-two, all of which has been said of the wheel. Fifty-two repeated
seven times made the year of 364 days with one additional at the end to comply with the sun period, but not included in the calendar wheel or card pack; and as this day had neither number nor date, no records could be made or legitimate business done; it was appropriately regarded as a day of rest. With the cards there appears to have, at a very early time, existed a fifty-two-day period, sheaf, or bundle for making records, and seven of these "bundles" or "periods" constituted a year with a day of rest, not included, at the end. More recently we find this method practically reversed, giving us what we now have: fifty-two weeks, consisting of seven days each, with a day of rest included at the end.

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