Chapter 5

Astrology of the Aztecs

One of the objects of imposing interest to visitors to the Century of Progress Fair at Chicago in 1933, was the Aztec Calendar Stone. Quite appropriately it was not in the Fair grounds, for the miserable day-light saving time then in use, and the months of different duration, represented anything but progress over the system of timerecording used by the Aztecs. The cast duplicating the stone is in the Field Museum just outside the north entrance of what was the Fair grounds.

The Calendar Stone, and the calendar pictured directly above it, page 30 herewith reproduced, represent only one of three types of calendars used by the Aztecs. The upper one here pictured was all the general populace needed, for the Aztec year was composed of four seasons of equal length, starting at the time the sun reached the same point of the zodiac each year. The season being known, a glance at this calendar gave the name of the day, and revealed the zodiacal degree occupied by the sun.

Aztec astrologers, however, needed more in their work than the sun's position on a given date. East and west, ancient and modern, astrological practice stressed the importance of the position of the moon as well as that of the sun, and their relation to each other. In natal astrology, for instance, the sign and decanate occupied by the sun show the individuality, and the sign and decanate occupied by the moon indicate the mentality. In horary astrology, especially in selecting the proper time to do something, the aspect of the moon to the sun is most important. For a proposition to have a strong vitality and long lease of life, it should be started in the first quarter of the moon; for quick maturity, just before the full moon. Potatoes should be planted in the dark of the moon, and weeds are killed more easily when the lunar orb is in the last quarter.

Even today a perpetual calendar, showing year after year on what dates the sun and moon will occupy certain signs and when they will repeat any aspect that may be selected, would be an advantage to any astrologer. The more ancient peoples--probably the inhabitants of Atlantis or Mu who colonized the seven ancient centers of civilization, from whom the Chaldeans and Aztecs alike gained their vast astronomical and astrological knowledge--had devised just such a wheel in the form of a swastika. The emblem of the swastika, found on every continent, had its origin in a lunarsolar calendar.

Almost every year astrologers make predictions as to what the eclipses during that year probably foreshow. And to determine this for any particular country, they must know in what house of the chart the eclipse falls. Ancient astrologers also required, for the practice of mundane astrology, to know the dates on which eclipses would take place, and in what houses of the horoscope they would fall. To determine this, as well as to check the swastika calendar at certain intervals, they devised a third form of calendar, the triskelion. But before explaining the use of either the swastika calendar or the triskelion calendar, we

should first discuss the popular season calendar and the calendar stone, both of which are illustrated at the commencement of this chapter.

The Popular Season Calendar

The Aztec nation, like the Sumerians of Asia Minor, kept careful records of events and maintained an astronomical department. The statistical method, which the Church of Light Astrological Research Department is so successfully employing, is not a new thing. The astrology of the ancients was founded upon the comparison of the positions of the heavenly bodies with the events which happened.

The Anu-Enlil series, recorded in cuneiform writing, extends back to observations in the valley of the TigrisEuphrates earlier than 2750 B.C., and is believed to have covered an almost unbroken period of at least a thousand years. The later fame of the Chaldeans was founded upon the accuracy secured through the use of these comparative records. How far back the comparative astrological records of the Aztecs go has not been determined because, with the invasion of Mexico by the Spanish, every effort was made to destroy all records. Don Juan de Zumarraga "collected these historical paintings and records from every quarter." He caused them to be piled in a "mountain heap," as it was called by Spanish writers, and reduced them to a pile of ashes.

But the Calendar Stone was not so easily destroyed. Smaller stone records might be broken up, but this wheel was a mass of basaltic porphyry eleven feet, eight inches in diameter, and weighed some twentyfour tons. Sometime between 1551 and 1559, after the execution of such Aztecs as were known to possess historical or astrological knowledge, Friar Alonso de Montfar had the stone secretly buried. No one suspected its existence for over two hundred years until 1790, when some workmen, excavating in the Plaza Mayor, unearthed this huge testimony of astrological knowledge, and it now rests in the Mexican National Museum.

To understand the use of this stone we must understand the use of the swastika in recording dates. Fortunately there has been bequeathed to us a complete swastika recording wheel, such as the Aztec astrologers used. This complete swastika wheel for determining astronomical positions for any given date was sketched by Diego Duran, and is included in his *History of the Indians of New Spain*. This was written earlier than 1588, and Duran, who was a native of Tezcoco, paid the penalty for his temerity by being excommunicated and burned alive by the Spaniards.

The four arms of the swastika (see reproduction of Duran's sketch at bottom corner of illustration on page viii) represent the four seasons of the year. Each of the four seasons, commencing with the winter solstice, about December 22, consisted of exactly 91 days. The four seasons, therefore, embraced 364 days; but the Aztec year contained 365¼ days. To allow for this discrepancy, each year had at its end a festival day, and each fourth year contained two festival days, called "enmontemi," or useless days, because on these days no work was done. Each of these four seasons had a name, and was composed of seven weeks of thirteen days each. The names of the four seasons were: 1. Reed. 2. Rabbit. 3. House. 4. Flint Knife.

Historians, both early and late, because they scorn to know anything about astrology and are equally ignorant of universal symbolism, have uniformly made the mistake of considering the twenty pictures of the calendar reproduced at the top of page viii to represent the days of a twentyday month, there being eighteen such months in a year. It remained for Edward Butt, a civil engineer of accomplishment, the president of the Kansas City Science Club, to show how ridiculous such an assumption is, and to prove conclusively that these twenty pictures are the names of the thirteen days of each week plus the names of the seven weeks of each season. His researches have shown how the common calendar, the swastika calendar, and the triskelion calendar, were used to record and predict astronomical phenomena. This makes it possible for me here to indicate their importance in the astrological practice of the Aztecs.

In the single season calendar--the upper illustration at the commencement of this chapter--the dots in the outer circle adjacent to each picture indicate the picture is that of the first, second, third, and so forth day; or of the first, second, third, and soon week. Their names are: 1. Crocodile. 2. Wind. 3. House. 4. Lizard. 5. Snake. 6. Death. 7. Deer. 8. Rabbit. 9. Water. 10. Dog. 11. Monkey. 12. Hay. 13. Reed.

After the Reed, opposite which are thirteen dots to indicate it to be the thirteenth day, there is a jaguar, opposite which is one dot, to signify it to be the first week of the season. The names of the seven weeks are: 1. Jaguar. 2. Eagle. 3. Vulture. 4. Sun. 5. Flint. 6. Rain. 7. Flower.

Just as we assume that most people know that Wednesday is the fourth day of the week, and that July is the seventh month of the year, without our placing a number before them to indicate it, so the artisan who made the huge Calendar Stone assumed that it was unnecessary to place the customary dots, representing numbers, opposite the pictures of the thirteen days and seven weeks. Yet in this circle of pictures around the central part of the Calendar Stone are to be seen the same twenty characters, in conventionalized form, that are to be seen in the season calendar reproduced above the Calendar Stone at the head of this chapter.

In the Calendar Stone, however, as you will observe, they start at what in a birthchart represents the tenth house occupied by the first day of the week--the Crocodile--and proceed from this zenith position contraclockwise, in the directions the planets move through the zodiac in a birthchart, which is also the manner in which the signs of the zodiac follow each other when we face the south, or erect a chart of the heavens as viewed while facing south, which is the way they appear in a birthchart erected for a point north of the equator. That is, they go around in the opposite direction from the other singleseason calendar reproduced above the Calendar Stone, which follows an order of succession clockwise around the circle, as the signs of the zodiac follow each other when the observer faces north, this being the order the symbols follow on the north facade of the famous Bok Tower in Florida. Yet in each calendar the fourteenth picture is the jaguar, representing not one of the days, but the first week of the season.

If we wish to designate a certain date, we may say it will fall on the day of the week, Monday, on the eighth day of the month of January, in the year 1934. The Aztecs would say this same date falls on the day of Coatl (serpent), the week of Quauhtl (eagle), in the season of Acatl (reed), in the year designated by the triskelion.

The date thus recorded informs an astrologer--American or Aztec, according to the system used--the degree of the zodiac occupied by the Sun. In this case, the date falling seventeen days after the winter solstice, the Sun is seventeen degrees from this point--its movement being approximately one degree per day--which we call the eighteenth degree of Capricorn.

As I have an ephemeris for 1934 at hand, I can easily determine that the Moon is in Libra, making the last square aspect to the Sun. Yet if I were asked where the Moon will be on some date in 1960 or 1970, I would have to employ the Metonic Cycle, discovered by a Greek named Meton about 433 B.C. It consists of 235 synodic months (from New Moon to New Moon), which quite closely equal 19 common years of 365¼ days. 235 months equal 6939 days, 16 hours, 31 minutes. 19 tropical years (the year commonly used) equal 6939 days, 14 hours, 27 minutes. Thus at the end of 19 years the New and Full Moon recur on the same day of the year, but 2 hours, 4 minutes later in the day. The calendar of the phases of the Moon thus for 1934, 1952 and 1972 are the same, except that intervening leap years may change the dates by one day. From the sign and degree occupied by the Sun on a given day, when the day is indicated as a definite number of days before or after New Moon or Full Moon, it is thus possible to ascertain for any given date in advance of ephemeris publication what sign the Moon will occupy.

However, the number of presentday astrologers who can do this is quite limited. Yet the Aztec astrologer could locate by the triskelion the relation of the Moon to the Sun at the commencement of some year near the date required. Then by counting forward or backward on the swastika calendar from the date so located he could instantly find each day of

the year, or any year near it, when the same relation existed between Sun and Moon. That is, he could employ the swastika calendar to do the same work we use the Metonic Cycle to accomplish. The common calendar, just described, enabled him to know the degree of the zodiac occupied by the Sun. Then knowing the distance of the Moon from the Sun on this day of the year, mental arithmetic would indicate just what sign the Moon would occupy on that date.

Aphotographic reproduction of the Swastika Calendar wheel, as sketched by Diego Duran in his *History of the Indians of New Spain*, a book written before 1588, will be found at the lower lefthand corner of the illustration on page viii. We owe the preservation of this sketch to the desire of those who had Duran executed to keep tangible evidence that their action was justifiable. The drawing of a Swastika Calendar was retained by them as prima facie evidence that the writer had affiliations with the devil. According to historical records, "this second calendar arouses a holy indignation in the early Spanish missionaries, and Father Sahagun loudly condemns it as most unhallowed, since it is founded neither on natural reason, nor on the influence of the planets, nor on the true course of the year; but it is plainly the work of necromancy, and the fruit of a compact with the devil."

The Swastika is not a single season calendar like the Calendar Stone and the other one whose use I have just explained. Instead, it is a calendar for the whole year, each of the four seasons commonly being indicated by a picture of its name. The Swastika Calendar's square compartments each represent one of the thirteen days of the week, the particular day being designated, not by the number of dots in each compartment, as in the season calendar, but by counting clockwise around each swastika arm, commencing with the compartment next to the wheel's hub for the first day. Thus in the illustration at the bottom righthand corner of page viii, the first day of the week of the first season is represented by 1, the second day by 10, the third day by 6 and the thirteenth day by 5. That each season has seven weeks is indicated by the seven vocal expressions issuing from the mouth of a human face adjacent to each arm of the Swastika. The first day of the second season is at 4, the second day is represented by 13, the fifth day by 1 and the thirteenth day by 8.

The Aztec system of dividing a year into four seasons, each containing seven weeks of thirteen days, is thus represented in this calendar. The thirteen compartments in the upper lefthand arm each have the picture of a reed, representing the first, or Reed, quarter of the year. The thirteen compartments of the upper righthand arm show a rabbit's picture, indicating the second, or Rabbit, quarter. The thirteen compartments of the lower righthand arm have a house, picturing the third, or House, quarter of the year, and the thirteen compartments of the lower lefthand arm, show a flint knife, representing the fourth, or Flint Knife, quarter.

Near Mexico City one huge pyramid erected to the Sun and another to the Moon attest the importance placed upon these luminaries by an ancient people. The positions of the Sun and Moon in the zodiac, and the aspects made by them to each other, have ever been considered of prime importance whenever and wherever astrology has been practiced.

The Aztec Swastika Calendar was designed not only to reveal, at any date, the relation of the Sun and Moon to each other and the recurrence of astronomical phenomena, but to indicate also numerical relations and spiritual verities. No student of Ancient Masonry can fail to perceive the significance of the positions occupied by the Sun, Moon and five planets in the Aztec season calendar illustrated at the commencement of this chapter. He will gather that the Sun and Moon as there pictured are symbolic of the relation between man and woman; for the astrologers of ancient times were not interested in conjunctions and other aspects of Sun and Moon merely as astronomical facts, but also as corresponding to the spiritual possibilities of the human soul, and as aiding man to scale the spiritual heights. He will perceive further, that those who designed the Swastika Calendar were aware of the means that must be employed by the soul of every life form, including that of man, to make evolutionary progress. A belief is indicated that all energy, physical, intellectual and spiri-

tual, is the offspring of positive and negative forces, symbolized by Sun and Moon; for the spiral which results is an integral part of the Swastika Calendar.

Consulting either of the Swastika Calendars at the bottom corners of the illustration on page viii, if you will start at the hub with 1 and trace a line through consecutive numbers around the wheel--2, 3, 4, 5, 6, and so on--you will find that the line so formed is a spiral. As that information is already set forth fully in Brotherhood of Light Course IV, *Ancient Masonry*, it will serve no adequate purpose to trace the religious conceptions of the Aztecs further. Students of that course know that such a spiral implies a belief in the evolution of the soul, not merely on earth, but also in the endless vistas of the afterlife. As it further indicates the means by which the perpetual progress may be hastened, it is no wonder that Father Sahagun considered the wheel "plainly the work of necromancy."

Midsummer Sunrise and the Ancient Rites of Stonehenge

Now to more clearly indicate the point of departure which the Aztecs used in their calendar system let us temporarily leave America and go to the County of Wiltshire in England. There may be seen the ruins of what is probably the most perfect example of its kind of an ancient temple of the Religion of the Stars. Stonehenge has been reconstructed as a model; and archaeologists are able to furnish a detailed description of its original appearance and structure. Their opinion is that it was built about four thousand years ago.

The history of the region goes back about half that far, only to the time of the Roman conquest. At this much later date Roman history records that the Druid priests taught many things about the size and dimensions of the stars, that they believed the soul of man has previously occupied lower forms of life, and that after death man lives, much as he lives on earth, in some superior region. With such accounts of the beliefs of those still inhabiting the vicinity at the time of the Roman invasion, let us read Stonehenge in terms of its own language, the language of universal symbolism.

The outside of this temple consists of a circular earthwork three hundred feet in diameter. Because the constellations surrounding the zodiac and picturing its influence are composed of an infinite number of stars, such a mound, not distinguished by clearly marked divisions, well represents the surrounding starry firmament.

Immediately within this earthwork originally was a circle of small "foreign stones," the foundations of which only now remain. These "foreign stones" represent the influence of the zodiac and its divisions. Then, interior to these, comes a complete ring of hewn stones with lintels mortised to their tops, making a series of doorways. These doorways, extending completely around the circle, are not made of "foreign stones," because the houses of the birthchart are not dependent upon stellar influences, but upon the position on the earth where such influences fall.

Inside this ring of stone doorways is another ring of "foreign stones," indicating the motion of the planets in their orbits. Within these is a horseshoe of five dolmens. The number five is the symbol of man, and was so considered in all the ancient schools. A dolmen, consisting of two upright stones with a horizontal stone top, is a doorway; the horizontal stone conveying the idea of a higher plane. The five dolmens signify the belief that man passes through the doorway of physical dissolution to continue life and effort in a higher realm.

Within the five dolmens is a horseshoe of "foreign stones." The horseshoe form is the symbol of the feminine in nature, even as the single upright stone is the symbol of the masculine. The crescent is also the symbol of the Moon.

Within the curve of this horseshoe is a flat, horizontal slab of stone serving as an altar. In this temple many different ceremonies were performed, but only one will be mentioned here. The neophyte to be initiated, standing on this slab of stone within the horseshoe at sunrise on the day of the summer solstice, portrayed the ageold mystery of the virgin conception.

In the center of the avenue of approach, and so located that the rising Sun on the longest

day of the year sheds its rays directly over it into the horseshoe and upon the altar, is a large, unworked, upright stone, representing the Sun and the masculine in nature.

In nature there is a constructive principle and a destructive principle. Light is the universal symbol of the constructive attribute, while darkness is representative of that which is destructive. At the time of the summer solstice the day is longest, the Sun highest in the heavens. Symbolically, the power of light then reaches its maximum. The neophyte, standing on the altar, as the rising Sun that day sheds its light over the Sunstone, represents the soul within the womb of matter, reunited to its divine source by a spiritual ray.

The avenue and its stones indicate the steps he has taken to reach his present illumination. His position reveals his knowledge that physical life is merely a period of gestation, from which he will be born into the life of a more glorious existence. He is surrounded by symbols that represent the mundane houses, the zodiac and the planets, indicating that he recognizes their influence both upon his life here and upon his life on the higher plane, signified by the dolmens.

The "foreign stones" which represent the influence of the zodiac, the circling planets and the crescent Moon, have not been quarried, as were the other stones, in the near vicinity, but to represent their influence coming from afar, have been brought from some distant place.

The neophyte, with the light of the rising Sun shining upon him this longest day of the year, has come into a realization of the meaning of life; that the life below is a preparatory school in which the soul is trained according to the function it is to perform in the universal organization. His soul entered matter to gain this training, and now, as indicated by the rays of the rising Sun reaching him, it is once more consciously united to its ego, to the sun of its divine source. Now and hereafter, astrological forces will play their part. But having arrived at the state of true illumination, he is no longer a neophyte, for he is conscious of his cosmic work.

Commencement of the Aztec Year

People now visit Stonehenge on Midsummer Day to watch the sunrise at the summer solstice exactly over the "Hele Stone," as it is called. This and the other solstice point are easily determined without delicate instruments, and constitute natural starting points for recording time and astronomical phenomena far better than our first day of January, which is some nine or ten days after the winter solstice. At the summer solstice the shadow cast by a stake at noon, as determined by a tracing in the dust, is shortest. At the winter solstice, the shadow cast by the stake at noon, as determined by tracings in the snow, is longest. Thus to determine these dates is a simple matter.

The power of light reigns supreme at the summer solstice. At the winter solstice the power of darkness is defeated, the stone of the tomb of winter is rolled away, the nights cease growing longer, and there is giftgiving and rejoicing. With this explanation of why the Aztec year commenced at the winter solstice, let us use the Swastika Calendar to determine, Aztec fashion, the recurrence of some particular aspect between Sun and Moon.

One method of procedure is to commence with the relation of the Sun and Moon on the first day of the year, and follow through the year, noting each time the same relation occurs; then from this to determine on just what days the particular aspect reaches a state of perfection. Thus, if the first day of the year was just two days after the New Moon, as determined by observation, each of the days noted would again be two days after the New Moon; and as the Moon moves approximately thirteen degrees a day, the day of the week when any aspect forms can be computed. In this method, it should be noted, there is a shift backward of two days for compensation when entering the fourth season.

Now suppose some aspect, no matter which one, occurs between Sun and Moon on the first day of the year. This first day of the year is represented by 1 in the upper lefthand arm of the swastika. Call this the starting point, and make two complete circuits and a

fraction in the direction of the faint dotted tracing in the Swastika Calendar at the lower righthand corner of the illustration on page viii until, as shown by the arrow, you arrive at 2. Two is the fourth day from 1, and as two and a fraction circuits of the thirteen day week have been made, the second time the aspect is made is on the fourth day of the third week of the first season.

Then commencing at 2, make two more complete circuits and a fraction, until you arrive at 3. As 3 is the seventh day from 1, and as four and a fraction circuits have been made, the third time the aspect occurs is on the seventh day of the fifth week of the first season. Making two and a fraction circuits more brings you to 4, indicating that the fourth time the aspect occurs is on the tenth day of the seventh week of the first season of the year.

Now as there are three days remaining to complete the seven circuits of the first season--13, 9, 5--in starting the second season you count ahead three--4, 13, 9--and call 9 (A) the starting point for reckoning the second season. Two and a half circuits from this point brings you to 5. As 5 is the second day removed from the starting point (A), and as two and a half circuits have been made, it indicates that the fifth time the aspect occurs in the year is on the second day of the third week of the second season.

Following this system, and bearing in mind the carrying over of the days into the next season, when this transition occurs, one can calculate, on the Swastika Calendar, the period of recurrence for any given luminary aspect. But to predetermine the proper starting point for calculating the days on which a given aspect between Sun and Moon will occur requires something else. The something else which was employed by the Aztecs was:

The Triskelion Calendar

Historians, only because they are ignorant of universal symbolism, have tried to explain the calendar shown in the upper righthand corner of the illustration on page viii as representing the 18 weeks of 20 days each in the Aztec year. Plainly shown in the center is a picture of the Sun, with its rays extending outward. Covering a portion of the Sun is a New Moon. The only time the Moon covers the Sun's face is when an eclipse takes place. The only time there is an eclipse of the Sun is when a New Moon occurs, which, as soon as new, has the crescent appearance shown in this picture.

As it is obviously the picture of a solar eclipse, why try to make anything else out of it° The eighteen symbols around the outside of the figure are thus proclaimed to relate to eclipses. As eclipses occur under almost the same conditions after 18 years, 11 and onethird days (18 years, 10 and onethird days when five leap years instead of four intervene), it is evident that these 18 symbols are the names of each year in the eclipse period. This period of 18 years, 11 and onethird days was called the Saros by the Chaldeans, who used it in predicting eclipses. It is highly probable that the Aztecs gained their knowledge of this period from the same ancient source as did the Chaldeans. The period, according to modern astronomers, is remarkable from the fact that after this elapse of time the Moon has passed through perigee 239 times, and is almost exactly the same distance from the earth as at start, as well as being at the same phase and same distance from a node. That is, almost the same conditions recur as affecting New Moons and eclipses.

Again applying universal symbolism to the picture, we find that the symbols are grouped by threes, suggesting that each symbol is, in some manner, to be used three times. If each symbol represents a year of the eclipse period, and all are repeated three times, we have a still larger period of 54 years.

As the Saros, or 18 year period, contains a fraction of a day--to be precise it is 18 years, 11 days, 7 hours, 42 minutes--the eclipse that takes place after such a lapse of time does not occur at the same place. That is, if the first eclipse took place on the midheaven of a map for a given place, the eclipse after an eighteen year period would probably occur below the western horizon. But after three of these Saros periods, the eclipse would occur again in almost the same heavenly position it did the first time, and its shadow would be

observed in practically the same place on the surface of the earth. That is, if it took place on the midheaven once, 54 years, 33 days later it would take place 13° degrees east of the midheaven, or just about in the middle of the tenth house.

The Chaldeans had a still larger period, called Naros, which consisted of 600 years. This period is supposed to bring the Sun, Moon and nakedeye planets back to the same zodiacal degree they occupied, on the same day of the year, every 600 years. If this period is as perfect as has been claimed by some astronomers, it would be possible for a birthchart to repeat, and except for the influence of the upper octave planets, similar characters to be born at 600 year intervals. However, the fixed stars would have shifted relative to the zodiac a little over 8 degrees. I mention this merely to indicate that in the valley of the TigrisEuphrates still larger periods of time were made use of than the "bundle of years" consisting of 54 years, 33 days, which constituted the equivalent of century to the Aztecs.

As we reckon time from a given point as being in the first century or second century, so the Aztecs reckoned time as being in the first bundle of years, second bundle of years, and so on. The commencement of a "bundle of years" was easily ascertained by observation; for at that time an eclipse of the Sun would be visible in some predetermined region of the heavens.

The Saros periods were named after the first year, second year and third year of each period. Each of the 18 years had a name. These names translated mean: 1. Want of Water. 2. Boning of Men. 3. Short Feast. 4. Long Feast. 5. Dry. 6. Porridge. 7. Little Feast. 9. Birth of Flowers. 10. Fall of Fruit. 11. Time of Bloom. 12. Arrival of the Gods. 13. Feast of the Mountains. 14. Bird. 15. Feast of the Flags. 16. Fall of Waters. 17. Severe Weather. 18. Resuscitation.

Thus the seventh year of the first Saros was called the year Tecuilhuitonth, of the period (Saros) Atacahualco (Want of Water). The ninth year of the second Saros was called the year Tlaxochimaco of the period (Saros) Tlacxipehualiztli (Boning of Men). And the fourteenth year of the third Saros was called the year Quecholli of the period (Saros) Tozozontli (Short Feast).

The Aztecs kept accurate records of all celestial phenomena, including eclipses and New Moons. That they observed the positions of the five nakedeye planets and made use of them in their predictions is evident from the pictures of these planets occupying so prominent a place in the single season calendar reproduced at the commencement of this chapter. But the knowledge of just how they handled these other five orbs, and made use of them in their astrology seems to have perished in the flames of the "mountain heap" of documents and historical records so assiduously collected by Don Juan de Zumarraga. How they ascertained New Moons and eclipses, however, and were able to predict their zodiacal and birthchart positions far in advance, is set forth by these calendars we are discussing.

Eclipses occur at frequent intervals. In fact, there are always two solar eclipses and there may be as many as five, during a single calendar year. Some years there are no lunar eclipses, but in other years there are two; so that at rare intervals as many as seven eclipses occur in a single calendar year. There can never be more than three lunar eclipses in a year. In a single Saros period there are usually about seventy eclipses, varying two or three, one way or the other, as new eclipses come in at the eastern limit and go out at the western. Of the 70 about 29 are lunar and 41 solar. Of the solar eclipses, which are considered to be of much greater importance both by the Aztecs and by modern astrologers, approximately 27 are central, 17 being annular and 10 total. Yet although somewhere on the earth there are about 10 total eclipses in 18 years, as the shadow of totality averages less than 100 miles in width, it covers only about 1/200 of the earth's surface. This means that any given locality on the earth will be in the path of the total shadow in the long run only about once in 360 years.

An eclipse of the sun can take place only at new moon and an eclipse of the moon can take place only at full moon. Such eclipses could be predicted, not only as to date but as to the certainty that the shadow would or would not fall on Mexico, and that it would occur in a certain area of the sky which we call a given mundane house, by the Aztecs. But it should not be thought that they, or the Chinese or the Chaldeans, attained any-

thing like the precision our modern astronomers attain in predicting these or other astronomical phenomena.

An eclipse of the sun usually is not coincident with new moon, although in astrology the new moon or full moon which is an eclipse gives the time for erecting the chart and the degree and minute used for ascertaining the influence of the eclipse. Although the new moon and the eclipse are never more than a few minutes apart, an eclipse of the sun is the relation of the moon's shadow to the surface of the earth. To determine the moment of eclipse at a given place on the earth where it is visible, the moon's parallax must enter into the calculation. The moon's parallax is the angular distance from the earth's center the point on the earth under consideration is as viewed by an imaginary observer on the moon. The computation of the various elements of a solar eclipse to outline its shadow and its time not only was far beyond the ability of the ancients, but thus to compute these factors of one total solar eclipse requires that a mathematician, with all modern tables available, who is skilled in astronomical calculations, put in about 120 hours of close and exacting work.

The word Saros means "repetition," referring to the fact that an eclipse phenomena repeat after the interval indicated by this period. In reference to solar eclipses the chief difference between two eclipses separated by one Saros is the location of the path of the moon on the surface of the earth, the second eclipse falling some 115° degrees further west than the first one, and some 200 miles farther north or south.

The moon in its orbit around the earth does not follow the same path the sun apparently does. Instead, the orbit of the moon is at an angle of about 5 degrees to the ecliptic, or path of the sun, so that when the sun and moon are exactly in the same degree of the zodiac and thus the same in eastwest position, they may still be several degrees apart in northsouth position. And as the diameter of the sun or moon is only about half a degree, the effect, so far as the shadow is concerned, is as if an object were slightly west of a building in the morning, but ten times the width of the building to the north or south of it; that is, in spite of any eastwest relation, the shadow of the building could not touch it. And thus it is also when the moon is much north or south of the path of the sun at either new moon or full moon.

The nodes are the places where the path of a planet cuts the ecliptic, or apparent path of the sun. The orbits of all the planets, including the moon, have nodes; for they are inclined to the plane of the ecliptic. When the moon reaches either its north node (Dragon's Head) or south node (Dragon's Tail) it is neither north nor south of the path of the sun, and when it is thus a few degrees from either of these nodes it is only a little to the north or south of the path of the sun. Therefore, if a new moon or a full moon takes place at such a time, the effect insofar as the shadow is concerned, is as if an object were slightly to the west of a building in the morning, and not far enough to the north or south of the eastwest line passing through the center of the building but that it is completely or partially covered by the shadow of the building. The object is thus partially or totally eclipsed.

Because the moon's orbit slightly alters its inclination to the ecliptic,and because the semidiameter of the moon changes slightly due to its varying distance from the earth, the distance the full moon or new moon must be from one of the moon's nodes to make an eclipse varies within certain limits. If the sun at new moon is within 15° 21' of either node it must be a solar eclipse. If the sun at new moon is farther than 18° 31' from either ofthe nodes it cannot be a solar eclipse. If the sun at full moon is within 9° 30' of either node it must be a lunar eclipse. If the sun at full moon is farther than 12° 15' from either node it cannot be a lunar eclipse. With modern ephemerides which give the zodiacal longitude of sun and moon and the northnode (the south node is always in the degree and minute exactly opposite in the zodiac) it is easy to determine whether a new moon or full moon is in the region which makes an eclipse obligatory, or in the region which excludes an eclipse. But when the sun at new moon is between 15° 21' and 18° 31' from one of the nodes, and when the sun at full moon is between 9° 30' and 12° 15' from one of the nodes, the Saros can be employed as the Aztecs used it to determine if the occurrence is an eclipse; or without any reference to the nodes,the Saros can thus be used to determine if any particular new moon or full moon is an eclipse.

When an eclipse series starts--that is, eclipses which continue to repeat at intervals of 18 years, 11-1/3 days--the first eclipse will occur when the sun and moon are approximately 18 to the east of one of the nodes. The central line of the moon's shadow will then pass about 2,000 miles above the north pole or below the south pole of the earth; which pole depending upon which of the nodes the sun is near. The cone of the moon's shadow will not touch the surface of the earth, but a small partial eclipse will take place near the pole, due to a small part of the penumbral shadow falling there. After the Saros period the eclipse will recur, but the partial eclipse will be a little larger. Then after some 200 years in which there have been a dozen Saros periods the true shadow cone will fall on the earth near the pole and there will be in that region a total or annular eclipse of the sun.

Following this, for some 800 years, after each Saros interval there will be a return of the total or annular eclipse, which at the rate of about 200 miles toward the other pole at each return moves over the equator and off the other pole. After the total or annular eclipse thus moves off the opposite pole from the one where it started, it appears at the pole where it leaves as a partial eclipse which at each return gets smaller. After about 200 years, or about a dozen returns of the Saros intervals, even the penumbral shadow no longer touches the polar region and the series is finished. Such a series of solar eclipses from start to finish has from 68 to 75 returns, requiring from about 1150 to 1260 years. Some 25 are only partial eclipses, but around 45 in the middle of the series are central, about 18 of them being total and about 27 annular. The number varies with different eclipse series.

Lunar eclipses repeat in practically the same way, beginning with small partial eclipses, which after 13 or 14 repetitions become total, then repeating 22 or 23 times as total, to pass out after some 13 more repetitions as partial eclipses, there being some 48 or 49 in the complete lunar series, recurring regularly once in every 223 months during an interval of 865½ years.

In case of the start of an eclipse series, in which the first small partial eclipse at one of the poles had not yet taken place, and in the case of the last small partial eclipse at one of the poles of a series which was ending, it will be apparent that using the Saros period to predict the recurrence would fail. But with these rare exceptions, which are partial eclipses so small as to have little significance, with a table of eclipses which had occurred during one Saros period, any or all of the eclipses which would occur in any other Saros period within a space of several hundred years could be readily ascertained by using the Saros interval. And by means of the Triskelion calendar, which embraced three Saros periods, the Aztecs were able to predict the return after 54 years, 33 days, of any eclipse which had been visible to them of which a record had been kept.

From a table of new moons already recorded, counting ahead from each 18 years, 11 and onethird days would give the dates on which the new moons of any given year would occur. Furthermore, by using the Triskelion Calendar, with its period of 54 years, 33 days, the position of the new moon in the sky, relative to the midheaven could also be predetermined; for after this interval it would be 13° degrees eastward of its position on the previous occasion.

In mundane astrology it is the practice, both ancient and modern, to erect a chart for the exact time of new moon for the particular place about which information is desired, and to use this as a chart indicating the events which will happen during the following lunar month. Now by the use of the Triskelion period of three Saros the Aztecs were able to determine long years in advance, from the new moons recorded during a past Triskelion period, where either a new moon or an eclipse would occur in reference to the midheaven. And this, in turn, would give them the time of day of its occurrence. If it occurred 13° degrees from the midheaven, for instance, this signified it occurred 54 minutes before or after noon; before noon if east of the M.C., after noon if west of the M.C.

As explained in Brotherhood of Light lessons, the aspects made by the sun and moon during the lunar month following a new moon to the places of the planets in the new moon chart, indicate both the time and the nature of the events, within a limit of 24 hours, which

will transpire at the place for which the new moon chart is erected. And it is my opinion that the ancient astrologers made use of just such new moon charts, and the aspects formed by sun and moon during the month to the planets' places.

At least the Aztecs, with their Triskelion Calendar, together with their Swastika Calendar, had devised implements which were quite sufficient to determine solar eclipses, and thus when the disasters accompanying them would take place, to determine when each new moon would occur and to set a chart showing its relative distance from the M.C., and to determine the exact days in advance on which the sun and moon made every aspect formed to the places of the planets throughout the month. For, as already explained, the Swastika Calendar gave the positions of both sun and moon in the zodiac on every day.