

THE GREAT IDOL OF



TIAHUANACO

by H. S. Bellamy and P. Allan

by H. S. Bellamy and P. Allan
THE CALENDAR OF TIAHUANACO

*

by H. S. Bellamy

THE ATLANTIS MYTH
A LIFE HISTORY OF OUR EARTH
MOONS, MYTHS AND MAN
THE BOOK OF REVELATION IS HISTORY
IN THE BEGINNING GOD
BUILT BEFORE THE FLOOD

THE GREAT IDOL OF TIAHUANACO

*An Interpretation
in the Light of the Hoerbiger Theory
of Satellites of the Glyphs
carved on its surface*

by
H. S. BELLAMY
and
P. ALLAN

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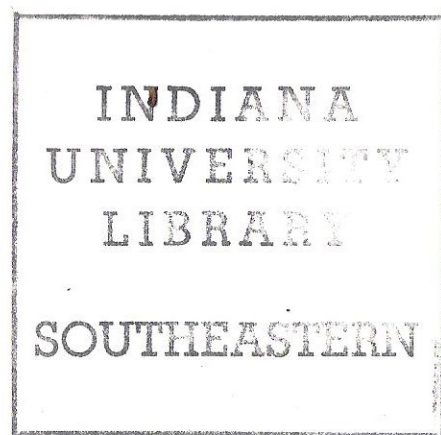
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DEDICATED
TO THE MEMORY OF
ARTHUR POSNANSKY
THE FATHER OF TIAHUANACOLOGY

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Chapter I

INTRODUCTION

I

Once again we invite our friends to join us on a journey to the long-lost world of Tiahuanaco—across that arch of time of unknown span, into that distant aeon of our Earth, where we have led them before on an exciting expedition—for new adventures of the mind. Not so strange may the different monuments of that past culture seem to us now and we may be able to move among them with some confidence even.

Of the various monumental remains of the 'Classical Period' of Tiahuanaco which bear hieroglyphs and symbolisms carved on their surfaces, there are only two which are virtually complete and, as to their degree of preservation, in practically their original state. All the rest are fragmentary: time and weather—and, alas, only too often, the ignorant or malevolent hand of man—have either obliterated the greater part of the symbolisms incised on them, or resulted in the partial, frequently even the far-going, destruction of the monuments themselves. The two monuments which have, by some special lucky dispensation of chance, come down to us in a reasonable state of preservation, are: the megalithic Gateway of the Temple of Kalasasaya, and the monolithic Great Idol. They are, probably, the two most important of all the existing monuments of Tiahuanaco—indeed of all monuments hitherto discovered upon our Earth.

The glyphs on the Gateway of Kalasasaya constitute an amazing Calendar which has been fully described and interpreted in our previous work, *The Calendar of Tiahuanaco*. In the present volume we shall endeavour to describe and interpret the glyphs which cover the whole surface of the Great Idol.

2

While it is not known when and where exactly the Calendar Gate of

Tiahuanaco was originally found, the history of the discovery of the Great Idol is fully known. It is briefly as follows.

In 1903, Georges Courty, of the French Créqui-Montfort Expedition to Tiahuanaco, excavated, in a very desultory manner, the so-called 'Old Temple', a semi-subterranean structure about 70 feet to the east of the Temple of Kalasasaya. It measures about 85 by 96 feet and the top of its walls is about 6 feet below the level of the bottom-step of the Grand Portal of the Temple of Kalasasaya. It was completely filled with alluvial wash, or diluvial deposits. Courty made only a rough excavation along the inside of its walls, down to the floor of the Temple, in the course of which he established that only the inner faces of the stones of which the walls were made were finished, the outer faces, which had contact with the soil, having been left quite unworked. Besides this trench, which was some 5 to 7 feet wide, he did nothing, leaving the 'interior' of the Temple quite untouched.

The 'Old Temple', so called from the rather primitive technique in which it was executed, must have been a building of great importance when it was first built. As can be seen from Diagram 2 the walls of the Temple consisted of huge uprights whose interstices were filled up with ashlar; but many of the two bottom courses of these blocks project somewhat over the general surface, and have been sculptured (somewhat rudely) into the shape of heads, or faces. Their purpose is not clear—unless it is a 'magical' one: that they are supposed to be looking at, or watching, something important which is situated at the centre of the Temple. Reproductions of several of these heads, or faces, may be seen in the photograph of the Great Idol. The Open-Air Museum in La Paz, where the Great Idol is now situated, was modelled by Posnansky to conform as far as possible to the 'Old Temple', and the faces on the walls of this enclosure, looking towards the centrally-placed Idol, realistically reproduce the effect they must have had in their original situation.

In 1932, Wendell Bennett and John Phillips, under the patronage of Mr. Frank Phillips, went to Tiahuanaco for the American Museum of Natural History, New York City. Having obtained permission from the Bolivian Government to sink a few pits with a surface area of not over ten square metres each, Professor Posnansky advised Bennett to sink also one pit within the area of the Old Temple. Accordingly a pit was sunk in the northern half of the Temple. When less than two feet of soil had been removed the huge head of a gigantic monolithic statue was encountered by the astounded archaeologists. The pit was now

widened, very careful digging followed, and finally the whole amazing statue was revealed: The Great Idol of Tiahuanaco. (Diagram 3.)

This statue, the largest and, next to the Calendar Gate, by far the most important object yet found in Tiahuanaco, is of the shape of a monolithic pillar; it is cut from a single block of red sandstone, has a length of 24 ft. 4 in., and weighs about 20 tons. About one quarter of the monolith consists of a plain base. Its head, which takes up about a third of the figure, measures 6 ft. 3 in., its width and thickness at the headband is about 3 ft. 5 in.; the shoulders have a width of about 4 ft. 2 in.; at the waistband the width is about 3 ft. 9 in.; and the plain base also has a width and thickness of about 3 ft. 9 in., tapering towards its bottom end to about 3 ft. 3 in.

It is lucky that the members of the Créqui-Montfort Expedition did not continue to excavate the Old Temple, for they worked neither methodically nor carefully, nor did they take any measures to protect what they had uncovered. That is why most of the stones to be seen on Diagram 2 were stolen while the excavations were still in progress, to serve as building material, etc. Had it been they who discovered the Great Idol it is more than probable that it would have been left exposed and unprotected, and that its carvings would have suffered considerable damage, possibly to the extent of rendering impossible the decipherment and interpretation with which this book deals. This possibility, it is interesting to note, was averted by a very narrow margin, for, as related by Posnansky, the French Expedition in the course of their excavations actually uncovered the uninscribed base of the Idol, but taking this to be merely an unworked block of stone, did not trouble to excavate it further.

Bennett, however, was a very careful and methodical archaeologist and, besides, there was Posnansky always near to see that things were done right; also, the Bolivian Authorities were by now aware of the immense importance of all that the Tiahuanaco site yielded. In spite of all that, however, some damage was done to the front of the statue by careless people treading about on it during the process of its being unearthed: for the rather porous red sandstone of which it is made was sodden and brittle. But let Posnansky tell the story of the finding of the Great Idol in his own words:

'After the superficial excavation carried out by Bennett this magnificent sculptural work was . . . lying in an undrained ditch. The . . . boots of the tourists, and other visitors, had already begun to destroy the surface of the piece. . . . The author suspecting . . . that the back of

the piece probably contained something very magnificent, and to put a stop to the . . . regrettable destruction of one of the most sacred pieces of Tiahuanaco . . . then began to effect an excavation beneath the idol. . . The massive piece was put on a scaffold of wooden crossties . . . on which rested the head and the feet of the Idol. Then was begun an excavation . . . below the body so that the block might be exposed to the open air and dry out. This arduous labour in water and mud was generously rewarded. . . . The author on his back in the semi-liquid mud under the Idol, holding in one hand . . . a candle and with the nails of the other removing from the back of the Idol the last bits of sticky clay, finally saw appear something which had been hidden from the eyes of man for thousands of years: . . . A large collection of figures which had been preserved perfectly, (Diagram 4) due to that reddish and impermeable clay on which the age-old image had rested, as on a bed. . . . Then it was necessary to do everything possible to preserve for ever this relic of inestimable value for the study of the prehistory and religion of American Man. The trench was widened so that the air might circulate freely and the Idol become dry. . . . Its surface was so soft from the action of the humidity of thousands of years on this sandy material (red sandstone) that it broke with the slightest contact. After some days the Idol, which was now resting on the wooden crossties, was sufficiently dry to be given a first coat of a solution of silicate, and a few days later it was given another. These preliminary steps having been taken for the salvation of this unique piece, arrangements were made . . . for the moving of this monument . . . to the city of La Paz before the rough boot of the tourist and the 'yockallas' of the village destroyed it any more. . . . The piece . . . weighed something like twenty tons. . . . It was placed provisionally in the Prado.

' . . . For scientific purposes, the author took a negative mould of the Idol of more than a hundred pieces . . . and a positive one. Each piece was photographed and at once copied . . . and thus all of the details of the famous piece were obtained in more than a hundred photographs. Those pictures later served as a basis for the detailed drawing of the surface. . . . (Diagram 5.)

'After some time . . . the author obtained . . . the necessary facilities for moving it to the . . . Plaza del Stadium in La Paz and erecting this monolithic piece in a place imitating the Temple in which it was found. This was done and today "Pachamama, the Goddess of the Panllevar" of the industrious peoples of the Andes, placed on a massive pedestal, is saved for the generations to come.'

We, and the world at large, cannot be too grateful to the late Professor Posnansky, by whose public-spirited action the Great Idol, probably the oldest of Man's creations on the Earth to which a purposeful meaning can be attributed, has been preserved.

3

When the Great Idol was discovered it was found resting in the 'wash' which fills the Old Temple in a peculiar slanting position, its headband being at a depth of about $1\frac{1}{2}$ feet and its base at 6 feet. Unfortunately, in the excitement of the discovery of the Great Idol, the precautions taken to preserve it, and its removal, the excavations were not continued down to the 'floor' of the Old Temple, nor were any exact stratigraphic observations made. These omissions can, of course, easily be made good: the 'floor' would be interesting, even if the stratigraphic data would probably prove worthless, seeing that the Old Temple appears to be filled with 'wash' only, which, according to Bennett, belongs to 'a single period'. But there seems to be little doubt that the Great Idol originally belonged to the Old Temple, and was not merely thrown into it by man and buried there. For, according to Posnansky, near its base were found four stone blocks—or, rather, slabs—by means of which the monolithic statue may have been fastened, or wedged, to the ground. The statue was found lying on its back, 'with the head to the north and the base to the south, with a slant of 20 degrees to the west of north.' From this Wendell Bennett assumed that it 'faced south when erected, though there is a possibility of a quarter twist in the fall from a position facing east'. Posnansky was of opinion that 'it was thrown to the ground of the Temple of the First Period, at that time already half filled with earth, by the cataclysm which destroyed Tiahuanaco'.

According to Posnansky the Old Temple belonged to the 'First Period' of Tiahuanaco, though Bennett was of the opinion 'that this small semi-subterranean temple was late Tiahuanaco at best'. He admitted to Bellamy that he based his assumption mainly on the observation that the walls of the Temple seemed to be 'shoddily built, partly of well-finished and partly of crude material collected from different places, a practice not uncommon in archaeological America'. Bellamy's opinion is that the small ashlar blocks between the big uprights may be local surface material (whether virgin, or previously used, makes little matter) but that the material of the uprights was brought from some

distance and was specially cut for building the Temple. The Old Temple must definitely have preceded the Temple of Kalasasaya, and all other buildings of Tiahuanaco for that matter, except, perhaps, parts of the fortress of Akapana.

Bennett's opinion as to the original orientation of the Great Idol is of interest as, from considerations given in Chapter 6, Section IX, it would appear that this monument was, in fact, oriented to the east.

It is of interest also that Posnansky was of the opinion that Tiahuanaco was destroyed by a cataclysm. Posnansky was not a follower of Hoerbiger. Indeed, he resolutely declined to accept Hoerbiger's ideas, put to him by Kiss and, later, independently, by Bellamy, as a basis by which many of the enigmatical aspects of Tiahuanaco might be explained. He spent a lifetime studying the antiquities of Tiahuanaco in their every aspect, yet in his writings one may sense a certain bewilderment, a straining after some solution which might account for the puzzles which his researches had continually brought to light. Yet there was always something of the seer in Posnansky. Indeed, his very name points that way. It means: 'One who has discerned something' (from *poznat*, to recognize, to perceive). He seemed at times to feel, more by intuition than by reason, something of the true significance of the enigmas of Tiahuanaco, and he even incurred the derision of some of his contemporaries by postulating for that culture an age of some 17,000 years, which, in the light of the Hoerbiger Theory, might even be an under-estimate. When he ventured the opinion that Tiahuanaco was destroyed by a cataclysm he attributed it to an overflow of Lake Titicaca and to an eruption of the volcano Kayappia. In this he was probably not far off the mark, though to account for these happenings he could only advance 'seismical movements' as the cause. With his great knowledge of Tiahuanaco, how fruitful indeed might not Posnansky's endeavours have been had he seen his way to accept the Hoerbiger hypothesis as a basis on which to build. As it is, his great value to the archaeology of Tiahuanaco rests in his unceasing, and often laborious, investigations, his efforts to preserve as many as possible of the antiquities of that region, and his painstaking documentation and detailed and accurate drawings. In these matters he was unsurpassed. Students of the archaeology of Tiahuanaco will for ever be indebted to him, and his published works will for long remain the chief source of information relating to that site.

The interpretation of the symbology of the Great Idol, to which this work is devoted, is based on the Hoerbiger Theory of Satellites, a theory which has enabled us successfully to interpret the symbology of the famous Calendar of Tiahuanaco. Full and detailed particulars of this Theory are given in works by Bellamy (*see Bibliography*) and only a brief outline need be given here, sufficient for the understanding of its relationship to the antiquities of Tiahuanaco.

According to Hoerbiger, the satellites of planets were formerly independent planets, circling round the Sun in independent orbits. Responding to the effects of the medium pervading interplanetary space, such planets, in the course of long periods of time, eventually trespassed on the orbits of larger, inner, planets and were captured by them. In such wise our present Moon became a Satellite of the Earth, and in such wise also was the predecessor of our Moon captured. It is with this predecessor of our Moon that we are concerned in relation to Tiahuanaco.

This Satellite, after capture, continued its orbital involution under the influence of the interplanetary medium. As it approached nearer and nearer to the Earth it increased progressively in the number of times it revolved round the Earth in any given period. At the same time it speeded up the Earth's rotation so that the number of days in the year increased, though the length of the year remained constant. Eventually the Satellite reached the point in relation to the Earth known as 'Roche's Limit' (about 2 Earth radii), when the gravitational forces acting on it caused it to be disrupted, its material falling to the Earth.

After the destruction of the Satellite the Earth enjoyed a long asatellitic, or moonless, period lasting, possibly, some thousands of years. Eventually, however, the Moon, which during the approach of the Satellite and through the asatellitic period, was an independent planet circling in an orbit outside that of the Earth, came within the gravitational attraction of the Earth and was captured, to become henceforth the Moon which now appears in our skies.

Hoerbiger, in support of his Theory, calculated the behaviour of the Satellite in considerable detail. One of these calculations showed that when at a distance of 5.9 Earth radii the Satellite would revolve round the Earth 447 times in a year of 298 days. As the Calendar of Tiahuanaco shows, the correct (round) figures are 447 revolutions in 290 days. Apparently Hoerbiger, in his theoretical calculations, slightly over-estimated the original rotatory speed of the Earth, resulting in a small

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discrepancy in respect of the number of days in the year of that particular time.

Prior to the recognition of the association between the Calendar of Tiahuanaco and the Hoerbiger Theory, all attempts to interpret the Calendar in relation to our own year of 365 days had met with failure. But with that recognition came results, slowly and laboriously at first, but later with increasing confidence and certainty as the Calendar gradually gave up its secrets, results which established beyond any doubt that the Calendar of Tiahuanaco did, in very fact, relate to a year of 290 days in which a Satellite made 447 revolutions round the Earth.

The symbology of the Great Idol is in many respects similar to that of the Calendar and it was at first thought that it would yield to interpretation on the same basis as that of the Calendar, i.e. 447 revolutions in 290 days. But efforts in that direction met with no success. It was then realized that the number of revolutions and days must have been different, and that, in accordance with the Hoerbiger Theory, there were probably fewer revolutions and days in the year of the Idol than in the year of the Calendar, since the Great Idol was apparently of earlier date. How much earlier, how many revolutions and days in a year, were unknown factors. For some time the problem seemed insoluble, but eventually, as related in Chapter 3, certain clues were recognized which enabled us, at first tentatively, but later with certainty, to establish the basis on which the symbology of the Great Idol was devised.

5

Posnansky studied the Great Idol in detail and eventually came to the conclusion that its glyphs constituted 'an agricultural calendar, devised to the end that Pachamama, the Mother Earth, might give a good return and compensate for the sweat of the labourer'. In recognizing the glyphs of the Idol as a calendar he showed his intuitive sense of their meaning, for, as will be shown in the course of this work, the glyphs on the Great Idol were, in fact, a calendar; but, wedded to his belief that this calendar must necessarily relate to the Sun-Moon-Earth system as of our own day, his attempts to interpret the glyphs in terms of our own year were not convincing. Whether or not the Great Idol was an agricultural calendar is not certain; it may well have been used for such purposes. But there can be little doubt that it was a calendar primarily in the sense of an exact and detailed time-chart recording the



1. The Great Idol of Tiahuanaco in its Present Position in the Open Air Museum in La Paz, Bolivia. (In the Foreground the so-called 'Gigantic Head').



2. Excavation of the 'Old Temple' looking towards the south, showing part of the ruinous West Wall and remains of a drainage system. The Great Idol was found in the soil to the left of the picture.

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movement of the all-important cosmic body which at that time dominated the heavens of Tiahuanaco. Only secondarily it may have been used for timing the sowing and reaping of the agriculturists, if there were seasonal crops in that tropical region at that time. The designs on the towering statue, rising high above the heads of the onlookers, are so delicately incised that even people with good eyesight must have found it very difficult to distinguish in detail, nay, even generally, those inscriptions which were situated higher up, on the head and the shoulders. No. This calendar was a memento for the few rather than for the many; for the initiated rather than for the man-in-the-street; a scientific record rather than an agricultural almanac; a record to endure rather than an ephemeris.

6

The whole surface of the Great Idol is covered with carvings which are very similar to those on the Calendar Gate, both in general conception and in detail. It is therefore certain that the carvings on the Idol indeed constitute a calendar also, apart from any other indications. It is to the interpretation of these carvings that the present work is dedicated. References to 'the Idol' in this and the following chapters should therefore be read as referring to these inscriptions, unless the context indicates a reference to the actual statue. The reference to 'the Calendar' is always to the Calendar of Tiahuanaco on the Calendar Gate of the Temple of Kalasasaya, which has been fully described in our book, *The Calendar of Tiahuanaco*.

The carvings on the Idol have not the clear-cut definition of those on the Calendar, which shows a greatly advanced technique and skill. Also, the Calendar is carved in extremely hard andesite, whereas the Idol is composed of a comparatively soft red sandstone. As may be seen from the photographs, many of the symbols and marks on the Idol are indistinct. Our interpretations are based, however, on drawings made by Posnansky who worked, not only from photographs, but also directly from the carvings.

The Idol also differs in another important point from the Calendar in that there are few of the 'reading helps' or 'pointers' which in the latter directed and guided the interpreters to the reading of the symbolisms. The interpretation of the Idol, therefore, depends to a very great extent on the experience gained from the Calendar, and by analogies and inferences from, and comparisons and correspondences with,

that sculpture. The differences between the two were also of assistance. Indeed, it is not too much to say that without the experience and knowledge gained from the Calendar, the Idol inscriptions must for ever have remained unsolved. To a certain extent, therefore, the present book should be regarded as supplementary to our previous work on the Calendar, since it is not practicable to reproduce the long and sometimes involved arguments leading to certain conclusions.

It should be understood, however, that we do not claim to have interpreted all the carvings of the Great Idol finally and completely. As will be seen, the first step in the interpretation is to establish the eclipse cycle on which the symbology is based, and the second step is to find the number of days in the year, so that the number of lunations in the year may be calculated. These are the most important matters and if, by consideration of certain parts of the carving, they can be established with a reasonable degree of certainty the interpretation of other parts not directly concerned with these matters is of relative unimportance, however desirable it may be that a full and comprehensive interpretation should be made. Our claim is, therefore, that by consideration of certain symbolisms, the eclipse cycle on which the symbology of the Idol is based has been established beyond any reasonable doubt and that the number of days in the year of the Idol has also been established, though with lesser certainty. The remaining parts of the carvings have been interpreted in the light of the figures arrived at for the eclipse cycle, insofar as we have been able to penetrate the meaning of these symbolisms; but, because of certain obscurities in the symbology and also because of certain doubtful points relative to the application of the eclipse cycle to the actual year, we do not claim that these interpretations are final and complete. Obscurities remain, to be reconciled in the light of greater knowledge of the symbology, and especially in the light of fuller and more precise data regarding the astronomical conditions appertaining at the time, particularly in regard to the orbit of the Satellite in relation to the Earth and the Sun as observed from Tiahuanaco.

The inscriptions on the Idol relate to the same general archaeological period as those on the Calendar, that is, to the 'Classical Period' of Tiahuanaco. So much is evident from their general resemblance. However, as will be shown, the Idol inscriptions are of an earlier date than the Calendar. How much earlier—we do not know, though no very long period of time can have elapsed between the two. It is safe to assume, therefore, that the 'year' of the Idol, that is, the solar year, was

the same *length in hours* as the year of the time of the Calendar, and that, as in the year of the Calendar, the Autumnal Equinox fell in the aphelion half of the year. The number of days in the year, however, was undoubtedly fewer at the time of the Idol, a matter which will be amply discussed in a later chapter. The obliquity of the ecliptic was probably a little greater than at the time of the Calendar. This also will be discussed later. The latitude of Tiahuanaco, which, at the time of the Calendar, was 10° S, though it is now $16\frac{1}{2}^{\circ}$ S, was probably at the time of the Idol also 10° S. This is inferred from the Condor-headed Winged Figures on the Turban (the only such of which photographs are at present available) which look upwards at an angle of 80° , as do similar Figures on the Calendar. As these Condor Figures may be regarded as looking upwards to the meridian Sun at the Equinoxes, the angle of 80° implies a latitude of 10° . Any change of latitude (which was due to crustal movements of the Earth's surface) must necessarily have been very slow, and as the period between the Idol and the Calendar cannot have been very long, it is only to be expected that the latitude of Tiahuanaco at the time of the Idol should not have changed, at least to any appreciable extent, during the interval between these two monuments.

The year of the Idol differed from that of the Calendar, however, in respect of the number of times the Satellite revolved round the Earth. At the time of the Calendar it made 447·7664 revolutions in a year of 290·4 days. At the time of the Idol it appears to have made 425 revolutions in a year of 288 days; more precise figures are not, as far as can be recognized at present, indicated on the Idol.

As will be evident to those who have worked through our book on the Calendar of Tiahuanaco, all these points are in keeping with the teachings of Hoerbiger's Theory of Satellites, that most fertile of the more recent cosmological speculations.

Many of the differences between the symbology of the Idol and that of the Calendar arise from the different eclipse cycles resulting from the different number of revolutions of the Satellite in each of their respective years. As will be shown, the eclipse cycle of the Idol consisted of 283 lunations in 192 days, divided into eight sub-cycles (corresponding to eight Twelfths of 24 days each), each of $35\frac{3}{8}$ ths lunations, whereas the eclipse cycle of the Calendar consisted of 37 lunations in 24 days.

That the year of the Idol was divided into twelve Twelfths is inferred from the Meander, which has ten bays containing relative symbolisms. But one of these bays is of larger size than the others and contains a

INTRODUCTION

symbolism which obviously has a 'double' significance, and thus evidently stands for two Twelfths, so that the ten symbolisms in the bays actually count for eleven Twelfths. As on the Calendar, the Main Figure on the Idol counts as one Twelfth, so that, altogether, there are twelve Twelfths in the year of the Idol.

On the Calendar it was shown that the division of the year into twelve Twelfths (plus two odd days) was due to the fact that one eclipse cycle was almost exactly equal to 24 days. On the Idol one eclipse cycle extends for 192 days, a period which necessitates a two-year cycle of Twelfths to keep the beginning of the year in line with the beginning of the eclipse cycle. The two-year period is thus divided into three eclipse cycles of 192 days each. Sub-dividing these into smaller periods there would be six periods of 96 days each, then twelve periods of 48 days each. Such being still too long a further sub-division gives 24 periods each of 24 days. The division of the year of the Idol into twelve Twelfths was thus due to the eclipse cycle as on the Calendar, the duodecimal division being at once the most logical and the most practical.

The number of hours in the day at the time of the Idol is not indicated, hence in our calculations we have adopted a day of 30 hours, the number indicated on the Calendar. Whether the Tiahuanacans of the time of the Idol did, or did not, sub-divide their day into 30 hours does not affect our interpretation: the hour is not a natural spell of time: it is purely a matter of convenience to divide the day into equal units. However, the length of a day of the time of the Idol did not differ greatly from a day of the Calendar (Idol 30·437, Calendar 30·185, hours of present length) and it is very likely that the day of the Idol was actually divided into 30 hours. Indeed, it is most unlikely that the Tiahuanacans of the time of the Idol did not sub-divide their day into smaller units, and if they did sub-divide it, it is unlikely that the division of the day into *thirty* hours was only effected at the time of the establishment of the Calendar on the Gate of the Temple of Kalasasaya.

As on the Calendar we shall refer to the twelve divisions of the year as 'Twelfths'. The large Figure on the back of the Idol, which represents both the equinoctial Twelfths, the First and the Seventh, we shall refer to as 'the Main Figure'. The term 'symbolism' will be used as denoting a group of symbols, generally corresponding to the 'items' of Diagram 5.



3. The Excavation of the Great Idol. The monolith is seen in the trench in its original slanting position with planks and posts put under it to lift it and transport it to La Paz



4. The Front (a) and the Back (b) of the Great Idol.

The 81 Items of Diagram 5 have been reproduced, enlarged, as separate diagrams. The following list shows, for each Item, both the number of the Diagram and of the Chapter and Section where it is considered.

Item No.	Diagram No.	Dealt with in Chapter & Section	Item No.	Diagram No.	Dealt with in Chapter & Section
1	29	8 I	45-46	10	6 IX
2-13	28	7 V	47-48	10, 18	6 IX
14-15	30	8 II	49-50	10	6 IX
16-18	36	8 VIII	51-52	10	6 II
19-20	10, 36	8 IX	53-56	22	7 III
21	36	8 VIII	57	10, 14	6 VI
22-26	26	7 IV	58	10, 11	4; 6 II, III, IV, V
27	32	8 IV	59	10, 18	6 IX
28-30	26	7 IV	60	10, 14	6 VI
31-35	24	7 IV	61-64	20	7 III
36	34	8 VI	65	35	8 VII
37-39	24	7 IV	66-67	10, 14	6 VI
40	33	8 V	68	8	5
41	10	6 II	69-78	8	4
42-43	10, 16	6 VII	79	37	8 X
44	10	6 II	80-81	31	8 III

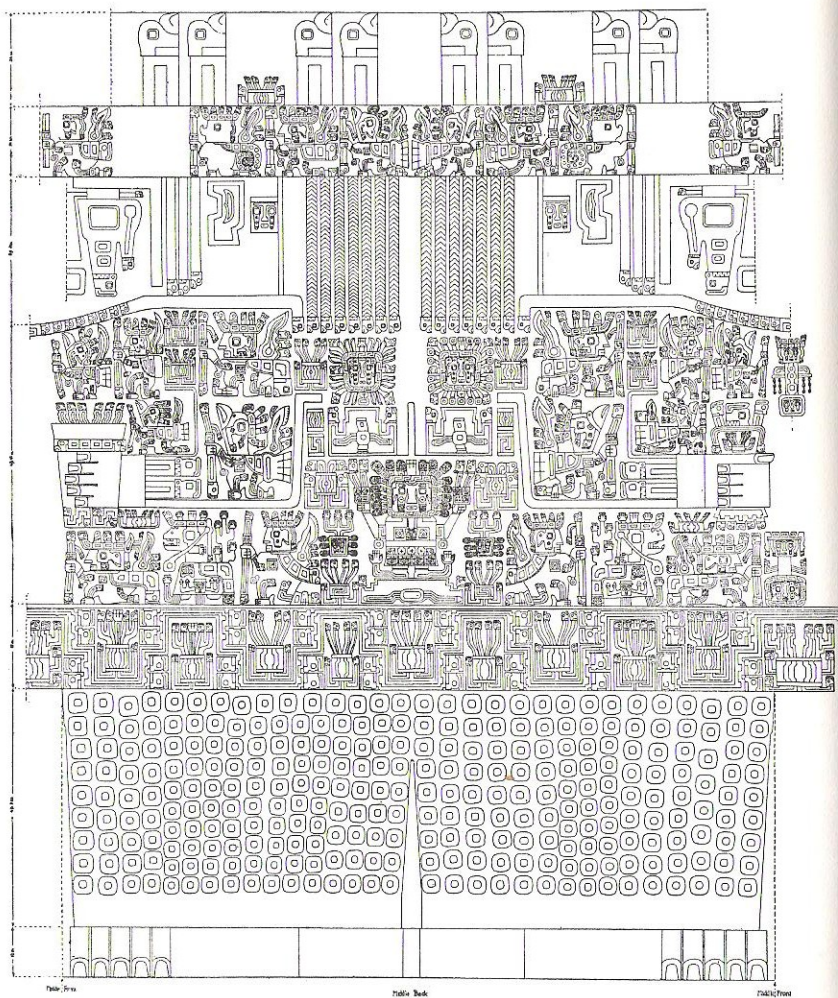
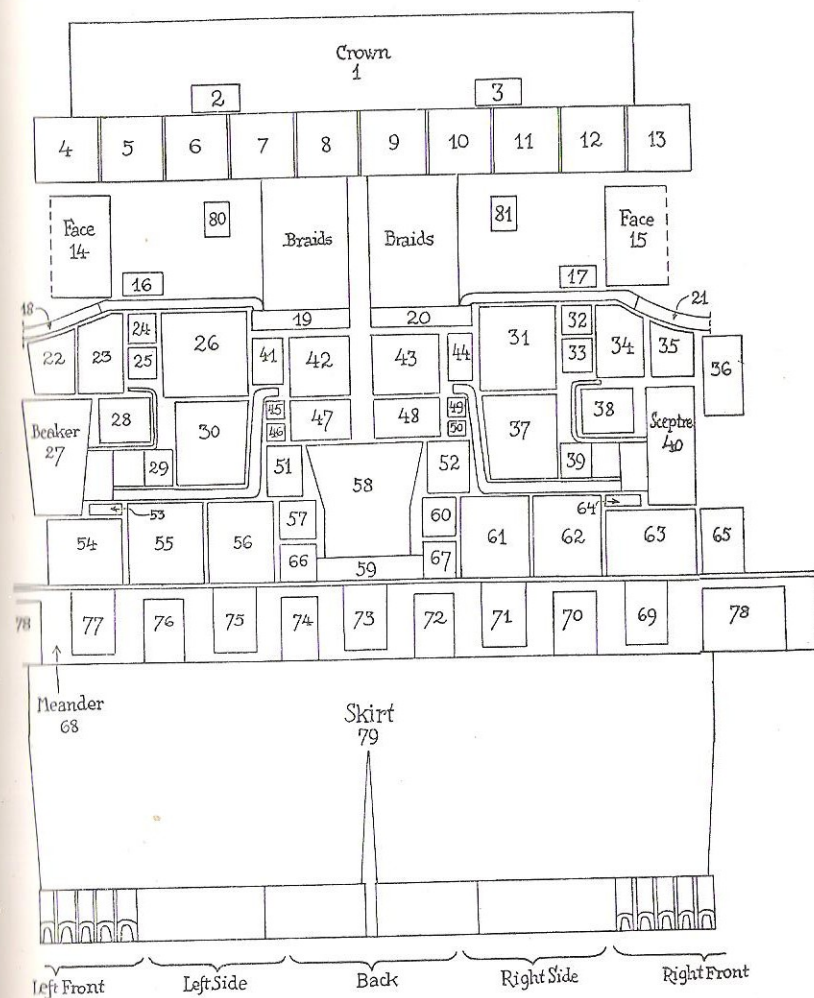


DIAGRAM 5. The Great Idol—



Planiform Expansion and Key

Chapter 2

THE SYMBOLOGY OF THE GREAT IDOL

GENERAL REMARKS

For the sake of dealing methodically with the glyphs which cover the Great Idol it is necessary to get order into the apparent chaos by a general description of these glyphs. If the sculpture on the Calendar Gate appears involved at first glance, that on the Great Idol is even more so, quite apart from the fact that the former is on one plane while the latter is 'round' a pillar-like statue. However, Diagram 5 shows the carvings on the Great Idol in a planiform expansion of the 'cylindriform' statue, its 'envelope' so to speak, the evidently much more important glyphs on the back of the Idol being shown in the centre of the diagram. Even after a superficial consideration of this diagram it is appreciated that, as on the Calendar, the individual symbolisms depicted are gathered into definite groupings, which form a balanced design centred on the back and front of the Idol. For convenience of reference these individual symbolisms have been numbered separately (*see* Key to Diagram 5). They total to 81 items. The groupings into which they are gathered are as follows:

		Number of Symbols
(1) The Crown	Item 1	8
(2) The Turban	Items 2-13	202
(3) The Face of the Idol	Items 14-15	6
(4) The Small Faces	Items 80-81	-
(5) The Necklace	Items 16-21	38
(6) The Beaker	Item 27	12
(7) The Sceptre	Item 40	16
(8) The left Arm and Shoulder	Items 22-26, 28-30	95
(9) The right Arm and Shoulder	Items 31-35, 37-39	95
(10) The upper Symbolism on the Front	Item 36	4
(11) The Girdle	Items 68-78	108
(12) The Back	Items 41-52, 57-60, 66-67	147
(13) The Side, below the left Arm	Items 53-56	60
(14) The Side, below the right Arm	Items 61-66	61
(15) The lower Symbolism on the Front	Item 65	6
(16) The Skirt	Item 79	288
		1146

GENERAL REMARKS

The 16 (minor) groupings of the 81 symbolisms are either self-evident (e.g. certain groups of Winged Figures are obviously related) or have been found in the course of the analysis. In addition, it would appear that the minor groupings may be arranged into four major groupings by virtue of the number of symbols in each such group. Since, however, a number of the symbolisms on the Idol have been either destroyed or partly obliterated, a certain doubt must remain regarding these major groupings, a matter which is discussed in Chapter 9. For the sake of completeness, however, they may be enumerated here:

	Number of Symbols
(1) The Head: Comprising all those parts on the Idol above, and including, the Necklace and Braid condors, but excluding the Crown, yet with the addition of the Beaker and the Sceptre (Minor Groupings 2-7)	274
(2) The Body: The Back, the Sides below the Arms, and the lower Symbolism on the Front (Minor Groupings 12-15)	274
(3) The Shoulders, Arms, Chest and Girdle (Minor Groupings 8-11)	302
(4) The Crown and the Skirt (Minor Groupings 1, 16)	296
	1146

One point should be mentioned at the outset, because it made the task of analysis of the symbology of the Great Idol difficult. While the Calendar is incised into a slab of andesite, a material of great hardness, the glyphs of the Great Idol were graven into a pillar of comparatively rather soft sandstone. Hence, a number of symbols and symbolisms have become greatly damaged, or even completely effaced. However, in most cases various definite indications have allowed a reconstruction of the obliterated parts, so that the really doubtful symbols have been reduced to so small a number that they do not interfere with the general validity of our conclusions. Bearing this in mind, and attributing to the obliterated parts a certain number of symbols for reasons which will be discussed in their proper place, the total number of symbols employed in the symbology of the Great Idol counts to 1146.

In addition to the 1146 symbols, certain signs, elements and features are employed in the symbology, viz., signs 131, elements 190, and features 78. As far as can be seen up till now these numbers have no special significance in relation to the year of the Idol, nor does it appear that the number of symbols in each of the Minor Groupings has any special significance. It is only in the case of the Major Groupings that the number of symbols is significant, from which it may be inferred

that the extensive use of 'significant numbers', as on the Calendar, as a guide or pointer to certain matters, was a development which came into use at a later date than the Great Idol.

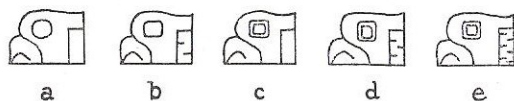
THE GLYPHS

Before attempting the interpretation and elucidation of the Symbolology of the Idol we shall show individually the various forms of the glyphs employed, and give brief notes of their general significance.

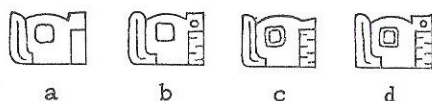
As on the Calendar we shall classify the glyphs into four series, viz., Symbols, Signs, Elements, and Features. Consideration of the number of each kind of glyph employed, and the possible significance of the totals of certain groupings, is deferred to a later Chapter. (See Chapter 9, where there is also found the Conspectus of Glyphs.)

Throughout this work the term 'symbol' will generally be used with reference to the glyphs of Series 1 only. The 'signs', 'elements', and 'features' will be referred to as such.

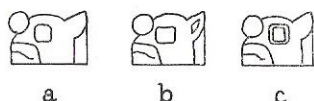
SERIES 1. SYMBOLS



Symbol 1. *Condor Head*. Refers generally to solar eclipses above the horizon and, inversely, to satellitic eclipses below the horizon. The Condor relates to the Sun, hence, above the horizon, it has a relation to the day-time. It refers also to certain types of lunations and passages.

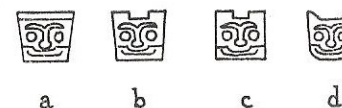


Symbol 2. *Fish Head*. Relates generally to satellitic eclipses above the horizon and, inversely, to solar eclipses below the horizon.



Symbol 3. *Puma Head*. Has a relation to the night-time, hence it symbolizes a certain type of lunation which extends throughout the night.

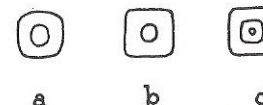
THE GLYPHS



Symbol 4. *Puma Face*. Various kinds of the same symbol. They relate to certain types of passages and lunations.



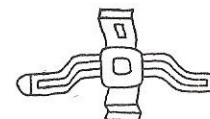
Symbol 5. *Puma Face, inverted*. Indicates a certain appearance of the Satellite when on or near the midheaven.



Symbol 6. *Disk*. Form (a) is used to symbolize a certain type of passage which is neither a 'fish' or 'condor', nor a 'budded plume' or 'puma face' passage. It is therefore a 'neutral' symbol so far as the passages are concerned. Disk (a) is also used on the Skirt of the Idol where it may have reference to the number of revolutions in two years, or the number of days in one year. Form (b) is used as a day symbol on the halo of the right-hand Twelfth Head (Item 43).



Symbol 7. *Disk, tailed*. Used on the Wings of the Winged Figures as a symbol which may 'fly off' or 'fly on' as may be necessary, according to whether the eclipse represented is above or below the horizon.



Symbol 8. *Disk, with arms*. Used only inside the pedestals of the two Twelfth Heads.



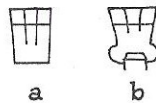
Symbol 9. *Oval*. It is used as the 13th symbol on the halo of the left-

THE SYMBOLOGY OF THE GREAT IDOL

hand Twelfth Head (Item 42). It symbolizes a day in which the Satellite extends, in its passage across the sky, over the greater part of the day.



Symbol 10. *Oval, with arms*. Used only in the pedestal of the Main Figure.



Symbol 11. *Plume*. Symbolizes eclipses taking place on the horizon.



Symbol 12. *Plume, with round base*. Used on the 'Twelfth Symbolisms' of the Meander to distinguish certain eclipse sub-cycles.



Symbol 13. *Budded Plume*. Symbolizes passages in which the Satellite crosses the meridian during the day-time, hence such are characterized by a solar eclipse flanked by two satellitic eclipses.



Symbol 14. *Human Face, full*. Symbolizes a certain type of lunation. (Cf. Symbol 15.)



Symbol 15. *Human Face, profile*. Symbolizes the lunations either preceding or following those symbolized by Symbol 14.



Symbol 16. *Human Face, with 'hat' and four 'buds'*. Applies to passages in the Intermediate Sub-cycle 2.

THE GLYPHS



Symbol 17. *Shell*. Indicates eclipses taking place at high altitudes.



Symbol 18. *Wing*. Is used on the left-hand Twelfth Head at positions which on the right-hand one are symbolized by disks (Symbol 6b).



Symbol 19. *Tail*. Form (a) occurs only as the last, or 'end', symbol on the Crowns of certain Winged Figures, where, as its form implies, it symbolizes the last, or end, eclipse of the Crown Periods.

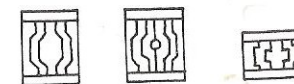
Form (b) occurs only once, as the last, or 'end', symbol on the Crown of the First Winged Figure of the group on the right-hand side of the Body of the Idol. It resembles a budded plume (Symbol 13) as much as a tail. However, the solution of the Winged Figures given in Chapter 7, Section III, shows that it is really a tail, hence it is included as a variety of Symbol 19. Photographs to verify its correct form are not available. It is depicted as drawn by Posnansky.



Symbol 20. *Large Tail*. Used only as the tail of certain Winged Figures. Its division into three or four spaces may be an indication that it stands for three or four eclipses.

There are 20 distinct kinds of symbols, some of them showing slightly different forms. Only three symbols (1: Condor Head, 17: Shell, 18: Wing) seem to be 'solar' ones; all the rest are 'satellitic' symbols.

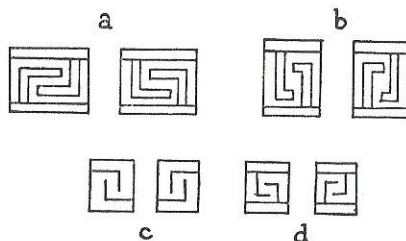
SERIES 2. SIGNS



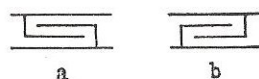
Sign 1. *Double Knot*. Indicates a connection or link between two events.



Sign 2. *Treble Knot*. Has a meaning similar to that of Sign 1.



Sign 3. *Continuant*. Has the meaning of 'continuity', 'succession', 'this way, that way'. On the arms of the Main Figure the continuants are used as an indication to the correct assignment to certain passages of the two disks hanging from the arms of that Figure.



Sign 4. *Alternator*. Has a meaning similar to that of Sign 3, but is used generally round the Faces of the Twelfth Heads where it represents the opposing apparent movements of Sun and Satellite in the ecliptic. Form (a) is that employed on Items 43 and 58, form (b) is used on Items 42 and 65.

SERIES 3. ELEMENTS

Besides the symbols and signs there are, on the Idol, a number of 'geometrical' designs of various kinds which appear to have a certain significance in relation to the symbolisms in which they appear. These are classified as 'elements', as follows:



Element 1. Rectangles on Crowns.
Chapter 7, Sect. III, IV



Element 2. Rectangles on Body.
Chapter 7, Sect. III, IV



Element 3. Rectangles on Beaker.
Chapter 8, Sect. IV



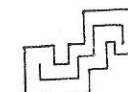
Element 4. On Crown of Item 36.
Chapter 8, Sect. VI



Element 5. On ribbon of Item 65.
Chapter 8, Sect. VII



Element 6. Crosses.
Chapter 6, Sect. III



Element 7. Staircase motifs.
Chapter 8, Sect. IV



Element 8. Compartments in 'box'.
Chapter 6, Sect. IV



Element 9. On rear legs of Winged Figures.
Chapter 7, Sect. III

SERIES 4. FEATURES

Certain 'Features' stand out as having, possibly, a special significance, and these only are enumerated.

Feature 1. Eyes. These are the large, double-circle eyes on certain Figures and Symbols, a full list of which is given in Chapter 8, Section IX, where their possible significance is considered.



Feature 2. Other double circles similar to the eyes. They appear on the 'legs' on the large Face of the Idol and also on the face of the largest Condor Figures of the groups of Winged Figures of the Arms and Chest.



Chapter 3

THE ECLIPSE CYCLE AT THE TIME OF THE IDOL

As the symbology of the Calendar is in many respects similar to that of the Idol and as on the Calendar it was found that the number of lunations and revolutions in the eclipse cycle, and year, could be determined by a count of these symbols in their special groupings, it was thought that a similar practice might have been followed in respect of the Great Idol.

However, the count of the Idol symbols yielded no totals which could be related to any possible or probable numbers of days, lunations or revolutions which might be accepted as those obtaining at the time of the Idol. This failure was chiefly due to the obliteration of certain parts of the sculpture, which precluded a definite count: even if (carefully conservative) allowance was made for the obliterated parts no satisfactory figures could be arrived at; but partly it was also due to the fact that the general concept of the notation employed on the Idol was rather different from that used on the Calendar. That is why it was found only at a much later stage of the inquiry that there is, after all, a strong likelihood that certain totals do, in fact, relate to the year of the Idol. But this was not at first apparent; the relative points are discussed in Chapter 9.

In the absence of any direct indication by numbers of symbols, therefore, the problem had to be approached indirectly—with the result that the eclipse cycle at the time of the Idol was deduced to consist of 283 lunations in 192 days. As the majority of the symbolisms have yielded to interpretation on this basis, there can be no doubt that this eclipse cycle is correct. The matter of the number of lunations in the year of the Idol depends on the length of that year, but this may be left until later. For the time being we are concerned mainly with the eclipse cycle, but where the year comes into consideration it is assumed that it consisted of twelve Twelfths each of 24 days' duration.

It may be considered of interest to know how this eclipse cycle of 283 lunations in 192 days was deduced, but the matter is now merely an

THE ECLIPSE CYCLE AT THE TIME OF THE IDOL

academic one, and so we will be as brief as possible and eliminate all our tables and calculations, as well as any references to the considerable amount of trial and error which was involved in the course of this blazing a trail in fresh ground.

The symbolism of the Calendar of Tiahuanaco showed that at that time there were almost exactly 37 lunations in 24 days, which resulted in a characteristic eclipse cycle. It need hardly be said that this Calendar eclipse cycle is not reflected in the symbolism of the Idol. Indeed, at the time of the Idol a 24-day period must have consisted of fewer lunations, since the Calendar is undoubtedly of a later date than the Idol, though it may be surmised that the difference in time between the two could not have been great. According to Hoerbiger, the number of lunations tended to increase with the progress of the then satellitic age.

A clue to the probable number of lunations was given by Item 58 of Diagram 5, that is, the Main Figure, which corresponds to the Figure of the First Twelfth of the Calendar. Round the head of this Figure, forming a broken halo, is a group of 17 symbols. (Cf. Diagram 11.) On the Calendar a group of 19 symbols, similarly placed, indicated the number of visible solar eclipses in one Twelfth, that is, 19 lunations were thus involved. As there were 18 invisible solar eclipses the number of lunations in one Twelfth was 37. On this analogy the number of lunations in the Idol cycle must have been not less than 33, nor more than 36, in a 24-day period. The number of apparent revolutions would therefore be not less than 9, or more than 12, in that period.

The next step was to find some indications which would enable us to decide which combination of lunations and revolutions, $33 + 9$, $34 + 10$, $35 + 11$, or $36 + 12$, was the most likely. As, on the Calendar, a record of the lunations and revolutions was found on the Figure of the First Twelfth and its pedestal it was surmised that the most probable place to find such a record on the Idol would also be the Main Figure. We might expect to find on it a number of symbols which, suitably divided, would yield one of the possible combinations of lunations and revolutions. A count of the symbols on the Main Figure comes to 40, which is two less than the lowest combination, $33 + 9 = 42$. However, if we suppose that the peculiar group of four small circles against each condor head on the arms of the Main Figure indicates that each condor is to count as four, the 40 symbols are augmented to 46, which indicates the combination $35 + 11$. A tentative figure of 35 complete lunations and 11 complete revolutions in 24 days

was therefore accepted. This surmise was confirmed by the fact that the symbols on the Main Figure are arranged into two distinct groups of 35 plus 11.

Some trial and error now showed that 35 complete lunations was unlikely to be the exact number of lunations in 24 days at the time of the Idol. Such could not be reconciled with any part of the symbolism, apart from the Main Figure. The next step, therefore, was to find what fraction of a lunation over and above 35 complete lunations would give an eclipse cycle which would fit the symbols.

Taking 'eighths' as the smallest practical fraction into which to divide the lunation, it was found that to produce 17 visible solar eclipses in a 24-day period the cycle must consist of either $35 \frac{1}{8}$ th or $35 \frac{3}{8}$ ths lunations. In choosing between them a possible hint was given by the lower groups of three Winged Figures, each figure of each group having a condor hanging from its crown. On the analogy of the Calendar it was inferred from this that in the 24-day eclipse cycle there were three solar eclipses very near the horizon. As the $35 \frac{1}{8}$ th cycle would contain only two such eclipses whereas the $35 \frac{3}{8}$ ths cycle would contain three, preference was given to the latter.

Tentatively, therefore, a 24-day cycle of $35 \frac{3}{8}$ ths lunations was accepted as a basis for further inquiry. It gradually became apparent, as the inquiry proceeded, that this cycle was the correct one. The interpretations given in the following Chapters are based on this cycle and numerous confirmations are given that such a cycle did obtain at the time of the Idol.

Let us now examine this cycle and see what can be inferred from it.

It is apparent that $35 \frac{3}{8}$ ths lunations in 24 days is not a full cycle; it can only be regarded as a sub-cycle of a main cycle; one extending over 192 days, or eight Twelfths, is indicated, since such a period is necessary to bring the initial eclipse back again to its original position. The eclipse cycle proper thus consists of 283 lunations or 91 revolutions in 192 days, divided into 8 sub-cycles each of $35 \frac{3}{8}$ ths lunations or 11 $\frac{3}{8}$ ths revolutions in 24 days. The whole of this main cycle is shown in Diagram 6. It will be referred to as 'the eclipse cycle', the 24-day cycles being referred to as 'sub-cycles 1 to 8'.

As the eclipse cycle consists of eight sub-cycles, it may be not without significance that the Idol symbolism includes several groups of eight symbols, viz.,

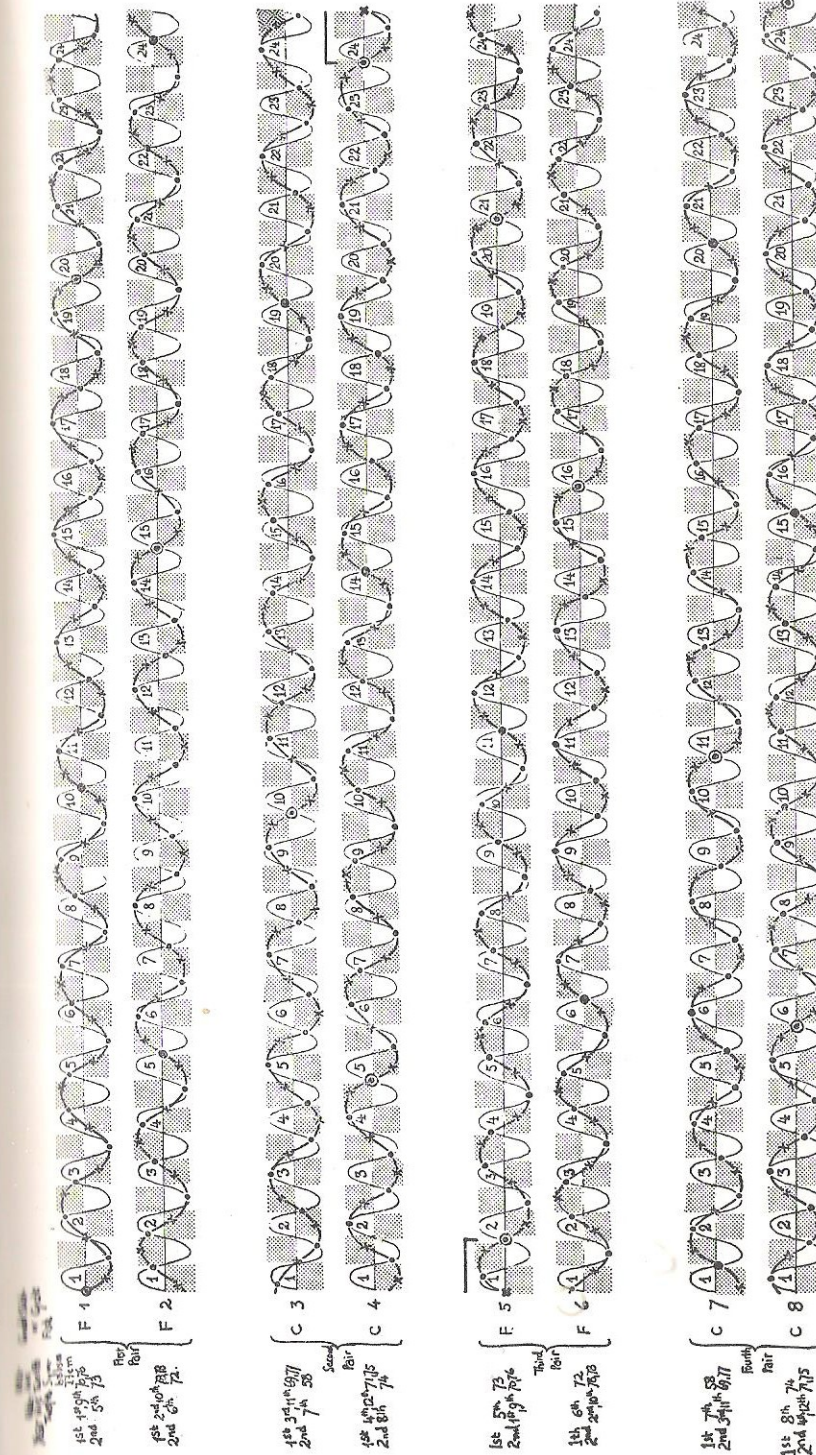


DIAGRAM 6. The eclipse cycle of 283 lunations or 91 revolutions in 192 days (8 Twelfths of 24 days each). The 8 sub-cycles, each of $35 \frac{3}{8}$ lunations or 11 $\frac{3}{8}$ revolutions in 24 days; four pairs; between pairs 3 and 4 and 5 and 6 a break of two days. The 10 intermediate eclipse cycles (O to O) each of 28 lunations in 19 days (from sunrise eclipse to sunrise eclipse). The 20 intermediate sub-cycles, each of 14 lunations in 9 $\frac{1}{2}$ days, viz: Intermediate Sub-cycle 1 (O to O from sunrise eclipse to sunset eclipse). Intermediate Sub-cycle 2 (O to O from sunset eclipse to sunrise eclipse). • = Solar eclipses, X = Satellite eclipses.

- Item 1—8 condors on Crown
- Item 19—8 condors at back of Head
- Item 20—8 condors at back of Head
- Item 18—8 condors on Breast
- Item 21—8 condors on Breast

When the eclipse cycle is further examined it is found that it has certain peculiarities, which the Tiahuanacans of the Idol period were no doubt fully aware of. Here we shall refer to them only briefly as they are fully dealt with later when they concern the interpretation of certain symbolisms.

It will be noticed from Diagram 6 that a sunrise solar eclipse recurs every 19 days, or after 28 lunations (with a break of two days, containing three lunations, in this sequence at the end of sub-cycle 4 and the beginning of sub-cycle 5), so that there are 10 of these 'intermediate eclipse cycles', as they may be called, in 192 days.

It will be noticed also that each of these intermediate eclipse cycles, which run from one solar sunrise eclipse to the next, falls into two parts: the first beginning with the *sunrise* solar eclipse and ending with a *sunset* solar eclipse occurring $9\frac{1}{2}$ days, or 14 lunations, later, and the other beginning with this *sunset* solar eclipse and ending with the next *sunrise* solar eclipse. These subdivisions may be termed the Intermediate Sub-cycles 1 and 2, respectively.

To facilitate reference, the various cycles and sub-cycles may be set out as follows:

The Eclipse Cycle—283 lunations, or 91 revolutions, in 192 days; divided into

Sub-cycles 1 to 8—each $35\frac{3}{8}$ ths lunations, or $11\frac{3}{8}$ ths revolutions, in 24 days.

The Intermediate Eclipse Cycle—the period from a sunrise solar eclipse to the next sunrise solar eclipse; 28 lunations in 19 days; divided into

Intermediate Sub-cycle 1—the period from a sunrise solar eclipse to a sunset solar eclipse; 14 lunations in $9\frac{1}{2}$ days; and

Intermediate Sub-cycle 2—the period from a sunset solar eclipse to a sunrise solar eclipse; 14 lunations in $9\frac{1}{2}$ days.

A similar 'intermediate eclipse cycle' with two 'intermediate sub-cycles' occurs in respect of the satellitic eclipses.

Five 'intermediate sub-cycles' of $9\frac{1}{2}$ days each cover a period of

$47\frac{1}{2}$ days, which is half a day short of two complete sub-cycles of the eclipse cycle, that is, half a day short of 48 days, or two Twelfths. The eight sub-cycles are thus grouped in definite pairs according to this peculiarity, taking the horizon eclipse, solar or satellitic, of the first day of Sub-cycles 1, 3, 5 and 7 as the beginning of each group. The pairs are:

1st pair: Sub-cycles 1 and 2. Solar sunrise eclipse on 1st day of sub-cycle 1 to solar sunset eclipse on 24th day of sub-cycle 2.

2nd pair: Sub-cycles 3 and 4. Satellitic eclipse at sunset on 1st day of sub-cycle 3 to satellitic eclipse at sunrise ending 24th day of sub-cycle 4.

3rd pair: Sub-cycles 5 and 6. Satellitic eclipse at sunrise on 1st day of sub-cycle 5 to satellitic eclipse at sunset on 24th day of sub-cycle 6.

4th pair: Sub-cycles 7 and 8. Solar sunset eclipse on 1st day of sub-cycle 7 to solar sunrise eclipse ending 24th day of sub-cycle 8.

It will be noticed that at the beginning of sub-cycle 3 there is a change-over from solar to satellitic in respect of the intermediate eclipse cycle of 19 days, and a change-back to solar at the beginning of sub-cycle 7. It does not appear, however, that the satellitic intermediate cycles and sub-cycles are used apart from their connection with the 'Five-fold Intermediate Cycle' which links the sub-cycles into the pairs mentioned above.

A brief reference may be made here to 'The Correspondence Principle' which has been fully dealt with in our work on the Calendar. Under the 'Correspondence Principle', the sequence of satellitic eclipses, starting half-way through an eclipse cycle, corresponds below the horizon to the sequence of solar eclipses above the horizon starting from the beginning of the cycle. Thus, for example, in the Idol eclipse cycle, sub-cycle 1 corresponds in this way to sub-cycle 5. Sub-cycle 1 begins with a *solar* eclipse at sunrise and the first passage is *below* the horizon; sub-cycle 5 begins with a *satellitic* eclipse at sunrise and the first passage is *above* the horizon. There is thus a reversal of the kind of eclipse taking place and a reversal of the position of the eclipse above or below the horizon. This is evident both from Diagram 6 and from Table 1, which gives the times at which all the eclipses of the eclipse cycle take place.

Table 2 gives various elements relative to the year of the Idol.

The whole eclipse cycle is shown in Diagram 6, divided into its eight sub-cycles. The ten intermediate cycles and the twenty intermediate sub-cycles are also shown.

THE ECLIPSE CYCLE AT THE TIME OF THE IDOL

TABLE 1
TIMES OF ECLIPSES. (DIAGRAM 6)

Sol. Sat.	Sub-cycle Number							
Ecl. No.	Sol. 1 Sat. 5 T/hrs	2 T/hrs	3 T/hrs	4 T/hrs	5 T/hrs	6 T/hrs	7 T/hrs	8 T/hrs
1	0:000	12:720	5:087	17:808	10:175	2:542	15:263	7:630
2	20:353	3:073	25:441	8:161	0:529	22:896	5:616	27:984
3	10:706	23:427	15:794	28:515	20:882	13:249	25:970	18:337
4	1:060	13:780	6:147	18:868	11:235	3:603	16:323	8:690
5	21:413	4:134	26:501	9:221	1:589	23:956	6:676	29:044
6	11:766	24:487	16:854	29:575	21:942	14:309	27:030	19:397
7	2:120	14:840	7:207	19:928	12:295	4:663	17:383	9:750
8	22:473	5:194	27:561	10:281	2:649	25:016	7:737	0:104
9	12:826	25:547	17:914	0:635	23:002	15:369	28:090	20:457
10	3:180	15:900	8:268	20:988	13:355	5:723	18:443	10:810
11	23:533	6:254	28:621	11:341	3:709	26:076	8:797	1:164
12	13:886	26:607	18:974	1:695	24:062	16:429	29:150	21:517
13	4:240	16:960	9:328	22:048	14:415	6:783	19:503	11:871
14	24:593	7:314	29:681	12:402	4:769	27:136	9:857	2:224
15	14:946	27:667	20:034	2:755	25:122	17:489	0:210	22:577
16	5:300	18:020	10:388	23:108	15:475	7:843	20:563	12:931
17	25:653	8:374	0:741	13:462	5:829	28:196	10:917	3:284
18	16:006	28:727	21:094	3:815	26:182	18:549	1:270	23:637
19	6:360	19:080	11:448	24:168	16:536	8:903	21:623	13:991
20	26:713	9:434	1:801	14:522	6:889	29:256	11:977	4:344
21	17:067	29:787	22:154	4:875	27:242	19:609	2:330	24:697
22	7:420	20:140	12:508	25:228	17:596	9:963	22:683	15:051
23	27:773	10:494	2:861	15:582	7:949	0:316	13:037	5:404
24	18:127	0:847	23:214	5:935	28:302	20:670	3:390	25:757
25	8:480	21:201	13:568	26:288	18:656	11:023	23:743	16:111
26	28:833	11:554	3:921	16:642	9:009	1:376	14:097	6:464
27	19:187	1:907	24:274	6:995	29:362	21:730	4:450	26:817
28	9:540	22:261	14:628	27:348	19:716	12:083	24:804	17:171
29	29:893	12:614	4:981	17:702	10:069	2:436	15:157	7:524
30	20:247	2:967	25:335	8:055	0:422	22:790	5:510	27:877
31	10:600	23:321	15:688	28:408	20:776	13:143	25:864	18:231
32	0:953	13:674	6:041	18:762	11:129	3:496	16:217	8:584
33	21:307	4:027	26:395	9:115	1:482	23:850	6:570	28:938
34	11:660	24:381	16:748	29:469	21:836	14:203	26:924	19:291
35	2:013	14:734	7:101	19:822	12:189	4:556	17:277	9:644
36	22:367	—	27:455	—	—	24:910	—	—

SolA	19	19	17	16	19	19	16	17
SolB	17	16	19	19	16	17	19	18
SatA	17	16	19	19	16	17	19	18
SatB	19	19	17	16	19	19	16	17

THE ECLIPSE CYCLE AT THE TIME OF THE IDOL

Sub-Cycles Pairs 1 and 2 3 and 4 5 and 6 7 and 8

SolA + SatA	71	70	71	71
SolB + SatB	71	71	71	70
SolA + SolB	71	70	71	70
SatA + SatB	71	71	71	71

Solars Above Horizon	142	+	Satellitics Above Horizon	141	=	283
Solars Below Horizon	141	+	Satellitics Below Horizon	142	=	283
	283			283		

Solars Above Horizon (SolA) and Satellitics Below Horizon (SatB): 0-15 T/hrs
Solars Below Horizon (SolB) and Satellitics Above Horizon (SatA): 15-30 T/hrs

In this work the diagrams of the eclipse cycle have been drawn so as to be read from left to right, whereas, in *The Calendar of Tiahuanaco*, similar diagrams were drawn to be read from right to left. It has been represented that such diagrams would be easier to follow if drawn in the more normal left to right direction, particularly as, in the text, references to lunations, days, etc., are usually made in numerical order, i.e., from left to right.

Also, sinus lines have been used for the paths of the Sun and the Satellite and not straight zig-zag lines as in the respective graphs in the book on the Calendar; the loss of exactitude relative to altitudes thus resulting is made up for by the more pleasing and 'natural' aspect of the graphs.

TABLE 2

ELEMENTS OF THE YEAR OF THE GREAT IDOL

Number of days in year	288
Length of year	8766 hours
Length of a solar day	30.4375 hours
Let it be supposed that 30.4375 modern hours=30 T/hours	
Then it may be deduced that:	
Length of a solar day	30 T/hrs
Length of a year	8640 T/hrs
Satellite's lunation period	20.353 T/hrs
Number of lunations in 24 days	35.375
Number of lunations in year	424.5
Satellite's revolution period, relative to Earth's surface	63.296 T/hrs
Number of such revolutions in 24 days	11.375
Number of such revolutions in one year	136.5
Period of one passage across the sky, in an ideal (equinoctial) year, as in Diagram 6	31.648 T/hrs
Greatest period of one passage, i.e., at summer solstice	32.068 T/hrs
Shortest period of one passage, i.e., at winter solstice	31.228 T/hrs
Number of days in Eclipse Cycle	192
Number of lunations in Eclipse Cycle	283
Number of revolutions, relative to Earth, in Eclipse Cycle	91
Earth's angular velocity of revolution, relative to the Sun	12° per T/hr
Satellite's angular velocity of revolution, relative to the Sun	17.68° per T/hr
Satellite's angular velocity of revolution, relative to the Earth	5.68° per T/hr

THE ECLIPSE CYCLE AT THE TIME OF THE IDOL

Angle subtended by Satellite's disk	6.6°
Greatest duration of a solar eclipse	0.37 T/hrs
Time taken by Satellite to move across its own breadth	1.16 T/hrs
Obliquity of Ecliptic	18°
Latitude of Tiahuanaco	10° S

Note 1. The T/hour of the time of the Great Idol should not be confused with that of the time of the Calendar. The length of the latter is 1.0062 modern hours, that of the former 1.0146 modern hours.

Note 2. The above figures, where applicable, are based on the eclipse cycle of 283 lunations in 192 days, or a year of 424.5 lunations in 288 days. The year may have consisted of 425 lunations in 288 days (*see* Chapter 9) in which case some slight amendments to certain of the above figures would be necessary.

Chapter 4

THE SYMBOLISMS EMBAYED IN THE MEANDER

The Meander of the Idol—whose aspects will be fully dealt with in Chapter 5—differs from that of the Calendar in several respects of which at present we may notice only that whereas the Calendar Meander has eleven bays that of the Idol has only ten. But one of the Idol Meander bays (that containing Item 78) differs from the others (see Diagram 8), both in size and in the symbolism within it, and is apparently intended to stand as a 'double bay'. In effect, the form of the Idol Meander indicates that its ten bays contain ten symbolisms which actually count for eleven symbolisms.

It is apparent that the 'doubling' of one bay was necessitated (if for no other reason) by the 'circular' form of the Idol Meander, since, if there were eleven bays it would not have been continuous, with alternations of 'ups' and 'downs'; there must in that case have been an awkward, unsymmetrical break with two 'ups' or two 'downs' adjacent to each other.

On the analogy of the Calendar we may accept that each of the embayed symbolisms, except the double symbolism, relates to one Twelfth of the year, so that, with the double symbolism, eleven Twelfths altogether are symbolized. On the Calendar each bay contains a Twelfth Head, with each of the 24 days symbolized on its halo; on the Idol the full Twelfth is not shown; instead, each Twelfth is represented by a 'Twelfth Symbolism'. This difference between the Calendar and the Idol is very significant.

As the 'Twelfth Symbolisms' of the Idol differ in certain respects it may be inferred that the 'basic' symbolism for 'one Twelfth' consists of those parts which are common to all of them, viz., a 'knot' sign with either a condor head or a fish head projecting on each side, and that the varying additional symbols represent certain special aspects of the relative Twelfths. These 'basic' 'Twelfth Symbolisms' are shown at (a) and (b) of Diagram 7. The 'basic' part of the 'Twelfth Symbolism'

THE SYMBOLISMS EMBAYED IN THE MEANDER

in the large bay is shown at (c) of this Diagram. It consists of a 'knot' sign with *two* fish heads on each side, from which, by comparison with the normal 'basic' 'Twelfth Symbolism', there can be little doubt that it is intended to represent two Twelfths.

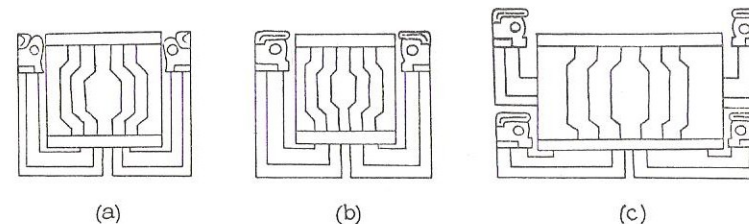


Diagram 7
The Twelfth Symbolisms

- (a) 'Basic' condor 'Twelfth Symbolism'
- (b) 'Basic' fish 'Twelfth Symbolism'
- (c) 'Basic' part of the double 'Twelfth Symbolism'

The Condor symbolism as at (a) of Diagram 7 is used once only on the Calendar where, on the body of the First Twelfth, it indicates that that Twelfth is representative of all the Twelfths. On the Idol a separate 'Twelfth Symbolism' is used for each of the eleven Twelfths represented thereon, and the difference between them in respect of their condor or fish symbols, as also in respect of the varying supplementary symbols projecting from their knots, indicates a difference between certain Twelfths of the Idol, and, in comparison with the Calendar, a difference between the Calendar Twelfths and the Idol Twelfths.

On the Calendar, as the eclipse cycle of 24 days comprised almost exactly 37 lunations, each of the twelve Twelfths of the Calendar year was identical in respect of the sequence of days in relation to the lunations, revolutions, passages and eclipses, e.g., the first day of each Twelfth started with a solar eclipse at sunrise; hence, the 'Twelfth Symbolism' relative to the Calendar was the same for all the Twelfths. The difference between the Calendar 'Twelfth Symbolism' and the 'Twelfth Symbolisms' of the Idol implies that the Idol Twelfths were not identical, from which it may be inferred that the eclipse cycle of the Idol did not consist of an exact number of lunations in a 24-day period.

When we examine the ten (or, in effect, eleven) 'Twelfth Symbolisms' on the Meander of the Idol and note their supplementary

symbols, we find that they are not all different. Certain corresponding symbolisms may be seen. These are:

Item 69 is identical with Item 77 (Condor symbolism, with three knots and plume, in upper bay);

Item 70 is identical with Item 76 (Fish symbolism, with three knots and plume, in lower bay);

Item 71 is identical with Item 75 (Condor symbolism, with two knots, in upper bay);

Item 78 is the 'double symbolism', hence the two Twelfths which it represents are identical.

Items 72 (Condor, two knots, lower bay), 73 (Fish, two knots, upper bay) and 74 (Fish, two knots, lower bay), are isolated, or non-corresponding, and with these should be included the Twelfth which does not appear in the Meander, viz., the Main Figure, Item 58.

Thus, of the 'Twelfth Symbolisms' of the Meander plus the Main Figure there are four pairs which correspond, and four non-corresponding symbolisms.

Let us now relate the eclipse cycle of 192 days, or eight sub-cycles each of 24 days, to the year of twelve Twelfths, as is done in Table 1, Columns 1 and 2.

The following points are brought out by this Table:

(a) The relationship between the eight sub-cycles and the twelve Twelfths of one year results in a two-year period of three eclipse cycles, by which the sub-cycles and the Twelfths again correspond at the beginning of the third year.

(b) There are four pairs of Twelfths in each year in which the sub-cycles are the same. These pairs of Twelfths are the First and Ninth, Second and Tenth, Third and Eleventh, and Fourth and Twelfth, in each year.

(c) There are four Twelfths, in each year, each of which is related to a different sub-cycle. These are, in each year, the Fifth, Sixth, Seventh, and Eighth Twelfths.

These points confirm the deductions made in Chapter 3 that the 24-day sub-cycle consisted of 35 lunations plus a fraction which was three-eighths of a lunation. They also confirm that the fraction was an odd number of eighths, since an even number of eighths would result

TABLE 1

Year and Twelfth	Eclipse Sub-Cycles		Twelfth Symbolism (cf. Note)	Item No. (Dia- gram 5)				
	Sub- Cycle No.	Condor or fish						
1st Year								
Corres- ponding to C	A	1st	I	F	F P 3	70	D	Corres- ponding to F
		2nd	2	F	F 3	78		
		3rd	3	C	C P 3	69		
		4th	4	C	C 2	71		
Non- corres- ponding	B	5th	5	F	F 2	73	E	Non- corres- ponding
		6th	6	F	F 2	72		
		7th	7	C	C 2	58		
		8th	8	C	C 2	74		
Corres- ponding to A	C	9th	I	F	F P 3	76	F	Corres- ponding to D
		10th	2	F	F 3	78		
		11th	3	C	C P 3	77		
		12th	4	C	C 2	75		
2nd Year								
Corres- ponding to C	A	1st	5	F	F P 3	70	D	Corres- ponding to F
		2nd	6	F	F 3	78		
		3rd	7	C	C P 3	69		
		4th	8	C	C 2	71		
Non- corres- ponding	B	5th	I	F	F 2	73	E	Non- corres- ponding
		6th	2	F	F 2	72		
		7th	3	C	C 2	58		
		8th	4	C	C 2	74		
Corres- ponding to A	C	9th	5	F	F P 3	76	F	Corres- ponding to D
		10th	6	F	F 3	78		
		11th	7	C	C P 3	77		
		12th	8	C	C 2	75		
3rd Year								
1st		I	F	F P 3	70			

Note: F = Fish; C = Condor; P = Plume; 2 = 2 Knots; 3 = 3 Knots

in either a two-Twelfth cycle (4/8ths) or a four-Twelfth cycle (2/8ths, 6/8ths).

We have already mentioned certain correspondences between the various Twelfth symbolisms of the Meander, i.e., there are four pairs of identical, or 'corresponding', 'Twelfth Symbolisms', and four 'non-corresponding' 'Twelfth Symbolisms'. This compares with the four corresponding pairs of Twelfths and the four non-corresponding Twelfths mentioned at (b) and (c) above.

If, as the above facts suggest, there is a relationship between the 'Twelfth Symbolisms' of the Meander and the Twelfths as related to the eclipse sub-cycles in Table 1, then certain of the Twelfths may be designated as 'condor' Twelfths and others as 'fish' Twelfths. Or, more correctly, certain of the sub-cycles may be so designated. Let us, therefore, ascertain which of the sub-cycles are 'condor' and which 'fish' as a preliminary to assigning the 'Twelfth Symbolisms' of the Meander to specific Twelfths.

It is apparent that the 'Twelfth Symbolisms' of the Meander bays must derive their distinguishing characteristics from the sub-cycles to which they relate. Let us now examine these in relation to Diagram 6 and see what correspondences can be found.

Each 'Twelfth Symbolism' bears, projecting from its knot sign, four symbols of the same designation, condor or fish, as those on either side of its knot sign. The fifth symbol, in four cases, is a plume. The position of these projecting symbols, at the end of long brackets, suggests that they have a relation to events, i.e., eclipses, taking place at high altitudes. Taking the normal symbolism of condor for solar eclipses and fish for satellitic ones above the horizon, the following Table 2 shows the nature of the highest eclipse in each passage throughout the eclipse cycle.

TABLE 2

Sub-Cycle	Passages Above Horizon												Totals F C		Symbol
	1	2	3	4	5	6	7	8	9	10	11	12			
1	F	F	F	F	X	C	C	C	X	F	F		6	3	Fish
2	F	F	X	C	C	C	X	F	F	F	F	X	6	3	Fish
3	C	C	C	X	F	F	F	F	X	C	C		4	5	Condor
4	C	X	F	F	F	F	X	C	C	C	C		4	5	Condor
5	X	F	F	F	F	X	C	C	C	X	F	F	6	3	Fish
6	F	F	X	C	C	C	X	F	F	F	F		6	3	Fish
7	X	C	C	C	X	F	F	F	F	X	C		4	4	Condor
8	C	C	X	F	F	F	F	X	C	C	C	X	4	5	Condor

In this Table the number of the passages 1-12 is the sequence above the horizon.

It will be observed from Diagram 6 that certain passages, those which follow a sequence of four fish passages or three condor passages, contain both a solar and a satellitic eclipse at roughly the same altitude; these

passages may be regarded as neither fish nor condor. Such are indicated by 'X' in the above Table. They are, in fact, 'neutral' or 'disk' passages. (See Chapter 6.)

It will also be observed that sub-cycles which begin with fish passages also end with fish passages, and that those beginning with condor passages end with condor passages (ignoring the neutral 'X' passages). This is the determining factor in the designation of each 'Twelfth Symbolism' as either condor or fish, i.e., the first and last passages of each sub-cycle are 'linked' together by the intermediate passages, as indicated by the knot sign.

Regarding the four fishes or condors projecting from the knots: if the nature of these symbols depends on the number of fish or condors in each sub-cycle, whichever is the greater, then, as may be seen from the totals of each symbol in each sub-cycle, the designation is the same as that given by consideration of the first and last passage. (The 7th sub-cycle is an exception, having four each of fish and condor.)

We have still to determine which four of the eight sub-cycles are distinguished by a plume symbol. The above Table does not appear to help in this matter. However, as pointed out in Chapter 3, the 'five-fold intermediate eclipse cycle' divides the eclipse cycle into definite pairs of sub-cycles, viz., 1 and 2, 3 and 4, 5 and 6, and 7 and 8, each pair having a horizon eclipse on the first day, a type of eclipse normally symbolized by a plume, though of a different type from that used on the 'Twelfth Symbolisms'. On this analogy we may tentatively assign plumes to sub-cycles 1, 3, 5, and 7. The plumes, however, apply to those sub-cycles only when they are related to the 'Twelfth Symbolisms' bearing such symbols.

In Table 1 the designations given in Table 2 have been inserted in Column 3 and the sequence continued throughout the three eclipse cycles contained in the two-year period.

In accordance with these indications we may now assign the 'Twelfth Symbolisms' to their respective Twelfths. We shall deal, first, with the 'corresponding' Twelfths (1st, 2nd, 3rd, 4th, and 9th, 10th, 11th, 12th) of the 1st year. The 'corresponding' 'Twelfth Symbolisms' are Items 69, 70, 71, 78, and 77, 76, 75, and 78.

The First Twelfth is related to sub-cycle 1, a 'fish' sub-cycle to which we have assigned a plume symbol. 'Twelfth Symbolism' No. 70, which is a 'fish' symbolism with a plume, must therefore be related to that Twelfth. And as sub-cycle 1 recurs at the Ninth Twelfth, we must

assign to that Twelfth the corresponding 'Twelfth Symbolism' No. 76, which is also a 'fish' symbolism with a plume.

The Third Twelfth is related to sub-cycle 3, a 'condor' sub-cycle with a plume. 'Twelfth Symbolism' No. 69 is a 'condor' symbolism with a plume and must therefore be assigned to the Third Twelfth. And as sub-cycle 3 recurs at the Eleventh Twelfth we must assign to that Twelfth the corresponding 'Twelfth Symbolism' No. 77, which is also a 'condor' symbolism with a plume.

The Second and Tenth Twelfths are related to sub-cycle 2, a 'fish' sub-cycle (without plume). To these Twelfths must be assigned 'Twelfth Symbolism' No. 78 (the 'double' symbolism) which is the only remaining 'fish' symbolism of the corresponding pairs.

The Fourth and Twelfth Twelfths, relating to sub-cycle 4 (condor) must therefore be assigned to 'Twelfth Symbolisms' Nos. 71 and 75 (the remaining 'condor' symbolisms) respectively.

All the 'corresponding' Twelfth Symbolisms have been assigned to 'corresponding' Twelfths of the 1st year. Let us now deal with the four 'non-corresponding' Twelfths (5th, 6th, 7th, 8th). The 'non-corresponding' 'Twelfth Symbolisms' are Nos. 72, 73, 74, and 58.

Assuming that the year started with the First Twelfth and that the equinoxes fall in the First and Seventh Twelfths it is appropriate that the Seventh Twelfth, to which sub-cycle 7 is related, should be assigned to the Main Figure, Item 58, since this Figure symbolizes the equinoctial Twelfths. (See Chapter 6.)

The remaining 'condor' Twelfth, the Eighth, related to sub-cycle 8, must be assigned to the remaining 'condor' 'Twelfth Symbolism', No. 74.

There now remain the Fifth and Sixth Twelfths, both 'fish', related to sub-cycles 5 and 6 respectively, and 'Twelfth Symbolisms' 73 and 72, also 'fish'. For reasons which will appear later we shall assign the Fifth to No. 73 and the Sixth Twelfth to No. 72.

Similar considerations apply to the 'corresponding' Twelfths of the 2nd year:

The 1st and 9th Twelfths, related to sub-cycle 5, are assigned to 'Twelfth Symbolisms' 70 and 76.

The 3rd and 11th Twelfths, related to sub-cycle 7, are assigned to 'Twelfth Symbolisms' 69 and 77.

The 4th and 12th Twelfths, related to sub-cycle 8, are assigned to 'Twelfth Symbolisms' 71 and 75.

The 2nd and 10th Twelfths, related to sub-cycle 6, are assigned to 'Twelfth Symbolism' 78, the 'double' symbolism.

In the 'non-corresponding' group, the Seventh Twelfth is again assigned to the Main Figure, so that the Eighth Twelfth must be assigned to 'Twelfth Symbolism' 74, the remaining 'condor' symbolism. The Fifth and Sixth Twelfths thus remain to be assigned to 'Twelfth Symbolisms' 73 and 72.

Table I now shows all the Twelfths in two years; the relative sub-cycles; the nature of each, condor or fish; and the relative 'Twelfth Symbolism' of the Meander bays.

Let us now consider the knot signs of the 'Twelfth Symbolisms'. The difference in the number of knots, two or three, cannot be due to their being necessary to the identification of the 'corresponding' 'Twelfth Symbolisms', since that is quite sufficiently clear by the nature of their symbols and their positions in the bays, upper or lower. Even if each of the 'Twelfth Symbolisms' had the same number of knots there would be no ambiguity or doubt as to the corresponding pairs. The knot differentiation must be due to other reasons, and it is suggested that the difference is to enable the 'Twelfth Symbolisms' to be counted in the correct order in relation to the correct order of the relative sub-cycles.

Attention is drawn, also, to the non-symmetrical positions of 'Twelfth Symbolisms' Nos. 73 and 74, which, if transposed, would give the whole Meander a 'balanced' effect on either side of Item 73. This lack of symmetry is significant and must have been intentionally devised for some good reason.

When their sequence, as given in Table I, is examined, it is apparent that the 'Twelfth Symbolisms' in the bays cannot be counted, and were not, presumably, intended to be counted, in the same way as on the Calendar.

On the Calendar the Twelfths were counted from one open bay to the next open bay on the same side of the Meander, proceeding from right to left on the upper side and, after counting the solstitial Twelfth at the extreme left, continuing from left to right on the lower side to the solstitial Twelfth at the extreme right, hence again from right to left on the upper side.

One need only attempt this way of counting on the Idol Meander to realize that it cannot succeed *if the Twelfths are to have any relation to the 'Twelfth Symbolisms' and through them to the eclipse sub-cycles.* A

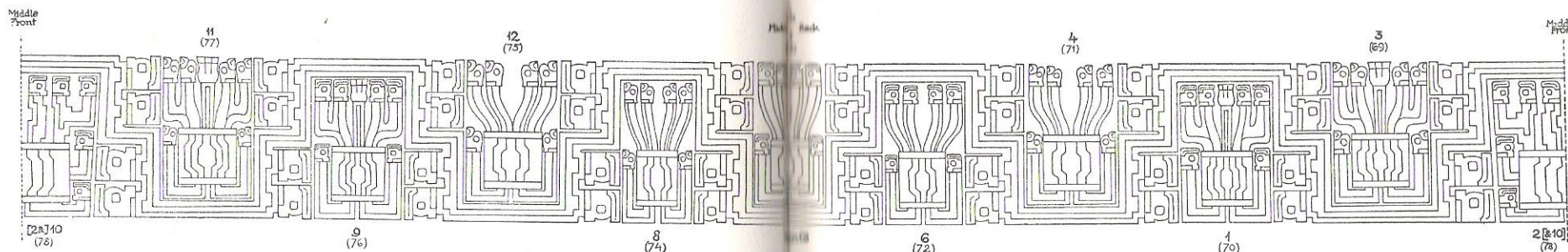


DIAGRAM 8. The Girdle—The Meander. 1-12 = Twelfths. (58), (69)—(78) = Number of Items (depicting the respective Twelfth Symbolisms). The Meander itself is Item 68.

count of the 'Twelfth Symbolisms' which is not in the order of the sub-cycles would be meaningless.

It should be borne in mind that Diagram 8 is a planiform expansion of the Meander, which is actually an enclosed belt of squarish section, so that, at the most, only one half of it would be visible at a time to an onlooker (if viewed from one of the corners).

When the 'Twelfth Symbolisms' of the Meander, plus the Main Figure, (as shown in Diagram 9) are numbered in the order of their relative Twelfths according to Table 1 (as in Diagram 9) it will be seen that the Idol count of the Twelfths is in two parts, generally one on either side of the Idol, the Main Figure belonging to the left-hand side and Item 73 to the right-hand side. Item 78 (the double symbolism) is counted twice, once on either side. This explains the non-symmetrical positions of Items 73 and 74, referred to above.

Of the eleven (in effect) 'Twelfth Symbolisms' of the Meander six are fish and five are condor. The Main Figure must be a condor symbolism to provide a balance between condor and fish (see Table 1) and must be regarded as having two knots (as is determined by Items 51 and 52). The symbolisms for the twelve Twelfths thus comprise:

2 condors, treble knots	=	6 knots
4 condors, double knots	=	8 knots
4 fish, treble knots	=	12 knots
2 fish, double knots	=	4 knots
		30 knots

The six condor symbolisms comprise 14 knots and the six fish symbolisms 16 knots, an inequality in the number of knots, as between condors and fish, which indicates some special reason in the distribution of the knots.

It is apparent that if the count of the twelve Twelfths is in two parts (1st to 6th, and 7th to 12th) each part must consist of *pairs* of condors or fish. Also, it may be surmised that the 'Twelfth Symbolisms' of each part should comprise an equal number of knots, viz., 15.

Let us now divide the above totals of symbolisms and knots into two equal parts:

1 condor, treble	=	3 knots	1 condor, treble	=	3 knots
2 condors, double	=	4 knots	2 condors, double	=	4 knots
2 fish, treble	=	6 knots	2 fish, treble	=	6 knots
1 fish, double	=	2 knots	1 fish, double	=	2 knots
		15 knots			15 knots

Although there are 15 knots in each of these divisions, the division does not satisfy the requirement that each half-year part must be composed of *pairs* of condors and fish. Obviously, a different division is required. Trial and error shows that the only arrangement which satisfies the condition as to pairs whilst retaining 15 knots in each division is as follows:

(1 pair) 2 fish	trebles	=	6 knots	(1 pair) 2 fish	trebles	=	6 knots
(1 pair) 2 fish	doubles	=	4 knots	(2 pairs) { 3 condor	doubles	=	6 knots
(1 pair) { 1 condor	treble	=	3 knots	{ 1 condor	treble	=	3 knots
(1 pair) { 1 condor	double	=	2 knots				
		15 knots				15 knots	

As may be seen from Table 1, column 3, this division agrees with the designation, condor or fish, in respect of each half-year, i.e., in Twelfths 1st to 6th, there are two pairs of fish and one pair of condors, in Twelfths 7th to 12th there are two pairs of condors and one pair of fish.

THE SYMBOLISMS EMBAYED IN THE MEANDER

Turning now to Diagram 9, let us assume that the Diagram is divided horizontally, Items 78, 78, 77, 69, 76, and 70, in one half, and Items 75, 58, 71, 73, 74, and 72 in the other. We thus have:

4 fish	trebles	=	12 knots	4 condor	doubles	=	8 knots
2 condor	trebles	=	6 knots	2 fish	doubles	=	4 knots
18 knots				12 knots			

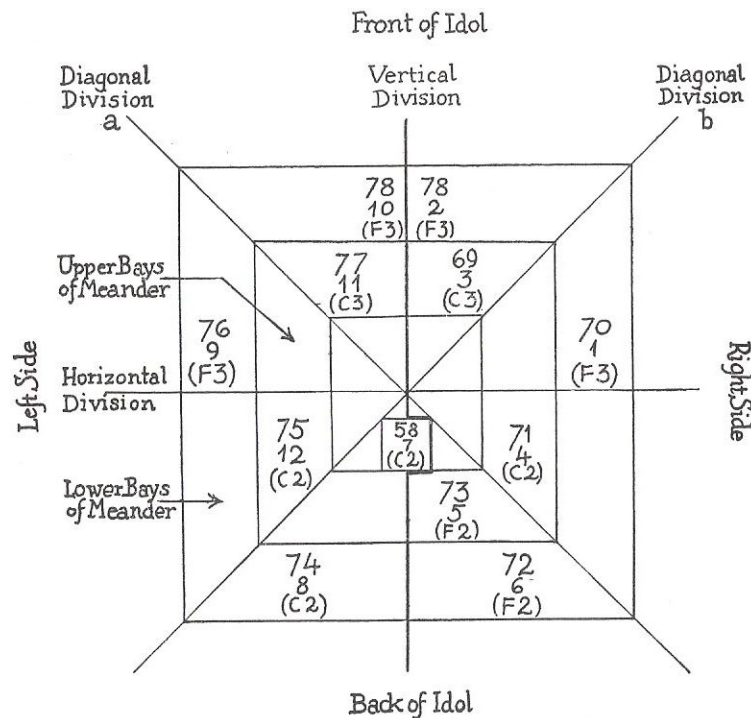


DIAGRAM 9. How the Twelfths are counted

Although the *pairs* of condors and fish satisfy the requirements, the number of knots in each group does not.

Let us now assume a diagonal division of Diagram 9 (Diagonal (a)). Items 78, 78, 77, 69, 70, and 71 in one group, and Items 76, 75, 58, 73, 74, and 72 in the other. This division gives:

3 fish	trebles	=	9 knots	1 fish	treble	=	3 knots
2 condor	trebles	=	6 knots	2 fish	doubles	=	4 knots
1 condor	double	=	2 knots	3 condor	doubles	=	6 knots
17 knots				13 knots			

THE SYMBOLISMS EMBAYED IN THE MEANDER

The other diagonal division (Diagonal (b)) is—Items 78, 78, 77, 69, 76, and 75 in one group, and Items 70, 58, 73, 74, 71, and 72 in the other. The result is the same as in the first diagonal division.

In neither of these diagonal divisions do the pairs or knots satisfy the requirements.

We are thus left with the vertical division of Diagram 9, viz., Items 78, 69, 70, 71, 72, and 73 in one group, and Items 78, 77, 76, 75, 74, and 58 in the other. These give:

2 fish	trebles	=	6 knots	2 fish	trebles	=	6 knots
2 fish	doubles	=	4 knots	1 condor	treble	=	3 knots
1 condor	treble	=	3 knots	3 condor	doubles	=	6 knots
1 condor	double	=	2 knots				
15 knots				15 knots			

As stated above, this is the *only* division which satisfies the requirements both as to *pairs* of condors and fish, and the number of knots in each division.

It is apparent from the above that the allocation of either two or three knots to the Twelfth Symbolisms restricts the count of those symbolisms to two definite groups, a right-hand group and a left-hand group, corresponding to the first and second halves of the year respectively. With this in mind the Twelfths may be counted in their correct order according to their relative Twelfth Symbolisms and according also to their relative sub-cycles. Let us make such a count.

We must start with Item 70, representing the First Twelfth (sub-cycle 1). As this Item is a fish symbolism, the symbolism for the Second Twelfth (sub-cycle 2) must also be fish, and that Item 78 is to be counted, and not Item 72, is indicated by both Items 70 and 78 having treble knots, whereas Item 72 has a double knot. For the Third and Fourth Twelfths (sub-cycles 3 and 4) we require two condor symbolisms which, as we must keep to the right-hand side of the Idol, must be represented by Items 69 and 71 respectively. The Fifth and Sixth Twelfths (sub-cycles 5 and 6) must be fish symbolisms, for which Items 73 and 72 respectively must be counted.

In the second half of the count, as the Seventh is an equinoctial Twelfth (sub-cycle 7) Item 58 must be taken. For the Eighth Twelfth (sub-cycle 8) a condor symbolism is required to pair with Item 58. Item 74 must obviously be chosen, since, if we took Item 75 it would leave Item 77 without a partner to pair with it. The two fish symbolisms, Items 76 and 78, thus represent the Ninth and Tenth Twelfths (sub-

cycles 1 and 2) respectively, leaving the remaining two condor symbolisms, Items 77 and 75, respectively to be counted as the Eleventh and Twelfth Twelfths (sub-cycles 3 and 4).

The second year may be counted in the same way.

Chapter 5

THE MEANDER

By far the most impressive, and certainly a most important, part of the Calendar of Tiahuanaco is the Great Meander. The Great Idol also features a Meander (Diagram 8) which is both similar and different: similar because it also consists of 'bays' and 'steps', different in their arrangement and number. The Meander of the Calendar on the Gateway is extended along the bottom of the sculpture, while that of the Idol encircles the statue in the form of a continuous belt, or girdle, at its 'waist'.

From these, and other, differences between the two meanders it may be inferred that whilst obviously the general significance is the same for both, that is, that both symbolize the path of the Sun, each is adapted in its details to the different conditions obtaining in their respective 'years'.

The Meander of the Great Idol consists of five bays opening upwards and five opening downwards. One of the latter is larger than the others; the reason for this has already been explained in Chapter 4. This enlarged bay is placed at the front of the Girdle where it forms the 'buckle'.

Looking into each of the ten bays are four fish heads, or 40 in all. A peculiarity of these fish heads is that whereas 24 are right side up, those looking into the downward opening bays, except the large or 'double' bay, are upside down, that is, 16 fish heads are so depicted.

The 'ribbon' of the Meander of the Great Idol consists of a double line featuring 240 'steps'. It is not very likely that this number of steps is an accidental or an arbitrary one, any more than was the number of steps on the Calendar Meander, which amounted to 264; hence there must be some good reason for this particular number. The 40 fish heads are attached to the Meander ribbon, 20 to its upper line and 20 to its lower.

On the Calendar Meander it was found that the number of 'steps' in the upper line of the ribbon divided by the number of symbols attached

thereto referred to the obliquity of the ecliptic at that time. There were 264 steps on the upper, or solar, line of the ribbon, to which were attached 20 condor heads and two Crowned Condors, or 22 in all. Each condor could thus be valued at 12 solar steps, which, as was found in the course of other considerations, was the extent of the obliquity at the time of the Calendar. The obliquity was thus $1/22$ nd part of the full circle of the ecliptic.

If there is a relationship between the obliquity and the number of condor heads and steps on the Calendar Meander, it is not unlikely that a similar relationship exists between the fish heads and steps on the Idol Meander. If so, then the difference between the number of Calendar solar steps, 264, and the number of Idol steps, 240, could be explained on the assumption that the obliquity at the time of the Calendar was different from its value at the time of the Idol.

The Idol Meander ribbon bears 20 fish heads on either side, so that the 40 fish heads may be regarded in relation to the ribbon as twice 20, or, in other words, that 20 fish heads only should be related at one time to the 240 steps. On this consideration each fish head has a value of 12 steps, or $1/20$ th of the whole, so that the value of the obliquity thus indicated is $1/20$ th of 360° , or 18° .

That the obliquity of the ecliptic at the time of the Idol was greater than at the time of the Calendar is in accordance with the theoretical considerations of Hoerbiger's Theory. The Satellite, only 5-6 Earth radii distant, exercised an increasingly powerful influence on the equatorial bulge of the Earth and tended more and more to reduce the tilt of the Earth's axis in relation to the ecliptic. Eventually an almost upright position would be produced, when the Earth's equator would virtually coincide with the ecliptic.

We have no data on which to calculate the rate at which the obliquity would decrease. However, even if we take so short a period as 100 years as the interval between the Idol and the Calendar (*see* Chapter 10) the decrease of obliquity of $1\ 1/2$ degrees in that period would average only $54''$ a year. If the Idol : Calendar interval is taken as 300 years the average rate would be only $18''$ per year. Even the higher rate, based on the shortest Idol : Calendar interval, would not appear to be excessive, or beyond the bounds of possibility, considering the tremendous gravitational pull of the close Satellite.

Confirmation of an obliquity of 18° is provided by the Pedestals. On the Calendar the total number of pedestal steps is 22 ($8 \times 2; 2 \times 3$), while the Sun's amplitude extends over 12 solar steps. There is thus a

relationship between the obliquity and the pedestal steps ($22 \times 12 = 264$). On the Idol there are, in effect, 20 pedestal steps (*see* Chapter 6). With a value of 12 solar steps to the amplitude (or obliquity) the total number of solar steps represented by the pedestals is 240, so that the obliquity represents $1/20$ th of the circle, or 18° .

The solar steps of the Idol and the solar steps of the Calendar differ in value—12 Idol solar steps equal 18° , 12 Calendar solar steps equal $16\ 3/8^\circ$.

Regarding the peculiarity of the Idol Meander, that of the 40 fish heads attached thereto, 24 are the right way up while 16 are upside down: apparently a division 24-16 is indicated here. Now, with a value of 12 to each fish head these numbers indicate the following cross-references:

$$24 \times 12 = 288 = \text{number of days in a year (12 Twelfths),}$$

$$16 \times 12 = 192 = \text{number of days in eclipse cycle (8 Twelfths).}$$

Chapter 6

THE SYMBOLISMS ON THE BACK OF THE IDOL

I. GENERAL REMARKS

On the back of the Idol there is a compact, well-defined group of symbolisms, composed of Items 41-52, 57-60, and 66-67 of Diagram 5. Items 19 and 20 may also be connected with this group, which has been reproduced, enlarged, as Diagram 10.

There can be no doubt that this 'group' is a definite group, devised as such by the Maker of the Idol Calendar to contain some special information, and also intended to be regarded and interpreted as such by anyone desirous of 'reading' the glyphs.

On the statue itself the fact that this group of symbolisms belong together is easily appreciated as it takes up the whole of the back of the Idol, extending from the shoulders down to the waist, a fact which is not so easy to recognize in Diagram 5, but is readily seen in Diagram 4. This group is surrounded by Winged Figures whose very form, differing so absolutely from the symbolisms of the group, shows also that the latter must be regarded and interpreted separately. Let us shortly survey the symbolisms of which this group consists.

Occupying a central and prominent position in the group is the Main Figure (Item 58) on a two-step pedestal (Item 59); it is flanked on either side of its head by a 'Twelfth Symbolism' (Items 51 and 52). Below each of these 'Twelfth Symbolisms' is a face or head, without a body, bearing nine symbols (Items 57 and 60), situated above 'Twelfth Symbolisms' (Items 66 and 67) which are peculiar insofar as they feature continuant signs where the others have knot signs.

Above this lower sub-group there are two Twelfth Heads (Items 42 and 43), each bearing 24 symbols, flanked by two 'Twelfth symbolisms' (Items 41 and 44). Below each Head is a two-step pedestal (Items 47 and 48), each of which has at its side a double knot sign and a continuant sign (Items 45, 46, 49, 50).

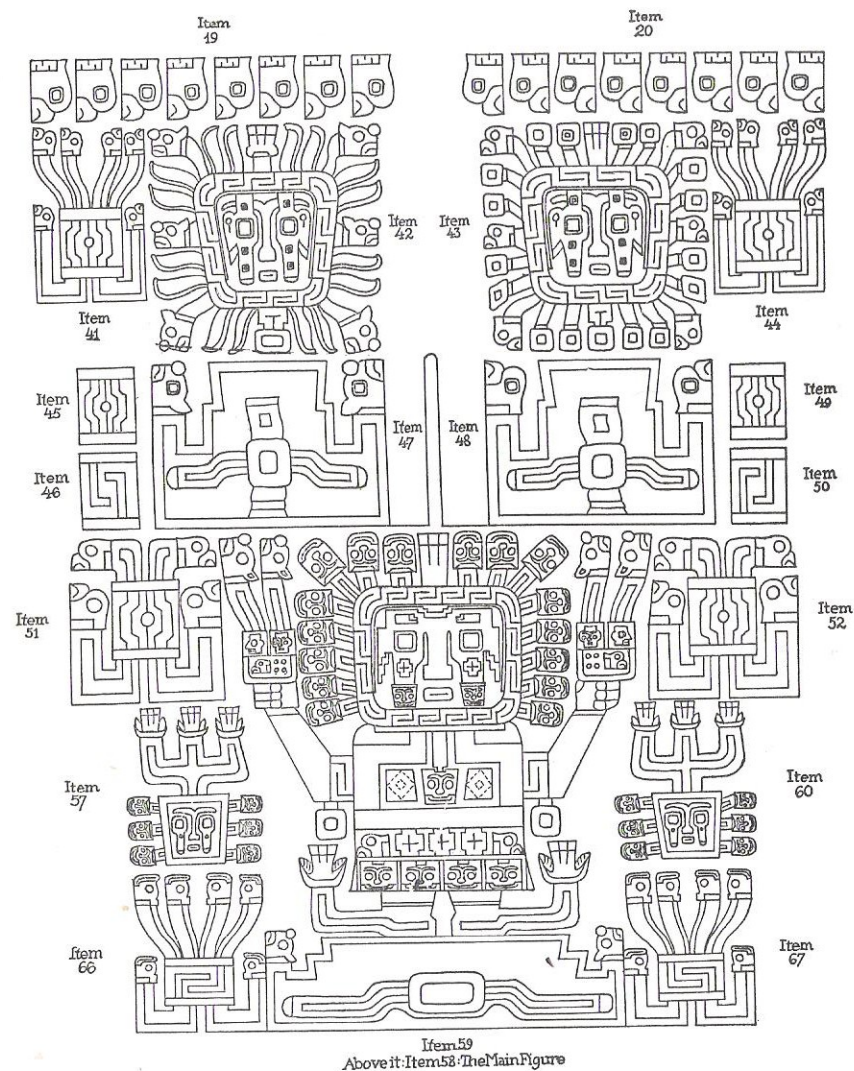


DIAGRAM 10. The Symbolisms on the Back of the Idol. (Items 19, 20, 41-52; 57-60; 66, 67.)

The lower half of the Diagram contains references to the four cardinal points of the year. In connection with the Main Figure Item 51 refers to the Autumn Equinox and Item 52 to the Spring Equinox. Item 57 symbolizes the Summer Solstice and Item 60 the Winter Solstice.

Looking down on this sub-group are 16 condor heads in two groups of 8 each (Items 19 and 20).

This group is perhaps the most important of the various groups of symbolisms on the Idol. The adjoining Winged Figures, on the analogy of those of the Calendar, may be regarded as supplementary to the indications of the central group, whilst the Meander and its embayed symbolisms, as we have seen in Chapters 4 and 5, are concerned with the year of the Idol in a more general way. For details of the year and of the eclipse cycle we must look to this central group of symbolisms. As will be seen, it provides full particulars of the peculiarities of the year of the Idol. But before dealing with this group collectively, we will take each of the symbolisms separately and attempt the interpretation of its significance, leaving a collective summing-up to a concluding Section.

II. THE EQUINOCTIAL TWELFTHS

The most important Twelfths of the year are undoubtedly the equinoctial Twelfths. They represent the pivot or balance on which the year hinges. It is only to be expected that they should be symbolized in some outstanding manner. We have already seen, in Chapter 4, that the Main Figure (Item 58) stands for the Seventh Twelfth, that is, an equinoctial Twelfth, in each of the two years of the threefold eclipse cycle when considered in its relationship to the Meander. When we consider this Figure apart from the Meander and in its relation to one year only, it may be inferred that it stands for two Twelfths, that is, the two equinoctial Twelfths, the First Twelfth and the Seventh Twelfth, as is also definitely indicated, or stressed, by the two 'Twelfth Symbolisms', of exceptionally large size, one on either side of its head (Items 51 and 52).

As does the Figure of the First Twelfth on the Calendar, the large size of the Main Figure on the Idol provides the necessary space on which to display other information relating to the eclipse cycle. Like the Figure of the First Twelfth on the Calendar the Main Figure of the Idol consists of a Head and a Body—but the meaning of the symbols on each of those parts differs as between the figures. On the Calendar Figure the head symbols relate to days and the body symbols to lunations. On the Idol Figure the symbols on the head as well as those on the hands, that is, the symbols on all parts above the neckband and the wristbands, refer to lunations, while those on the body refer to

revolutions, or passages. That the two matters and the relative numbers shown in them are intimately related with one another, however, is shown by the bands (the two box-bands and the ribbon between them) which effect a connection between the two parts of the Main Figure.

In the following Sections it will be shown how the symbols carried by the Main Figure represent the revolutions and lunations of one particular sub-cycle, and how they also indicate certain important cyclical sub-divisions of the eclipse cycle.

III. THE REVOLUTIONS

In the course of the 192 days of the Eclipse Cycle the Satellite revolves 283 times round the Earth, as seen by an extra-terrestrial observer. An observer on the Earth, however, sees the Satellite rise and set only 91 times in 192 days. This is due to the fact that the Earth rotates, and the Satellite revolves round it, from west to east, the Satellite moving more quickly than the Earth spins: hence only the difference between the two movements becomes apparent ($283 - 192 = 91$). To avoid confusion between the real and the apparent revolutions of the Satellite we shall refer to the former as 'lunations', that is, the period from one solar eclipse to the next, and to the latter as 'revolutions', that is, the period from one rising, or setting, of the Satellite to the next rising, or setting.

As there are 91 revolutions in the eclipse cycle of 192 days the number of revolutions in each 24-day sub-cycle is $11 \frac{3}{8}$ ths. The period of a revolution is 63.296 T/hours.

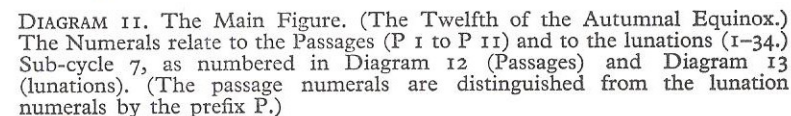
Each revolution of the Satellite consists of two 'passages' across the sky, from horizon to horizon, one above and one below the horizon. The period of a passage is not constant, its duration changing slightly according to the time of the year. In an ideal equinoctial eclipse cycle, as in Diagram 6, the period of a passage is half that of a revolution, or 31.648 T/hours.

In each sub-cycle there are 11 complete revolutions. It is apparent, however, that although each sub-cycle contains that number of complete revolutions, each begins at a different part of a revolution; consequently each sub-cycle differs in respect of the types of passages formed by the revolutions in relation to night and day. In symbolizing the revolutions, therefore, by one set of symbols, as all eight different sub-cycles cannot be represented individually, it would seem that two courses are open: (a) to symbolize the revolutions of one sub-cycle which

The most conspicuous of the revolution symbols is the puma face inside a 'box' on the chest of the Main Figure. (See Diagram 11.) Beneath this 'box' is the 'skirt', on the upper 'belt'-like part of which are two condor heads with three 'crosses' between them, and on the lower part a group of four puma faces in a row clamped together by a square-bracket-like element. Pendant from the arms of the Figure are two disks, above each of which, on the sleeve, is a 'continuant' sign. Finally, there are two budded plumes, at the ends of two long brackets which project from the feet and bend upwards on either side of the skirt.

Let us now assign the symbols to the relative passages.

Apart from the puma face in the 'box' the firmly-linked row of four puma faces is easily the most striking feature on the body of the Main Figure. It is certainly not too bold to surmise, from their form and grouping, that these four symbols refer to a sequence of four passages which are similar in type, and during which, as may be inferred from the puma faces, the Satellite transits during the night. If we now examine sub-cycle 7 with this in mind we find that Intermediate Sub-cycle 1 contains the consecutive passages 6, 7, 8 and 9, all of which are similar in pattern, as they feature a satellitic eclipse at a high altitude with a solar eclipse on either side, i.e., the Satellite transits during the night (see Diagram 15). They are the only four such passages in sub-cycle 7 and hence they are appropriately assigned to the four puma faces at the bottom of the skirt of the Main Figure, the only four of a kind among the 11 symbols depicted. These four puma faces actually refer to all the passages in Intermediate Sub-cycle 1.



The remaining seven passages, Nos. 1, 2, 3, 4, 5, 10 and 11, may be divided into two kinds, viz., Nos. 1, 5 and 10, which contain a satellitic and a solar eclipse at roughly the same altitude and are therefore 'neutral' or 'disk' types of passage; and Nos. 2, 3, 4 and 11, whose solar eclipses, being at higher altitudes than their satellitic eclipses are 'condor' types of passage (see Table 2, Chapter 4). We will deal first with the latter group.

It is obvious that the two disk symbols cannot be assigned to 'condor' types of passage, nor is it likely that the puma face in the box should be assigned to such. For passages 2, 3, 4 and 11, therefore, we have two condors and two budded plumes to assign. Now, although of these four passages No. 3 is most obviously a budded plume passage, since the solar eclipse of that passage takes place very near the meridian, the similarity of passages 2, 4 and 11 necessitates some special indication as to which of these should be symbolized by the other budded plume. This indication is provided by the *three* crosses between the two condors. By assigning the second budded plume to passage 11 we are left with passages 2 and 4 for the two condor symbols. Between these two passages there are *three* passages, two below and one above the horizon; or, in other words, they are separated by three passages. The assignments of passages 3 and 11 to the budded plumes and of passages 2 and 4 to the condors are the *only* assignments which allow of *three* passages between the two passages symbolized by the condors. The three crosses thus serve as a guide to the correct assignments of the condor and budded plume symbols. Had the crosses been omitted from the symbolism definite assignments could not have been made.

Passages 1, 5 and 10 now remain to be assigned; the symbols which remain are the two disks hanging from the arms of the Main Figure, and the puma face within the box on the chest of the Figure.

Actually, all three passages, Nos. 1, 5 and 10, are normally 'disk' passages, that is, they do not conform to the general run of passages with a central eclipse at a high altitude; hence they are neither condor or fish, nor budded plume or puma face passages, and are therefore represented by a neutral symbol, the disk. (See Table 2, Chapter 4.) With three 'disk' passages we have to find some indications pointing to the two which are to be in fact symbolized by the disks on the arms of the Figure.

Passages 1 and 10 are identical in that both start with a solar eclipse at (or near) sunset, whereas passage 5 starts with a satellitic eclipse near sunrise. At first glance, therefore, it might seem that the two disks

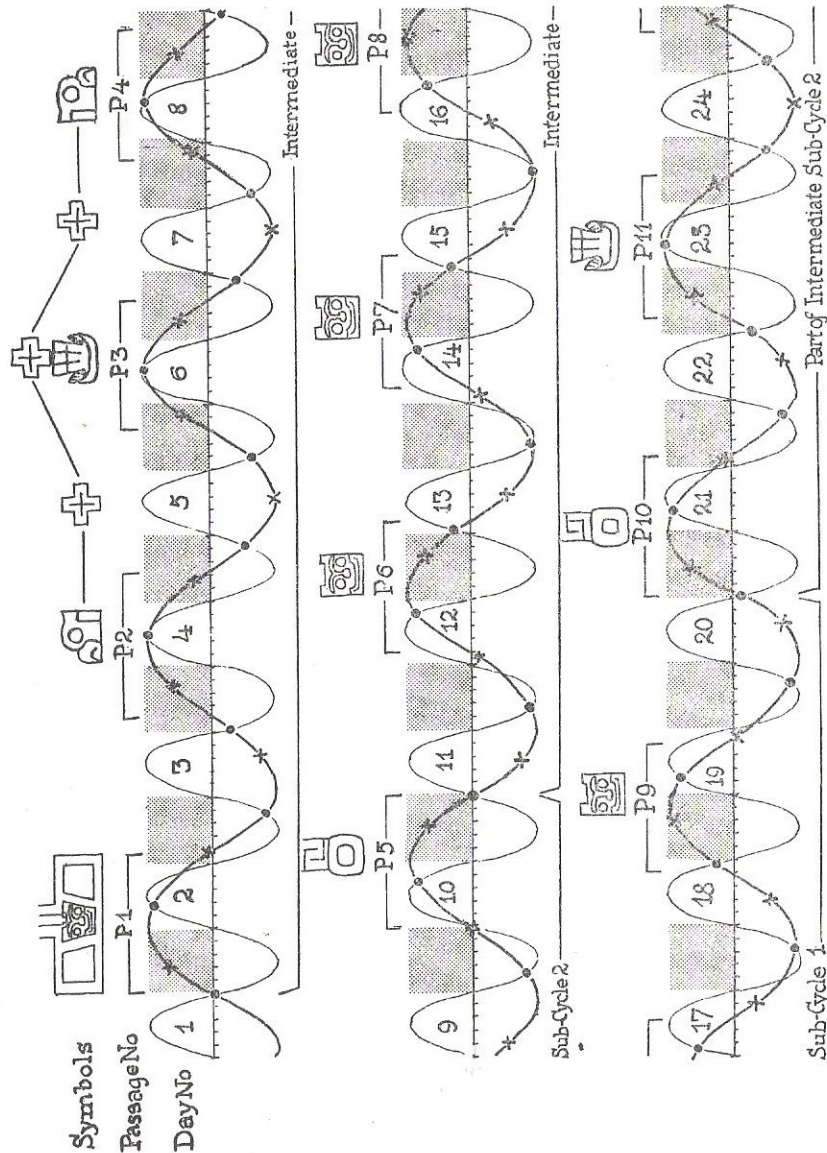


DIAGRAM 12. The passages and their symbols. (Showing the relation between the 11 symbols on the lower part of the Main Figure and the 11 passages of sub-cycle 7. See also Diagram 11.)

should be assigned to the two identical passages, Nos. 1 and 10. But this would be a misreading of the symbolism, which has been designed clearly to indicate that it is passages 5 and 10 which are the correct assignments for the disks.

Above the disks which depend from the arms of the Main Figure, on the sleeves, there are continuant signs. These signs convey the meaning of 'continuation' or 'succession' and thus indicate a relationship or association between two events.

The arms of the Figure, bearing the continuant signs, the pendant disks, and the upraised series of symbols held in the hands, are each self-contained. They are separate from the head of the Figure and though by the nature of things they are connected with the body the signs and symbols they bear have no connection with the symbols of the body. It is evident, therefore, that the relationship or association indicated by the continuant signs must be between the disks and the groups of symbols held in the hands.

Now, as shown in Section V, the symbols in the right hand of the Figure relate to lunations 14 to 21, and those in the left hand to lunations 22 to 29. Lunation 14 is part of passage 5 and lunation 29 is part of passage 10. There is thus a relationship between passages 5 and 10 and the groups of lunations symbolized by the groups of symbols in each hand. There can be little doubt that the continuant signs are intended to indicate this relationship since, if they had been omitted, no such relationship would be apparent. These signs therefore definitely indicate passages 5 and 10 as those symbolized by the disks pendant from the arms of the Figure.

We are thus left with passage 1, to which we must assign the puma face within the box.

In addition to the puma face the box contains two enclosed compartments, one on either side of the puma face, inside each of which is an element, the form of which is not clear. Posnansky depicts them as squares standing on one angle, with a small circle or square within. A surmise as to their purpose is given later.

We must now consider why passage 1 of sub-cycle 7 which, as has been said, is a 'disk' type of passage, has been symbolized by a puma face, and also why this symbol has been placed inside a 'box'. This necessitates a discussion on the relationship between the eclipse sub-cycles and the equinoxes.

IV. THE EQUINOXES AND THEIR RELATION TO THE ECLIPSE CYCLE, THE TWELFTHS, THE MAIN FIGURE AND THE PUMA FACE IN THE BOX

Let us first consider on what day of the equinoctial Twelfths the equinoxes fell. We need consider here only an ideal year of 12 Twelfths of 24 days each, that is, a year of 288 days. The question whether or not the true year differed from this ideal year, with consequent 'straying' of the equinoxes, does not affect the argument. (This difference can anyhow only have been very slight.) Two possibilities only need be considered: (a) whether the equinoxes fell on the first day of the equinoctial Twelfths, i.e., the 1st day of the relative sub-cycles, or, (b) whether they fell on the 13th day.

Regarding (a): If the equinoxes fell on the 1st day of their respective Twelfths, then the count of the Twelfths in relation to the equinoxes would be as follows:

			AE			
3	2	1		12	11	10
4	5	6		7	8	9
			VE			

(AE = Autumnal Equinox, VE = Vernal Equinox)

Accepting that the Autumnal Equinox was in the aphelion half of the year, as at the time of the Calendar, and assuming that the year of the Idol started at the Autumnal Equinox, the Solstices would fall on the 3rd day of the Fourth Twelfth and the 21st day of the Ninth Twelfth (accepting the Calendar division of the year between aphelion and perihelion). The solar year of the Idol cannot have differed materially from that of the Calendar except in respect of the number of days, and it may be accepted that at the time of the Idol the year was balanced at the equinoxes as was the year of the Calendar. Now, with the arrangement of the Twelfths in relation to the equinoxes as given above it is not possible to reconcile the pedestals with the Twelfths. The pedestals relate to the Sun's amplitude, and the absence of such at the solstitial Twelfths is due to the absence of any noticeable amplitudinal movement in those Twelfths. With the Twelfths counted as above the amplitude in the Third and Fourth Twelfths would be comparable, and if the Third required a pedestal on account of its amplitude, so also should

the Fourth. (See Section IX.) This applies also in respect of the Tenth and Nine Twelfths. Possibility (a) must therefore be rejected.

Under possibility (b) the Idol Twelfths would be balanced on either side of the equinoxes as on the Calendar, and the solstitial Twelfths would be the Fourth and Tenth, in both of which there would be no noticeable amplitudinal movement and therefore those Twelfths would not require pedestals. The count of the Twelfths would be as follows:

			AE		
	3	2	I	I2	II
4					
	5	6	7	8	9
			VE		10

There seems no doubt that (b) is the only possible relationship between the Twelfths and the Equinoxes, i.e., that the equinoxes fell on the 13th days of the equinoctial Twelfths or sub-cycles. Let us now consider this in relation to the eclipse cycle.

In Diagram 6 the eclipse cycle starts from the solar sunrise eclipse of the 1st day of sub-cycle 1. If this is regarded also as marking the beginning of the First Twelfth then the equinox would fall on the 13th day of sub-cycle 1. On the other hand, if the equinox fell on the solar sunrise eclipse day, that is, on the 1st day of sub-cycle 1, then that day must be regarded as being the 13th day, so that the eclipse cycle must have started on the 13th day of sub-cycle 8 of Diagram 6 as it stands. The question is, in other words: Did the Twelfths correspond (a) to the sub-cycles as in Diagram 6, or, (b) did they fall between the sub-cycles as shown in that Diagram?

Now, as shown in Chapter 2, the eclipse cycle as in Diagram 6 is divided into definite pairs of sub-cycles, with a horizon eclipse on the first and last days of each pair, a clean-cut division which would not obtain under the alternative arrangement as at (b) above.

Also, if the eclipse cycle were as at (b) none of the sub-cycles would fit the revolution symbols which so appositely correspond to the passages of sub-cycle 7 of Diagram 6. (See Section III.)

We must conclude, therefore, that Diagram 6 as it stands is correct and that the Twelfths corresponded to the sub-cycles as shown in that Diagram.

Let us now see how these conclusions affect the puma face in the 'box' which was allocated to passage 1 of sub-cycle 7.

The meaning of the 'box' symbol is obscure, but there is some reason to believe that it has a symbolical connection with the equinoxes, or, at least, with the equinox marking the beginning of the year. On the Calendar a similar 'box' has within it a symbol which represents the autumnal equinoctial revolution of the Satellite. The Main Figure of the Idol symbolizes the equinoctial Twelfths, hence we might reason, on the analogy of the Calendar, that the puma face in the 'box' symbolizes a similar revolution in the Idol eclipse cycle, the special nature of this revolution taking it out of the 'neutral' or 'disk' class and necessitating a special symbol for it. But the Idol eclipse cycle differs from that of the Calendar and other considerations apply.

Assuming that the Autumnal Equinox fell in sub-cycle 1, then, in the two-year cycle of the Twelfths, the equinoxes would fall as follows:

1st year	1st Twelfth	Autumnal Equinox	Sub-cycle 1
1st year	7th Twelfth	Vernal Equinox	Sub-cycle 7
2nd year	1st Twelfth	Autumnal Equinox	Sub-cycle 5
2nd year	7th Twelfth	Vernal Equinox	Sub-cycle 3

Every two years, therefore, the Autumnal Equinox alternates between sub-cycles 1 and 5, and the Vernal Equinox between sub-cycles 7 and 3. Even if the Autumnal Equinox fell in sub-cycle 7 instead of sub-cycle 1 in the 1st year this alternation would still apply.

On the Calendar the equinoctial revolutions were the same for both equinoxes and for each and every year, whereas on the Idol, even if we take only one equinox, there are two different equinoctial revolutions. In symbolizing the equinoctial revolutions, therefore, the devisers of the Idol symbolism had a different problem to contend with than had the devisers of the Calendar.

We have seen that the Equinoxes must fall on the 13th of the relative Twelfths and that the Twelfths correspond to the sub-cycles as in Diagram 6. We have seen also, that the puma face in the 'box' represents passage 1 of sub-cycle 7. It follows that the puma face in the 'box' does *not* symbolize an *actual* equinoctial revolution. It is clear, in fact, that it cannot, under any circumstances, represent an equinoctial revolution, which must necessarily be on the 13th of the relative Twelfth or sub-cycle, that is, it must be the middle one of three 'disk' passages. As shown in Section III the continuants on the arms of the Figure indicate that the disks must be related to the second and third of three such passages, so that the passage symbolized by the puma face in the 'box' must necessarily be towards the beginning of a sub-cycle. If, therefore,

the 'box' does in fact relate to the equinoxes, the puma face within it must represent the equinoctial revolutions only in a symbolical sense.

In view of this conclusion it is not unlikely that the additional symbolism in the 'box' at either side of the puma face has a relation to this matter. It may be intended to show or indicate that whilst the puma face represents a revolution in the general symbolizing of the revolutions, that revolution is not an actual equinoctial one. The two compartments, one on either side of the puma face, may indicate that there were two equinoctial revolutions, either the two different equinoxes of one year, or the same equinox of two years. The fact that the puma face in the 'box' is joined to the Head of the Main Figure may also have some significance in this respect. However, the additional symbolism in the 'box' is indistinct and the precise nature of the elements inside the two compartments cannot be ascertained.

A final matter regarding the Equinoxes may be mentioned. On the Calendar the First Twelfth is related to the Autumnal Equinox which thus marked the beginning of the year. Does the Main Figure of the Idol also mark the Autumnal Equinox and the beginning of the year?

As shown in Section II, the Main Figure represents both equinoxes in its relation to the central group of symbolisms. In its relation to the Meander, however, as shown in Chapter 4, it represents the Seventh, not the First, Twelfth. Thus, if the Vernal Equinox fell in the Seventh Twelfth, as at the time of the Calendar, the Autumnal Equinox fell in the First Twelfth, but if the Seventh marks the Autumnal Equinox then the First marks the Vernal Equinox. Although in this Section we have assumed that the Autumnal Equinox fell in the First Twelfth as on the Calendar, that was only for convenience of reference, since no indications can be seen which would establish the point.

This matter, however, is of no real importance. The actual numbering (or naming) of the Twelfths is merely a matter of convenience. If we of the present day, for instance, changed the names of our months (as did the French in 1793—only to revert to the original names, however, in 1806) it would not alter in any way the present relationship between the calendar months and the year (just as little, indeed, as does the fact that we actually call the ninth to twelfth months of our Calendar the seventh to tenth—September to December). Nor would that relationship be disturbed if we decided to call, say, September the first month of the year instead of January (as did the French also in 1793). However, it is certainly of great convenience to relate the beginning of the year (wherever it may start) to a certain month, or Twelfth. On the Calendar

of Tiahuanaco the imposing central figure on its three-step pedestal above the Great Meander points to it being regarded as of special importance, hence as marking the Beginning of the Year and so entitled to be designated the First Twelfth. No such pointer is given on the Idol, so, following the Calendar, in this respect, we have assumed that the year of the Idol also began with the Autumnal Equinox and that that equinox was regarded as the Beginning of the Year, the Twelfth in which it falls being designated the First Twelfth.

What is of importance is the relationship between the Twelfths, however designated, and the Sun and Satellite, or, more precisely, the relationship between the Twelfths and the eclipse sub-cycles. So far as the Sun is concerned it is assumed that the Autumnal Equinox fell in the aphelion half of the year, since the year of the Idol cannot have been different in this respect to any appreciable extent from that of the Calendar, and also that the equinoctial and apsidal lines must, as at the time of the Calendar, have either coincided or diverged to only a very small degree. The relationship between the Twelfths and the eclipse sub-cycles is a matter which may be deferred until later. (*See* Chapter 7.) These considerations do not affect the general interpretation of the Idol symbolism, but they do affect the interpretation of the Winged Figures where the eclipse cycle in relation to the actual year must be taken into account.

V. THE LUNATIONS

In the eclipse cycle of 192 days the Satellite makes 283 real revolutions round the Earth. To a terrestrial observer these real revolutions are apparent as the period between two successive solar eclipses, and are here termed 'lunations'. The period of one lunation is 20.353 T/hours. Thus, in 24 days, there are 35 3/8ths lunations.

As the lunation is reckoned from one solar eclipse to the next (not from one satellitic eclipse to the next) there cannot be less than 34 or more than 35 *complete* lunations in a 24-day period. The latter figure is expressed by the number of symbols (counting the condors as four each because of the four circles behind them) on the head and arms of the Main Figure; the former number, 34, is also expressed, as will be seen, by the exclusion of the plume symbol.

On the head of the Main Figure are 17 symbols which form a part halo round its face (cf. Diagram 11). There is a centrally placed plume with two vertical puma faces to the left and to the right, and on either

side of the head there is a group of five horizontal puma faces. Between each of these vertical and horizontal groups, at each 'corner' of the halo, there is a puma face set at an angle. On the face of the Figure there are two more puma faces, of a slightly different form from those on the halo. The arms of the Figure are raised upwards as if to add the bunches of symbols in its hands to the halo group and also as if distinctly to separate the halo and hand symbols from those on the rest of the Figure. It may be that also the neckband and the wristbands are intended to stress this separation. The series of symbols held in either hand are identical and consist, reading from the bottom upwards, of a condor head, by the side of which are four small circles; above this condor symbolism are two symbols side by side, human heads, one shown full face and the other in profile; extending upwards from the human head symbols are two puma heads at the end of long brackets.

It might be expected that the lunation symbols are related to the same sub-cycle as that to which the revolution symbols are related, and when the various sub-cycles are examined it is found that the lunation symbols are indeed related also to sub-cycle 7.

Let us now assign the symbols to the lunations which they represent. To facilitate this, sub-cycle 7 has again been reproduced as Diagram 13. The lunations, in this Diagram, have been numbered 1 to 34, starting from the first complete lunation.

As in the case of the revolutions the most readily identifiable lunations are those of Intermediate sub-cycle 1. Here there are four lunations, all very similar, viz., Nos. 17, 20, 23 and 26. These lunations each begin and end with solar eclipses taking place at a moderate altitude so that the lunations extend throughout the night. To these four lunations may be assigned the four puma head symbols. It will be admitted that the position of these symbols, the highest of the series, expresses very appositely the culmination of the Satellite during these lunations just as the puma heads appositely express that the culmination takes place during the night-time. These assignments are further supported when considered in conjunction with the assignments of the four puma faces on the skirt to the four passages of which lunations 17, 20, 23 and 26 form part (see Section III). Just as, of the passage symbols, the four puma faces are the only four of a kind, so also, of the lunation symbols, the four puma heads are the only four of a kind, whilst the passages and lunations to which these symbols have been assigned are the only four such in sub-cycle 7.

The lunations immediately before and after these puma head

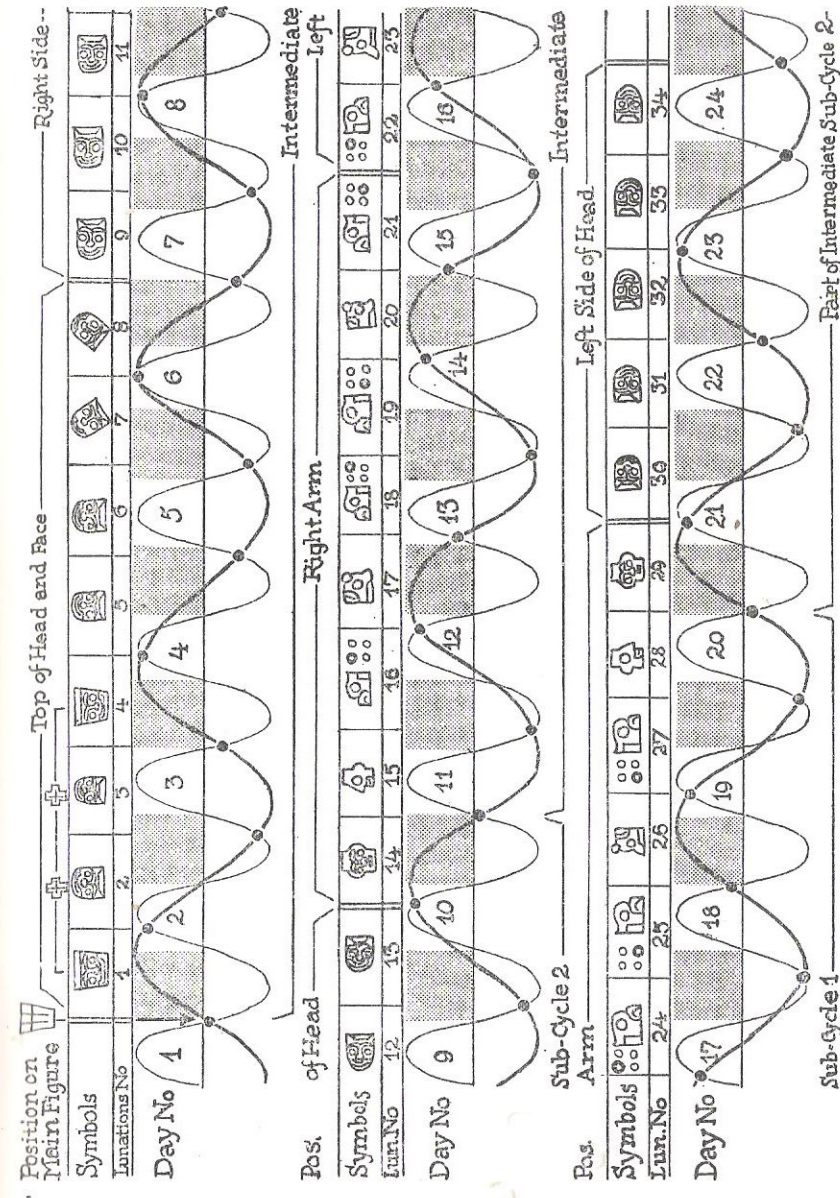


DIAGRAM 13. The Lunations and their Symbols. Sub-cycle 7. (See also Diagram 11.)

lunations are also very distinctive. They either begin or end with a solar eclipse at a moderate altitude, so that the Satellite crosses the horizon—i.e., rises or sets—during the day-time. There are eight (and only eight) lunations of this type in sub-cycle 7, viz., Nos. 16, 18, 19, 21, and 22, 24, 25 and 27. Such lunations are generally symbolized by condors (cf. The Calendar). There are, however, only two condors among the symbols under consideration, but, in view of the necessity for eight condors to symbolize these eight lunations, there can be no doubt that the groups of four small circles behind the two condor heads are an indication that each is to be counted for four, so that there are, in effect, eight condor heads which may be assigned, with justification, to the above-mentioned eight lunations.

The reason for this indication by means of four small *circles* to each condor is, in all probability, because the eye of the condor is represented by a similar small circle. As will be seen later, there is a relation between the number of eyes on the symbols (profile—one eye; full face—two eyes) and the Intermediate sub-cycles.

The limitation of the condor symbols to two and the indication of eight condors by means of the groups of four small circles, must have been deliberately devised for some particular reason. Rather than from considerations of space, it is more likely that the condors were limited to two in order to keep the number of symbols on the arms of the Main Figure to a certain number, for a reason which will be mentioned later.

We will take next the very peculiar full human face symbols. In assigning these we find an analogy from the Calendar of assistance. There the human face symbols represent lunations which start with a solar eclipse at sunset; the lunation thus extends throughout the night and the Satellite is high in the heavens at dawn the following morning. There are two such lunations to be seen in Diagram 13, Nos. 1 and 29. Each is the first lunation of an Intermediate Sub-cycle 2. Similar to this type of lunation, but in the reverse direction, is that which ends Intermediate Sub-cycle 2, viz., No. 14; this lunation extends throughout the night, the Satellite being high in the heavens at sunset, and ends with a solar eclipse at dawn the following morning. This also may be regarded as a full human face type of lunation. Of these three lunations, No. 1 is, for reasons to be given later, assigned to one of the puma faces within the head of the Figure; the two full human face symbols may thus be assigned to lunations 14 and 29.

It will be noticed that all the symbols so far assigned are of those held in the hands of the Figure, and that the assignments are all to lunations

within the group 14 to 29. It is not unlikely, therefore, that the group of symbols in the hands of the Figure are, as a whole, intended to symbolize this group of lunations, in which case the two profile human faces may be assigned to lunations 15 and 28. The 16 (in effect) symbols of the hands thus symbolize the sixteen lunations in the group 14 to 29.

Lunations 15 and 28 are the only ones of that type in sub-cycle 7. They are the first and the last lunations of an Intermediate Sub-cycle 1. No. 15 begins with a horizon solar eclipse and No. 28 ends with such an eclipse, both lunations being below the horizon. The reason why such lunations should be symbolized by a human face in profile is obscure. The puma face is used for lunations which are either wholly below the horizon, or which cross the horizon during the night-time. Even if this symbol were regarded as applicable also to lunations 15 and 28, its use must have been prohibited for certain reasons, possibly to confine the puma face symbol to the head of the Figure, and also, for reasons which will appear, because it was necessary that the symbols for lunations 15 and 28 should be profile symbols. It is possible, therefore, that the human face in profile was used as a contrast to the full human face. The latter symbol is used for special lunations which, above the horizon, begin with or end with horizon eclipses, so that the Satellite is on view right throughout the night (i.e., to a human observer). The turning of the head so as to present the profile may thus be regarded as symbolizing that the Satellite was invisible (except for the horizon eclipses) to a human observer during the type of lunation for which this symbol stands. (It may be that it was for this reference to these horizon eclipses that the symbol of a human face looking 'horizontally' in the one direction or the other has been chosen.)

Turning now to the symbols of the halo and the face of the Figure, it will be observed that within the face there are two puma faces which differ in design from those of the halo, but which are practically identical with the puma face within the 'box' on the chest of the Figure. As we have seen, in Section III, the puma face in the 'box' symbolizes the first passage of sub-cycle 7. We may therefore assign to lunation 1, which is part of passage 1, one of the two puma faces on the face of the Figure. Normally, lunation 1 is of a type symbolized by a full human face (cf. lunations 14 and 29) and it was probably to show the connection between this lunation and the passage of which it forms part that the full human face was substituted by a symbol corresponding in design to that by which the passage was symbolized.

Of the lunations still to be symbolized Nos. 4 and 32 are very similar

to lunation 1. Each is the third lunation following the first lunation of an Intermediate Sub-cycle 2. Lunation 11, the third before the last lunation of Intermediate Sub-cycle 2, is also of the same type, though in the reverse direction. To which of these three possible lunations, Nos. 4, 11 and 32, should the second puma face on the face of the Figure be assigned? Without any special indication the correct assignment must be in doubt and, recognizing this, the devisers of the symbology of the Idol have, as a guide, placed a cross above each of the puma face symbols. We may therefore assign the second puma face to lunation 4, since, between lunation 1 and 4, there are two lunations, Nos. 2 and 3.

It may be objected that we have associated the two crosses above the puma faces with lunations, whereas the crosses on the body of the Figure have been associated with passages. (See Section III.) The crosses, however, are 'abstract' elements, indicating 'units', analogous to the rectangles on the Calendar, which are units of varying denominations according to the matters concerned.

Disregarding, for the moment, the plume symbol, there now remain the 16 puma faces on the halo, corresponding in number to the 16 lunations still to be considered. The distribution of these symbols suggests that they are divided into definite groups. There are two groups of five each on either side of the head, while the six puma faces on the top of the head are arranged into groups of two, viz., a pair on either side of the plume, the puma faces at the corners forming a third pair.

As may be seen from Diagram 13, there are five lunations, Nos. 30 to 34, which form a group following the lunations to which the symbols of the left arm have been assigned. The five puma faces on the left side of the halo may therefore be assigned to these lunations. To balance this group, we may assign the five puma faces on the right side of the halo to the five lunations, Nos. 9 to 13, which precede the lunations to which the symbols of the right arm have been assigned. There is thus a complete 'balance' of symbols in respect of lunations 9 to 34, Nos. 9 to 21 on the one hand and Nos. 22 to 34 on the other. Our reason for assigning lunations 9 to 21 to the right side and Nos. 22 to 34 to the left side of the Figure, instead of vice versa, is to show various symbols on Diagram 13 as facing outwards from a central point between lunations 21 and 22, so as to correspond with the outward-facing direction of those symbols on the Figure. (See Diagram 11.) It should be understood, however, that as the Main Figure is completely symmetrical in respect of the symbols it bears, it is really of no consequence to which sides the two

groups are assigned. Thus, if Diagram 13 were drawn to be read from right to left instead of from left to right, a reversal of our assignments, as between the left and right sides of the Figure, would be necessary.

There now remain lunations 2, 3, 5, 6, 7 and 8. Nos. 2 and 3 are grouped between Nos. 1 and 4, forming a pair. Of Nos. 5, 6, 7 and 8, Nos. 5 and 6 are a similar pair to Nos. 2 and 3. These two pairs may therefore be assigned to the two pairs of puma faces on either side of the plume. Lunations 7 and 8 thus remain to be assigned to the puma faces at the corners of the halo. These two lunations form a 'matching' pair, with a solar eclipse on the meridian, and thus differ in 'pattern' from the other two pairs. As may be seen from Diagram 13, there is no 'balance' of lunations 1 to 8 as there is in the case of lunations 9 to 34. The 'balance' of the symbols for these lunations must therefore have been devised to ensure a symmetrical arrangement of the whole Figure.

We have now assigned all the 34 complete lunations of sub-cycle 7 to certain symbols, but have one symbol remaining—the plume.

The plume is a symbol which normally is used to represent eclipses taking place on the horizon. It is not normally used to symbolize a lunation. Its form, which represents the rays of the Sun appearing over the horizon, is very apposite to the former purpose but not to the latter. Hence, as there is in any case no lunation to which it could be assigned it must be related to the solar eclipse which begins the sub-cycle. Its position on the halo, corresponding to the similar plume in a similar position on Item 43, confirms this.

But why, it may be queried, should a plume, a symbol for a horizon eclipse, be introduced into a series of symbols for lunations, particularly as its presence is not necessary since all the lunations of the sub-cycle have already been symbolized? The reason is undoubtedly to indicate that while the normal number of complete lunations in a 24-day sub-cycle is 35, in the actual sub-cycle represented there are only 34 complete lunations.

Let us now consider certain other matters relating to the lunations and their symbols, from which it will be seen that the symbols do not merely represent the lunations, but by their grouping and their form symbolize certain peculiarities of the eclipse cycle which were mentioned in Chapter 3.

Three circumstances relating to the lunation and revolution symbols stand out as specially noteworthy: (a) the inclusion of a plume which is not a lunation symbol, (b) the representation of eight lunations by two symbols (condor heads) and eight small circles, and (c) the portrayal of

the disks as pendant from the arms of the Figure, a position which suggests a 'dropping-off' for certain reasons, and which, from the Calendar, we know may in fact indicate such a purpose. Possibly there is a connection between these three peculiarities.

If, from the lunation symbols, we exclude the plume and count the condor head symbols as one each, the number arrived at is 28. And if we allow the two disks to 'drop off' the arms and remain uncounted, the number of revolution symbols is 9. Also, the number of symbols on the head of the Figure, a self-contained group, is 19. There can be little doubt, therefore, that the symbols of the Main Figure have been devised to give expression to the number of lunations, revolutions and days in the Intermediate Eclipse Cycle of 19 days, in which took place 9 revolutions comprising 28 lunations.

Another peculiarity of the lunation symbols is that they may be divided into two kinds—those depicted with full faces, whether of pumas or human beings, and those shown in profile, that is, puma heads, condor heads and human faces. Of the former kind of symbol there are 20, and of the latter there are 14. It will be observed that the 14 profile symbols relate to the lunations of Intermediate Sub-cycle 1, and that the lunations of Intermediate Sub-cycle 2 (14 in the full and 6 in the part such Intermediate Sub-cycle) are symbolized by full face symbols. By means of the full and profile faces, therefore, the two Intermediate Sub-cycles are clearly distinguished.

It will be noticed also that the profile faces, those which relate to the lunations of Intermediate Sub-cycle Number *One*, have only *one* eye, whilst the full face symbols, which relate to the lunations of Intermediate Sub-cycle Number *Two*, have *two* eyes. Since, in sub-cycle 7, to which the lunation symbols are related, Intermediate Sub-cycle 1 is actually the *second* such in that sub-cycle, the number of eyes in the symbols of each of these groups indicates the order of the Intermediate Sub-cycles *in relation to the whole eclipse cycle*, which starts with Intermediate Sub-cycle 1.

If the eye is so important a reference we can also understand now why little circles were used as 'counters' for condor heads in the hand groups of symbols: they refer to what chiefly matters in this regard—the eye of the condor.

Since, as stated, the lunations of Intermediate Sub-cycle 1 are symbolized by the profile symbols, all of which are included on the arms of the Figure, the inclusion with those symbols of the full human face symbols must have some significance, or, put in another way, there

must be some reason for the exclusion of the full human face symbols from the company of the other full-face symbols of the halo and face of the Figure. As has already been mentioned, there is a distinct segregation of the symbols held in the hands from those on the head of the Figure. It will be remarked also that the symbols of the head show a lack of the diversity which is very apparent in the symbols held in the hands. A possible reason for these peculiarities may be seen when the form, number and distribution of the symbols of the head are examined. By various combinations the numbers 16, 17, 18 and 19 may be expressed, viz.,

- 16—Puma faces on halo
- 17—All symbols on halo
- 18—Puma faces on halo and face of Figure
- 19—All symbols on halo and face of Figure.

The significance of these figures is that they are the numbers of eclipses, solar or satellitic, above and below the horizon, in the various sub-cycles—see Table 1, Chapter 3.

Generally, the revolution and lunation symbols, in their relation to sub-cycle 7 both in respect of numbers and appositeness, leave no doubt that the eclipse cycle of 283 lunations in 192 days was actually that on which the symbology of the Idol was based, and this is confirmed by the way in which the form, number, distribution and grouping of the lunation symbols are related to the Intermediate Sub-cycles of such an eclipse cycle. They could not have fitted in so appositely, nor could the Intermediate Sub-cycles have obtained, had the eclipse cycle as stated been different even to a very small extent.

VI. THE SOLSTITIAL TWELFTHS

In each of the symbolisms, Items 57 and 60, there is a face or head to each side of which are attached three puma faces. Projecting from the top is a 'candlestick' of three branches each bearing a budded plume. (See Diagram 14.)

The 'Twelfth Symbolisms', Items 66 and 67, below these faces or heads, are fish symbolisms and, as already stated, are peculiar in that they have no knot signs but, instead, continuant signs.

From the fact that these symbolisms are not raised on pedestals may be inferred that they represent the solstitial Twelfths. The pedestals on which the Main Figure and the Twelfth Heads (Items 58, 42, 43)

THE SYMBOLISMS ON THE BACK OF THE IDOL

are raised are related to the Sun's amplitude (see Section IX) which is negligible in the solstitial Twelfths, hence these Twelfths have no pedestals. However, the solstitial Twelfths are, next to the equinoctial Twelfths, the most important of the year and are accordingly separately symbolized.

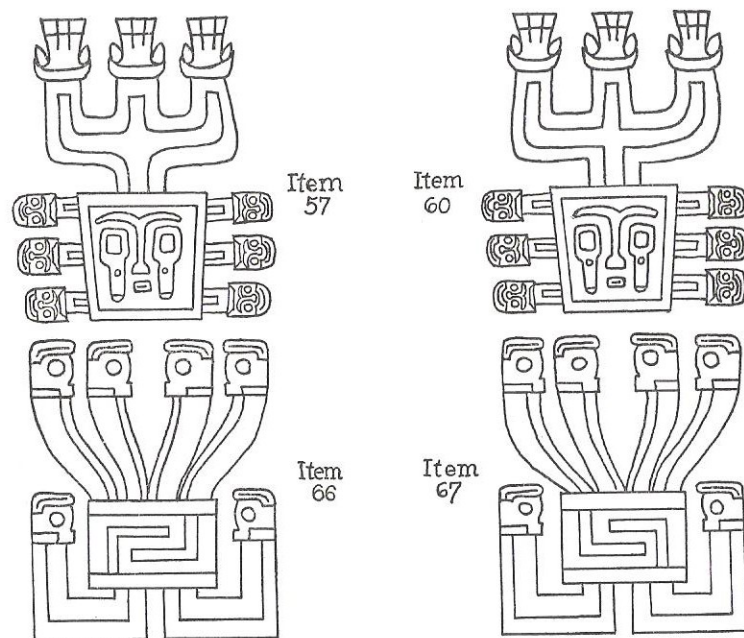


DIAGRAM 14. The Solstitial Twelfths. Separate Symbolization.
Upper Parts: Symbolization of relative Passages
Lower Parts: Twelfth Symbolisms

Items 57 and 66.
Tenth Twelfth: Summer Solstice
1st Year: Sub-cycle 2.
2nd Year: Sub-cycle 6.

Items 60 and 67.
Fourth Twelfth: Winter Solstice
1st Year: Sub-cycle 4.
2nd Year: Sub-cycle 8.

Also: References to sub-cycles 1 and 2 and 5 and 6.

Before dealing with the symbols of the solstitial Twelfths let us consider, first of all, how the Tiahuanacans symbolized the various passages, lunations and eclipses. The various points are made clear in Diagram 15, which shows all the different types of passages, lunations and eclipses and the various symbols employed for each type.

First, let us look at the budded plume symbol. This symbol has

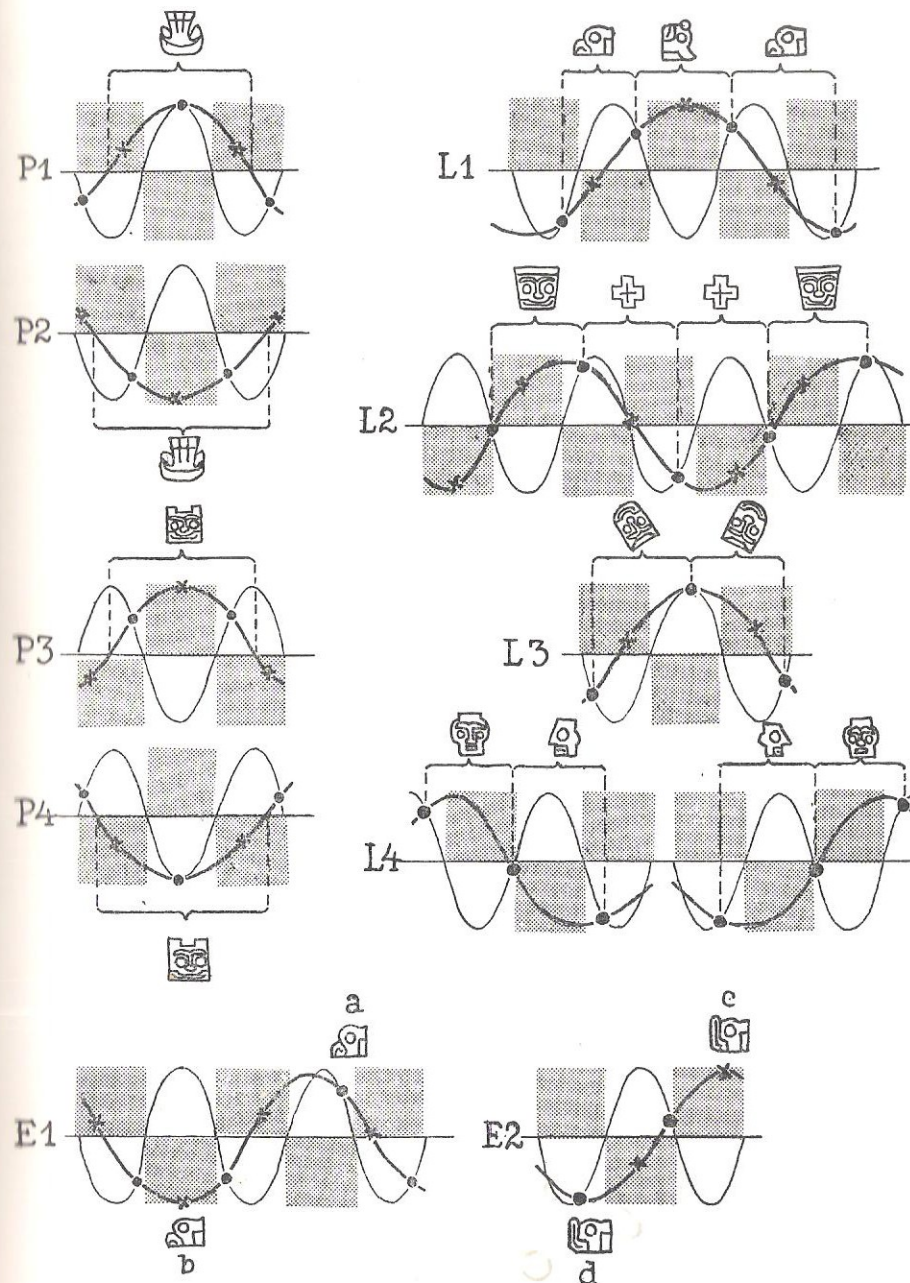


DIAGRAM 15. Illustrating the symbolic expression of various types of Passages, Lunations and Eclipses.

already been mentioned in Section III, but it may be desirable to explain it a little further, since it has significance not only in this Section, but also in connection with the lowest group of Winged Figures which are dealt with in a later Chapter.

The budded plume symbolizes that type of passage in which the Satellite transits during the day-time, so that there is a solar eclipse at a high altitude and two satellitic eclipses, one on either side of the solar eclipse, during the passage, all visible above the horizon of Tiahuanaco. The plume part of the symbol represents the solar eclipse and the two 'buds' the satellitic eclipses on either side. The form of the symbol is thus very apposite to the events during the type of passage which it symbolizes (Diagram 15 P₁). Below the horizon, of course, the converse applies: there the budded plume symbolizes a passage containing a central satellitic eclipse flanked by two solar eclipses (Diagram 15 P₂). The budded plume symbol thus refers to a special, really quite remarkable, group of three eclipses.

If, however, the solar eclipse only (above horizon) of such a passage is to be referred to it is symbolized by a condor head (Diagram 15, E_{1a}); conversely, a condor head also stands for a satellitic eclipse below horizon (Diagram 15, E_{1b}).

The converse type of passage to that symbolized by a budded plume is one in which the Satellite transits during the night so that there is a satellitic eclipse at a high altitude flanked by two solar eclipses. This type of passage is symbolized by a puma face (Diagram 15 P₃). Here, too, the converse applies when the passage is below the horizon: the puma face refers to a solar eclipse flanked by two satellitic eclipses (Diagram 15 P₄).

The satellitic eclipse of this type of passage, when considered by itself, is symbolized by a fish (Diagram 15 E_{2c}). Conversely, a solar eclipse at high altitude below horizon is also referred to by a fish (Diagram 15 E_{2d}).

With these explanations in mind it will be realized that the nine symbols—three budded plumes and six puma faces—on either of the symbolisms under discussion (Diagram 14) must relate to passages; not, as in the case of Items 42 and 43, still to be considered, where the symbols of the haloes are related to days.

Attention is now drawn to Table 2 of Chapter 4 where the letters 'C' and 'F' indicate the two types of passage referred to above. 'C' refers to a budded plume type and 'F' to a puma face type. It will be seen from the summary in this Table that in the case of sub-cycles 1 and

2, and 5 and 6, which are fish sub-cycles, there are six puma face passages (F) and three budded plume passages (C) in each of these sub-cycles. It will also be noticed that whereas the six puma face passages are not consecutive, the three budded plume passages in each sub-cycle take place consecutively. Therefore, on the symbolism, the puma faces are shown separately in contrast to the three budded plumes which spring from one stem, or are united as with a clamp.

In view of this there is little doubt that the symbols of the solstitial Twelfths are related to sub-cycles 1, 2, 5 and 6, that is, to the four fish sub-cycles, which are linked in pairs, 1, 2 and 5, 6 by the 'five-fold Intermediate Eclipse Cycle'. The continuant signs of the 'Twelfth Symbolisms' thus indicate that each such symbolism is related to two sub-cycles, i.e., that two sub-cycles, forming a pair, are to be read as one unit, in contrast to the usual knot sign which indicates a relationship to one sub-cycle only.

Assuming that the Autumnal Equinox fell in sub-cycle 1, then, in the two-year cycle of the Twelfths, the solstices would fall as follows:

1st year	4th Twelfth	Winter	Solstice	Sub-cycle 4
1st year	10th Twelfth	Summer	Solstice	Sub-cycle 2
2nd year	4th Twelfth	Winter	Solstice	Sub-cycle 8
2nd year	10th Twelfth	Summer	Solstice	Sub-cycle 6

The sub-cycles on which the solstices fall differ therefore from those indicated by the symbols of Items 57 and 60, though two, Nos. 2 and 6, are common to both. This, however, does not invalidate our explanation since, as discussed in Section X, it would appear that the lower sub-group of symbolisms has a relationship to the eclipse cycle.

VII. THE TWELFTH HEADS

Items 42 and 43 (see Diagram 16) are the two Twelfth Heads which, generally, are similar to the Twelfth Heads of the Calendar. Each bears 24 symbols on its halo and, on the analogy of the Calendar, these may be related to the 24 days in one Twelfth.

In the case of Item 43 there is a plume occupying position 1. At the 4th, 7th, 10th, 16th, 19th, and 22nd position there are condor heads. The 13th position is occupied by a 'disk', as are all the other positions, but the disk of the 13th position is distinguished by a 'T'-shaped bracket. Thus, there is an interval of two disks between each of the specially symbolized positions.

The halo of Item 42 shows the same intervals—but different symbols. The condor heads are replaced by puma heads, and the disk at the 13th position by an oval, which also has a 'T'-bracket. Both heads have plumes at the 1st position, but of different form. Instead of disks at the intermediate positions, Item 42 has peculiar symbols, the exact nature of which is obscure, but regarding which a conjecture as to their nature and meaning will be made later.

While these two Twelfth Heads are undoubtedly intended to be representative of all the Twelfths, or, at least, of all except the equinoctial and solstitial Twelfths, the fact that they are to be related to specific sub-cycles is indicated by the plumes at the 1st positions, which limits them to sub-cycles 1, 3, 5 and 7, each of which has a horizon eclipse on the 1st day, and by the oval of Item 42 at the 13th position, which restricts the application of that Item to sub-cycles 3 and 7, the only such in which, on the 13th day, the passage of the Satellite extends through practically the whole day, either above or below the horizon.

It is probable that Item 43 is to be related to sub-cycle 7, since that sub-cycle has been taken as the representative one for both the revolutions and lunations. (See Sections III and V.)

The left-hand Twelfth Head, Item 42, can also be related to sub-cycle 7, if we relate the oval at the 13th position to the passage below the horizon on the 13th day, but if this oval is to be related to a passage above the horizon then it must be related to sub-cycle 3. Sub-cycles 3 and 7 are the only ones in which, on the 13th day, the Satellite 'extends' over the greater part of the day, a peculiarity expressed by the symbol of an 'extended' disk—the oval.

The condor head as a symbol has, in general, a relation to the day-time, in contrast to the puma head, which has a general relation to the night-time. The two symbols represent the opposite sides of a whole, the one the reverse of the other, yet they are complementary to each other. Although this complementary antithesis, when applied to the eclipse sub-cycle, may be regarded as the alternation of day and night on the same side of the horizon, it might also be regarded as relating to the simultaneous occurrence of day and night on opposite sides of the horizon, since when it is day above the horizon it is night below it, and vice versa.

With these indications or possibilities in mind we may attribute to Item 43, the 'Condor Twelfth Head', a representation of sub-cycle 7 in respect of its events above the horizon, and to Item 42, the 'Puma Twelfth Head', a representation of its events below the horizon. The

two Twelfth Heads are thus complementary and between them give a representation of the whole of the sub-cycle.

However, it should not be overlooked that by operation of the 'Correspondence Principle' (see Chapter 3) sub-cycle 7 corresponds to sub-cycle 3. Item 43 may thus be read either for sub-cycle 7 above the horizon or for sub-cycle 3 below the horizon; Item 42 for sub-cycle 7 below the horizon or for sub-cycle 3 above the horizon.

Let us now examine the halo symbols of Items 42 and 43 in greater detail.

In respect of the eclipse cycle of the Calendar it was shown that the conjunctions, oppositions and quadratures of Sun and Satellite occurred

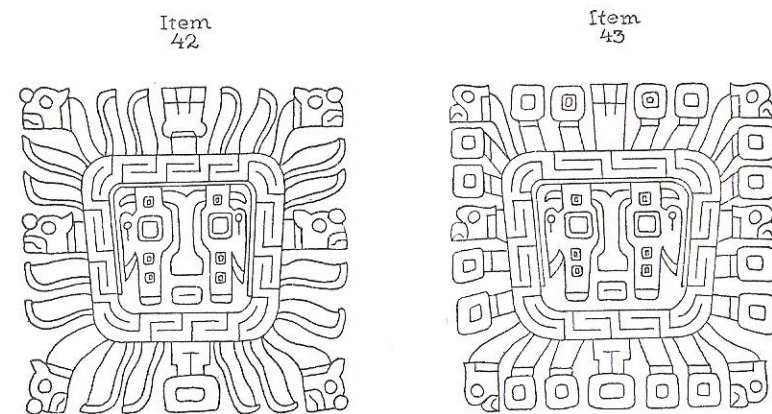


DIAGRAM 16. The Twelfth Heads
Also: References to sub-cycles 3 and 7.

at regular intervals of three days, corresponding to the sequence of the special symbols on the haloes of the Twelfths, the days between, when no special circumstances obtained, being symbolized by disks. It was assumed, naturally, that this was the reason for, and the origin of, the three-day sequence of special symbols and the indication of 'blank' days by disks. When we examine the sub-cycles of the Idol, however, we find that there is no similar occurrence of such special events at three-day intervals. Yet the Idol Twelfth displays the same sequence of special symbols as the Calendar Twelfths. This is rather surprising. It shows that the division of the Twelfth halo in this particular way was due to other reasons than those which were found to be valid for the Calendar cycle.

As there is no three-day cycle of events in the Idol eclipse cycle, it may be surmised that the Twelfth was divided possibly as a matter of convenience, as we divide our month into four weeks. And it is possible that in making such a subdivision regard was given to other aspects of the year. Now, the division of the Twelfth of 24 days into eight periods of three days each corresponds to the three eclipse cycles of eight sub-cycles in a period of 24 Twelfths. Also, in 12 Twelfths there are $12 \times 16 = 192$ 'disk' days, which is also the number of days in one eclipse cycle. It is possible that the division of the 24-day Twelfth arose from this correspondence in numbers, in order that the Twelfth might repeat the peculiar circumstances of the year. If so, this reason had lost its validity by the time of the Calendar, but its result, that is, the general form of the Twelfth halo, was adopted by the devisers of the Calendar as eminently suitable, with a change of certain symbols (e.g., from condor to toxodon), to the eclipse cycle of the Calendar year.

It is noteworthy that the 19 ft. idol found by Courty in 1903 near the railway line east of Tiahuanaco Station, called by Posnansky 'Kochamama', and by Bennett the 'Middle Water God', which appears to be of an even earlier date than the Great Idol so far as its inscriptions are concerned, shows a halo of 16 symbols without disks. Its eclipse cycle is not known.¹ This shows, however, that the three-day division of the halo symbols, with disks occupying two days in three, was not always in use.

In Item 42 the disks of Item 43 are replaced by symbols the nature of which is obscure. They have been likened to wings, bows, leaves, swords, feathers, tongues, and flames.

Now, in Item 43, the condors symbolize the Sun every three days. The disk is a satellitic symbol and thus symbolizes the Satellite in the two 'Satellite days' between the 'Sun days'. Conversely, on Item 42, the puma heads symbolize the Satellite every three days, so that, logically, the obscure symbol should have some reference to the Sun. It should represent two 'Sun days' between the 'Satellite days'. A solar symbol is thus indicated. The solar symbol *par excellence*, the condor head, however, would not be appropriate as it is used on Item 43 to symbolize the special days. Hence another symbol had to be employed to represent the Sun. Some particular attribute of the condor might,

¹ The eclipse cycle on which the symbology of 'Kochamama' was based has now been ascertained. It consisted of 257 lunations in 192 days. At that time the year consisted of 284 days with 380 lunations. We hope to publish the results of our inquiry into the symbology of this Idol in a further work.

however, be expected to be chosen for this purpose and of the various things to which the symbol in question has been likened the most appropriate is a Wing (i.e., of a condor). And, indeed, when this symbol is compared with the upper part of the Wings of the Winged Figures there is a distinct resemblance between them.

VIII. THE ALTERNATORS

Encircling the faces of the Main Figure, the two Twelfth Heads, and the lower part of the Lower Symbolism on the front of the Idol, are alternator bands containing varying numbers of alternators. The Main Figure band consists of 16, that of the Twelfth Head to the left, Item 42, consists of 13, and that of the one to the right, Item 43, consists of 12. The alternator band of the lower part of the Lower Symbolism on the front of the Idol, Item 65, also consists of 12. (See Diagrams 11, 16, 35, and 17.)

From the Calendar we know that these alternator bands indicate the opposing directions of movement of the Sun and the Satellite, the former rising in the east and setting in the west, the latter rising in the west and setting in the east. The 'two-way' aspect of the alternators appositely indicates both directions of movement.

The alternator bands thus represent the ecliptic, or a narrow zodiacal belt.

On closer scrutiny of the alternator bands another peculiarity becomes apparent. In the case of the Twelfth Head, Item 43, and the Lower Symbolism on the front, Item 65, the direction of movement of the signpost-like alternator elements is opposite to that of the Twelfth Head, Item 42, and of the Main Figure. The alternators of Item 43 and Item 65 show the 'Calendar type', while the other two bands are of the 'Puma Punku type'.

The reason for the difference of direction would appear to be due to an intention to stress the different purposes of the various symbolisms. On the Calendar it appeared that the inner line of 'signposts' referred to the east-west movement of the Sun, which obviously also applies to Item 43 and Item 65 which, as is stressed by their condor symbolisms, relate primarily to the Sun. Item 42, on the other hand, is shown by its puma symbolism to relate to the Satellite; hence, conversely, the inner line of 'signposts' has been made to point in the opposite direction to indicate the west-east movement of the Satellite. This view is supported by the Main Figure, whose alternators have the same direction of

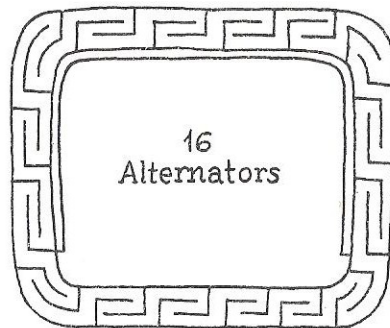
(Item 42)



(Item 43)



(Item 58)



(Item 65)



DIAGRAM 17. The Alternators

THE PEDESTALS

movement as those of Item 42. The symbols on the halo of the Main Figure are related to the lunations of the Satellite, hence it is appropriate that the alternators should also indicate a west to east movement as in the case of Item 42.

On the Calendar, the number of alternators has a definite relationship to the passages of the Satellite and serves to show their continuity. No such relationship, in regard to numbers, between passages and alternators, can be seen in respect of the Idol alternators. The reason for the number of alternators on each symbolism, if they have in fact any special significance in that respect, still remains obscure.

IX. THE PEDESTALS

The Main Figure stands on a two-step pedestal with puma end-symbols and, as this Figure represents both the equinoctial Twelfths in a year, its pedestal may be counted twice. Item 42 is raised on a two-step pedestal, also with puma end-symbols, while Item 43 is over a two-stepped pedestal with condor end-symbols. Both these pedestals when considered in respect of the year must be counted four times each. (See Section X.) The solstitial Twelfths have no pedestals (Items 57 and 60). There are thus, in effect, ten pedestals to be considered in relation to one year. Six of them have puma and four have condor end-symbols.

At the side of each of the two upper pedestals, that is, Items 47 and 48, are two signs, a double-knot and a continuant sign (Items 45, 46; 49, 50). The pedestal of the Main Figure has no such signs connected with it.

Within each of the two upper pedestals is a round disk with arms stretching out on either side, with extensions above and below the disks. The pedestal of the Main Figure has a somewhat similar symbol within it, consisting of an oval with two arms, but without any further extensions.

From the analogous symbolism on the Calendar we know that the pedestals symbolize the Earth and that their steps and signs are related to the Sun's amplitude. The end-symbols of the Calendar pedestals are related to horizon eclipses.

In considering the pedestals it is best to set them out as on the Calendar, as has been done in Diagram 18. From considerations discussed in Section IV it has been established that the equinoxes must fall in the middle of the First and Seventh Twelfths, hence in this

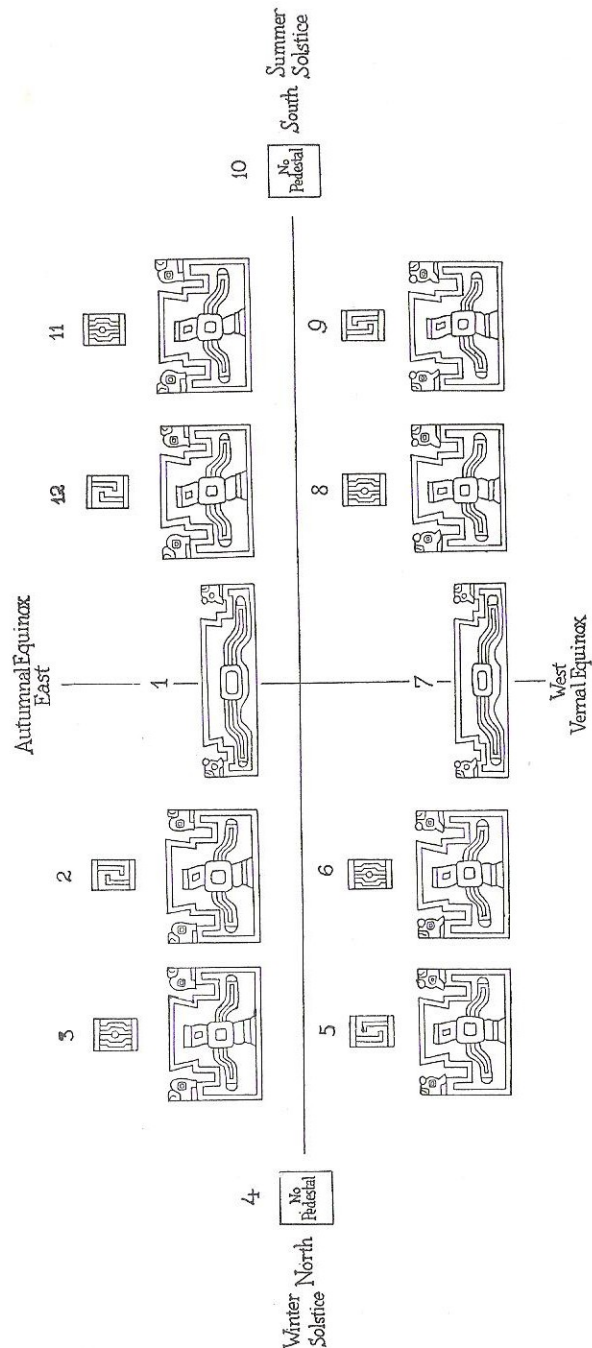


DIAGRAM 18. The Pedestals

THE PEDESTALS

Diagram the pedestals of those Twelfths are shown as extending on either side of the equinoctial line.

In a year such as that on Diagram 18 the Sun's amplitude is the same for Twelfths which are the same distance from the equinoxes on either side. Thus, the Third and Eleventh, the Second and Twelfth, the Fifth and Ninth, and the Sixth and Eighth, correspond in that respect. The amount of amplitude is greatest in the equinoctial Twelfths, slightly less in the Twelfths on either side of the equinoctial Twelfths, and considerably less in the remaining Twelfths on either side. In the solstitial Twelfths the Sun is practically at a standstill and the amount of amplitude in the Fourth and Tenth Twelfths is negligible, hence those Twelfths have no pedestals.

It should be noted that the correspondence in amplitude is on *either* side of the equinoctial line, which is the pivot or balance of the year. Although the amount of amplitude in Twelfths which are the same distance from the equinoxes on the *same* side shows little difference, such Twelfths are not to be regarded as corresponding. This is made clear by the signs, which are shown above the pedestals in Diagram 18. For example, the Third and Eleventh Twelfths each have a double-knot sign, thus showing that they have equal amplitudes. But although the Third and Fifth Twelfths have amplitudes which are nearly equal, the continuant sign of the Fifth shows that in this matter that Twelfth is not to be associated with the Third Twelfth. Similarly with the other pairs. These correspondences may be seen from the Table on page 98 which shows the amplitude in each Twelfth, the obliquity being taken as 18° and the latitude as 10° S. The figures are sufficiently accurate to illustrate the association between the pedestals, the signs, and the amplitude.

Let us, however, examine this matter of the signs a little further.

It is apparent that the continuant sign (C) is to be used alternately with the double-knot sign (DK). If this were not so we could have the following arrangement of the signs:

3	2	EQ	12	11
C	DK	-	DK	C
C	DK	-	DK	C
5	6		8	9

Under this arrangement comparable amplitudes are indicated both on the opposite sides and on the same sides of the equinoctial line. But

Sign	Twelfth	Amplitude	Amplitude	Twelfth	Sign
-	1st (13-24)	9° $4\frac{1}{2}^{\circ}$ $4\frac{1}{2}^{\circ}$		1st (1-12)	-
	2nd	8°	8°	12th	
	3rd	5°	5°	11th	
-	4th (1-14) 4th (15-24)	$\frac{3}{4}^{\circ}$ $\frac{1}{2}^{\circ}$	$\frac{3}{4}^{\circ}$ $\frac{1}{2}^{\circ}$	10th (11-24) 10th (1-10)	-
	5th	$4\frac{1}{4}^{\circ}$	$4\frac{1}{4}^{\circ}$	9th	
	6th	$8\frac{1}{4}^{\circ}$	$8\frac{1}{4}^{\circ}$	8th	
-	7th (1-12)	$9\frac{1}{2}^{\circ}$ $4\frac{3}{4}^{\circ}$ $4\frac{3}{4}^{\circ}$		7th (13-24)	-

if this were intended the *continuant* sign becomes meaningless, as any other sign, say a single or a treble knot, could have been used instead.

As the continuant and double-knot signs must alternate in each of the two groups on either side of the equinoctial line, the following arrangement of the signs is possible:

3	2	EQ	12	11
C	DK	-	C	DK
DK	C	-	DK	C
5	6		8	9
		98		

Although in this arrangement the signs alternate in each group there is no indication by the signs of comparable amplitudes either on opposite sides or on the same sides of the equinoctial line.

The only arrangements of the signs under which they alternate and at the same time indicate comparable amplitudes are as follows:

3	2	EQ	12	11
C	DK	-	DK	C
DK	C	-	C	DK
5	6		8	9

or

3	2	EQ	12	11
DK	C	-	C	DK
C	DK	-	DK	C
5	6		8	9

In both these cases the indication of comparable amplitudes is on opposite sides of the equinoctial line only. Either arrangement effectively prevents any such association between Twelfths on the *same* side of that line. In Diagram 18 (and on the Table on p. 98) we have adopted the second arrangement, as it is that which is employed on the Calendar.

It will thus be seen that the signs definitely indicate that the Twelfths which have comparable amplitudes are on opposite sides of the equinoctial line and prohibit any such association between Twelfths on the same side of that line. Our assignment of the signs is thus proved as correct, and as intended by the devisers of the Idol.

The equinoctial Twelfths are regarded differently from the other Twelfths. Being astride the equinoctial line the matter of indicating comparable amplitudes on either side of that line does not arise, each Twelfth being regarded as a whole, not as divided into two parts. Hence, in respect of the equinoctial Twelfths, there was no necessity for any indication by means of signs so far as comparable amplitudes were concerned. It may, however, be objected that on the Calendar the equinoctial Twelfths were given signs, and if such were necessary there why should they not be necessary also in the case of the Idol? The reason is that on the Calendar the two equinoctial Twelfths are shown separately. The double-knot signs of those Twelfths were necessary in order to show that both were related in respect of the general purpose of the pedestals, not as indicating comparable amplitudes, but as indicating the equinoctial 'pivot' or 'balance' to which the signs of the other Twelfths were to be referred. In the case of the Idol, however, the Main Figure represents *both* the equinoctial Twelfths, so that a similar indication by signs of such an association, as on the Calendar, was not required.

Regarding the assignment of the condor pedestals to the Second,

Third, Eleventh, and Twelfth Twelfths: this is the arrangement on the Calendar, where the pedestals are individually related to their Twelfths, and there can be little doubt that a similar arrangement applies also to the Idol pedestals and Twelfths. An alternative arrangement would assign the condor pedestals to the Second, Third, Fifth and Sixth Twelfths, and the puma pedestals (apart from the equinoctial pedestals) to the Eighth, Ninth, Eleventh and Twelfth Twelfths, or vice versa. As both the equinoctial Twelfths have puma pedestals this would result in an 'unbalanced' design, which is hardly likely to be intended, but is, in any case, prohibited by consideration of the pedestal-end symbols.

As the Winter Solstice is related to the North and the Summer Solstice to the South, the Autumnal Equinox must be related to the East and the Vernal Equinox to the West. That is, there is a relationship between the Seasons and the points of the compass.

On the condor pedestals the condor heads on the pedestal-ends are depicted in the ascending position, consequently the four (in effect) such pedestals relate to the eastern horizon, whence the Sun rises. Similarly, the puma pedestals relate to the western horizon, whence the Satellite rises. Thus, the four condor pedestals must be assigned to the four Twelfths on the Autumnal Equinox, or eastern, side of the solstitial line.

The First Twelfth is an exception to the above. Although it is on the 'eastern' side of the solstitial line, it has a puma pedestal. In this respect it conforms to the Calendar First Twelfth. Thus, both the equinoctial Twelfths, the First and Seventh, have puma pedestals, that is, both are related to the 'western' horizon. The reason is that the Main Figure of the Idol (which represents both the equinoctial Twelfths) like the Main Figure (or First Twelfth) of the Calendar, is identified with the Satellite rather than with the Sun, and is to be regarded as facing the horizon whence the Satellite ascends—the western. It would appear from this that, as the Main Figure is on the *back* of the Idol, the Idol itself was placed facing the east.

From the position of the Idol when it was first unearthed Wendell Bennett also surmised that it may have faced east when it was yet standing upright. He published this opinion in 1934; correspondence between Bellamy and Bennett concerning Tiahuanacan antiquities started only after this date.

We must now consider the symbols inside the pedestals. No such symbols are used in connection with the pedestals of the Calendar, hence no help in their interpretation is forthcoming from that monument.

On the other pedestals, that is, Items 47 and 48, there are parts pro-

jecting above and below the disks which are absent from the symbol in the equinoctial pedestal. Whatever these imply did not therefore apply to the equinoctial Twelfths. Their meaning is applicable only to the Twelfths which are north or south of the equinoxes. On the other hand, the arms on either side of the disks are similar in both the equinoctial and the other pedestals, and whatever meaning is attached to these arms therefore applies to all the pedestals, or to the respective Twelfths.

The arms suggest a 'stretching out' on either side from a central point, and may be regarded as indicating that the amplitude in each Twelfth extends throughout that Twelfth. This view is rather supported by the semi-circle at the end of each arm, which suggests a 'half', hence, that each arm represents half of a Twelfth.

The 'oval' as a symbol, in comparison with the 'round' disk, also conveys the idea of 'extension'. If our suggestion is correct that the arms indicate the 'extension' of the amplitude throughout the Twelfths, the indication of 'extension' by the oval must have another, different, connotation, and it is possible that it is intended to convey the meaning that in the equinoctial Twelfths the amplitude 'extends' on either side of the east-west line, that is, to both north and south. In contrast, the round disks of the other pedestals would indicate that the amplitude of the relative Twelfths also extended to north and south, but only in relation to the Twelfths, not in relation to the east-west line. This view is perhaps supported by the fact that the round disks of the other pedestals are firmly 'anchored' to the bases of the pedestals, whereas in the case of the equinoctial pedestal the oval 'floats' inside the pedestal, in a cradle formed by two peculiar protuberances, on either side below the oval, that is, to the north and south of it.

Regarding the square projection above the round disks of the other pedestals, a feature which is absent from the oval of the equinoctial pedestal: the signs, continuants and double-knots, have been placed outside each pedestal, since one sign only applies to one pedestal, whereas there are, in effect, four pedestals and four signs to be considered, two continuants and two double-knots. Under the arrangement adopted on the Idol the signs could not be placed inside the pedestals as on the Calendar, since had that been done it would have indicated that the two different signs applied to one pedestal. The signs were accordingly placed outside the pedestals, but within the pedestals were placed the projections referred to, which have the appearance of 'frames' designed for the accommodation of the appropriate sign.

On the Calendar the symbols at the ends of the pedestals are related

to certain horizon eclipses; it may be inferred that the end-symbols of the Idol pedestals are also related to horizon eclipses.

In each sub-cycle there are certain 'horizon eclipses'; these are listed in Chapter 7, Section II, where the Tables give all such eclipses taking place within 1 T/hour of the horizon. It will be seen that there is, generally, an alternation of two eclipses on the eastern horizon and two on the western horizon. This applies to both solar and satellitic eclipses. The condors of the pedestal ends of the Third, Second, Twelfth and Eleventh Twelfths may therefore be associated with the eclipses, either solar or satellitic, taking place on the eastern horizon, and the pumas of the pedestal ends of the First, Fifth, Sixth, Seventh, Eighth, and Ninth Twelfths with those taking place on the western horizon. It would not appear possible to identify the eclipses more particularly, as each Twelfth, in the course of two years, is related to three different sub-cycles.

A difference between the Idol and Calendar pedestals is that whereas on the latter the equinoctial Twelfths are raised on three-step pedestals, on the former they are on two-step pedestals. The pedestals, it will have been noted, do not indicate the *amount* of the amplitude in the respective Twelfths; all they do, with the signs, is to indicate the Twelfths which have comparable amplitudes. There was no necessity, therefore, to differentiate between the number of steps on the pedestals so far as the amplitude was concerned. Besides, the pedestals, taken together, have a relationship to the obliquity, on which the amplitude depends. By limiting all the pedestals to two steps each, the total number of steps is 20, which links the amplitude as a whole to the obliquity, as was explained in Chapter 5.

X. THE SYMBOLISMS CONSIDERED COLLECTIVELY

From the detailed analysis, in the preceding Sections, of the constituent parts of the symbolisms on the back of the Idol it is apparent that this group of symbolisms was designed to represent various aspects of the year of the Idol. Let us now consider this group as a whole, and also the three sub-groups into which it may be divided.

From the grouping of the symbolisms it would appear that they are to be divided into three sub-groups, viz.,

Sub-group 1: Items 41, 42, 45, 46, 47.

Sub-group 2: Items 43, 44, 48, 49, 50.

Sub-group 3: Items 51, 52, 57, 58, 59, 60, 66, 67.

These three sub-groups are well defined (*see* Diagram 10) and it is not likely that the subdivision is without a definite purpose.

In our consideration of the solstitial Twelfths in Section VI it was shown that the 'Twelfth Symbolisms', Items 66 and 67, were related to two pairs of sub-cycles, i.e., the 'fish' pairs, 1, 2 and 5, 6. It is hardly likely that only the 'fish' pairs of sub-cycles would be symbolized, hence it is possible that 'Twelfth Symbolisms' Items 51 and 52 are intended to represent the 'condor' pairs of sub-cycles 3, 4 and 7, 8. Such a purpose would explain the exceptionally large size of these 'Twelfth Symbolisms' and their difference from the normal. The large size draws attention to them. The difference from the normal takes the form of two large condor heads looking sideways, instead of four upward-looking condor heads at the ends of long brackets. These two condor heads looking in opposite directions may be related to the solar eclipses at high altitudes which take place at the end of sub-cycle 3 and at the beginning of sub-cycle 4, and at the end of sub-cycle 7 and the beginning of sub-cycle 8, that is, they take place towards the middle of each pair, and the condors representing them look 'outwards'. In respect of Items 66 and 67, the fish 'Twelfth Symbolisms', the continuant signs indicate that the second sub-cycle 'follows on' after the first, or that the two sub-cycles of each pair are consecutive, i.e., that the two separate sub-cycles of each pair are to be regarded as one unit.

On this reading of the 'Twelfth Symbolisms', sub-group 3 may be regarded as representing the eclipse cycle, of which there are three in the two-year cycle of Twelfths. Sub-groups 1 and 2 may therefore be regarded as representing the other two eclipse cycles, since each Twelfth Head (Items 42 and 43) has above it a group of eight condor heads which look downwards on it.

On these considerations also the group of symbolisms on the back of the Idol, taken as a whole, represent the 24 Twelfths of the two-year cycle of Twelfths, sub-group 3 representing the four equinoctial and the four solstitial Twelfths, and sub-groups 1 and 2 the remaining sixteen Twelfths.

Also, sub-group 3, taking the symbolisms singly, represents the two equinoctial and the two solstitial Twelfths of one year. And if we regard the Twelfths Heads of sub-groups 1 and 2 as relating to the same Twelfth, as shown in Section VII, then the 16 condor heads indicate eight Twelfths, so that the twelve Twelfths of one year are also symbolized.

Chapter 7

THE WINGED FIGURES

I. GENERAL REMARKS

The most remarkable sculptures on the Calendar of the Gateway, from every point of view, are probably the thirty Winged Figures. Also on the Idol there are twenty-six Winged Figures; two of them are not exactly 'winged', but as they are to be found among the others they are, for convenience sake, also referred to by the same collective name.

On the analogy of the Winged Figures of the Calendar it may be safely assumed that the Winged Figures of the Idol have a similar function and give a representation of the eclipses throughout the year of the Idol.

The eclipse cycle of the Calendar consists of an almost exact number of lunations in 24 days, hence one such cycle is representative of all the cycles throughout the year. Because of this, one group of three Winged Figures is sufficient to represent all the eclipses of a year, the variations due to the visibility or invisibility of certain eclipses in the course of the year being indicated by certain symbols.

A scheme of representing the eclipse cycles by Winged Figures which is as neat, compact and relatively simple as that of the Calendar is not possible in the case of the Idol, where the eclipse cycle covers a period of 192 days, or 8 Twelfths, resulting in 8 sub-cycles of 24 days each, all of which are different. A much more elaborate representation of the eclipses of the Idol cycle compared with the Calendar is inevitable, and it is for that reason that the number of Winged Figures is greater than on the Calendar, and the symbols these Figures carry are more complicated.

Whilst the scheme of the Calendar Winged Figures does not apply to the Idol, the Calendar scheme does provide a number of clues which, by analogy, enable us to attempt a solution of the Idol Winged Figures,

GENERAL REMARKS

apart from a general knowledge of the Tiahuanacan methods and outlook in this matter.

(1) The general symbolism for the eclipses is:

Condor = Solar eclipses above the horizon
Fish = Satellitic eclipses above the horizon

Fish = Solar eclipses below the horizon
Condor = Satellitic eclipses below the horizon.

Where this general rule is departed from and other symbols are employed, it is to avoid ambiguity or to stress some particular matter.

(2) Shells may symbolize either solar or satellitic eclipses according to the nature of the other symbols, fish or condor, with which they are associated, but they always indicate eclipses taking place at high altitudes.

(3) Plumes indicate eclipses near the horizon.

(4) Condor heads depicted hanging down from the back of Crowns indicate eclipses (solar above horizon) which take place on or near the horizon and which may change their position in relation to the horizon as the year progresses. In the latter case, when an eclipse which when above the horizon is symbolized by such a condor goes below the horizon, the condor 'drops off' the Crown and is not counted.

(5) The symbols and signs on the body of a Winged Figure serve as a guide to the period covered by that particular Figure, though, it should be understood, they do not delimit that period. For example, three fishes and a continuant sign indicate three adjacent solar eclipses (below horizon), one in each of three passages, whereas three fishes and a double-knot sign indicate two solar eclipses (below horizon) in one passage and one solar eclipse in an adjacent passage. As this is perhaps the chief clue to the identification of the periods to which the various Winged Figures are related, Diagram 19 is given to show clearly the relationship between the body symbols and the eclipses they stand for.

(6) Only the symbols of the Crown, Wing, and Tail of a Winged Figure are used in the actual indication of the eclipses in the periods to which they relate. The symbols of the Staff, Body, Face, Arm and Leg, although they relate to certain eclipses, do so only in the role of determinators of certain peculiarities of the relative periods.

(7) Symbols within the Wings may 'fly off' as may be necessary

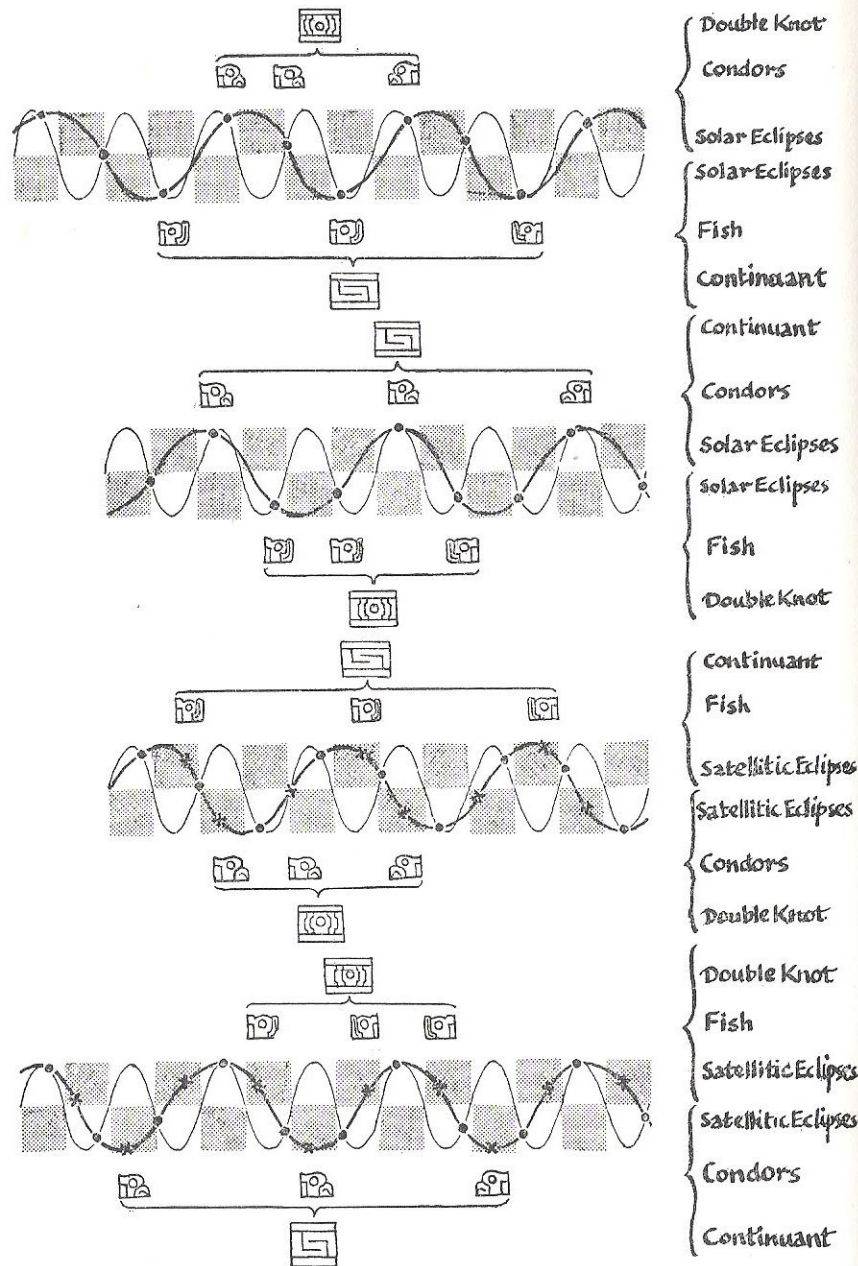


DIAGRAM 19. The Body Symbols of the Winged Figures. Their relationship to the eclipses according to the sign—Continuant or Double Knot—associated with them.

according to whether the number of eclipses at any particular reading necessitate such a symbol. (See also (4) above.)

The Winged Figures of the Idol are contained in several clearly defined groups which vary in the number of Figures in each group, in the nature of the Figures, and in the number and nature of the symbols they carry. These differences suggest a difference in the periods, or sub-cycles, represented by each group and a difference also in the method of representation of the eclipses of each sub-cycle. The groups are:

(a) Two similar groups of three Figures each, to the left and right of the Main Figure, above the Meander. Each group consists of two human and one animal, or sub-human, Figure.

(b) Two similar groups of five Figures each, on the arms and chest of the Idol. Each of these groups consists of two human and three condor Figures.

(c) One group of (probably) ten Figures, on the Turban of the Idol, which may be divided into two sub-groups of five each. This group, unfortunately, is damaged and only six Figures are reasonably intact, while one Figure is partly, and three are wholly, obliterated. That there were originally ten Figures is inferred from the available space on the Turban. The Winged Figures of the Turban include human, condor, and animal representations.

In the following Sections of this Chapter the various parts of the Winged Figures will be referred to as follows:

Crown: Symbols on the Crown, including the symbol behind the head which will be designated by the letters BH.

Wing: Symbols attached to the Wing, above the Tail, and the disk within the Wing. Symbols projecting from the upper part of the Wing will be designated by the reference PW.

Tail: The symbol outside the Body at the end of the two or three elements between Face and Tail.

Arm: The disk hanging from the Arm.

Body: Symbols within the Body, or projecting into the Body-space from the Arms and Legs.

Leg: Symbol outside the Body, attached to the front or rear Leg by certain Figures.

Face: Symbols within the Face.

Staff: Symbols on, or attached to, the Staff.

II. THE ECLIPSE CYCLE IN RELATION TO THE ACTUAL YEAR

So far, in our interpretations, we have considered the Idol symbology in relation to the ideal (equinoctial) eclipse cycle as shown in Diagram 6. It is necessary, however, when considering the Winged Figures, to relate the symbols of these Figures to the eclipse cycle as it actually appears in relation to the Earth throughout its threefold repetition in a period of two years. Owing to the obliquity of the ecliptic the declination of the Sun varies between the extremes of the tropics, and this has an effect on the altitude at which eclipses take place. For example, solar eclipse 1 of sub-cycle 1 takes place on the 1st of the First Twelfth when the Sun's declination is $4\frac{1}{2}^{\circ}$ S. This particular eclipse recurs on the 1st of the Ninth Twelfth when the Sun's declination is 13° S, and again on the 1st of the Fifth Twelfth when the declination is $17\frac{1}{2}^{\circ}$ N. There is thus a wide variation in declination in respect of all eclipses in the eclipse cycle, causing a correspondingly wide variation in the altitudes at which the eclipses take place, and, of more consequence in connection with the Winged Figures, causing certain eclipses to take place on different sides of the horizon. It is with this latter aspect of the matter that we are particularly concerned.

It is apparent that the identification of what we may term 'horizon eclipses', that is, eclipses taking place on or near the horizon, though not necessarily changing their positions in relation to the horizon, depends on where we begin the eclipse cycle. In Diagram 6 the ideal eclipse cycle begins with a solar eclipse on the horizon at 0.00 T/hours on the 1st day of sub-cycle 1, and the horizon eclipses (solar) in sub-cycle 1 are Nos. 1, 15 and 29 on the 1st, 10th and 19th days respectively. But if the eclipse cycle began with this eclipse taking place at, say, 1.00 T/hours, the horizon eclipses would be No. 12 on the 8th day and No. 26 on the 17th day. This change of date on which the horizon eclipses take place would be reflected right through the eclipse cycle.

Our problem is therefore to determine the position (or time), within as small as possible a margin of error, of the initial eclipse of the eclipse cycle.

We have seen, in Chapter 3, that the eight sub-cycles may be grouped in pairs, each pair beginning and ending with a day on which a horizon eclipse takes place. But if the initial eclipse of the eclipse cycle took place at even so small a difference as one T/hour, as mentioned above, this grouping into pairs by horizon eclipses would no longer obtain.

This may be readily seen from the Table of Times of Eclipses in Chapter 2. If one T/hour is added to the times in this Table a completely new set of horizon eclipses results and none of the first eclipses of each sub-cycle would be a horizon eclipse.

We may be reasonably certain, therefore, that the initial eclipse of the eclipse cycle started with an eclipse on or very near the horizon.

As was pointed out in Chapter 6, Section IV, it is a matter of no real importance whether we call the Twelfth of the Autumnal Equinox the First or Seventh, and for convenience we have taken the First Twelfth to be that of the Autumnal Equinox and the Seventh to be that of the Vernal Equinox. The point now arises: what is the relationship between the Twelfths and the sub-cycles of the eclipse cycle? On the answer to this question depends the identification of the eclipses which change their position in relation to the horizon. For example, if the First Twelfth (which we have agreed to refer to as the Twelfth of the Autumnal Equinox) is related to sub-cycle 1 (as numbered in Diagram 6) the following solar eclipses change their positions in relation to the horizon in the two-year period of three eclipse cycles:

Sub-cycle 1	Nos. 1, 15, 29
Sub-cycle 2	No. 21
Sub-cycle 7	Nos. 1, 29
Sub-cycle 8	Nos. 8, 22

But if the First Twelfth is related to sub-cycle 7 then the eclipses which change their positions in relation to the horizon are as follows:

Sub-cycle 3	No. 17
Sub-cycle 4	No. 23
Sub-cycle 5	Nos. 2, 16, 30
Sub-cycle 6	No. 9
Sub-cycle 7	No. 15

The answer to this problem depends on the relationship, between Twelfths and sub-cycles, which best fits the Winged Figures. If, by relating the First Twelfth (Autumnal Equinox) to sub-cycle 1 a better correspondence with the symbols of the Winged Figures is obtained than by relating it to, say, sub-cycle 7, we may be reasonably certain that the former relationship is the correct one.

Such a procedure should not be regarded as trying to make the facts fit the theory. In the absence of any direct indication of the relationship

between Twelfths and sub-cycles it is only by trial and error that the correct relationship can be found.

At present only a qualified answer to this problem can be given. By relating the First Twelfth to sub-cycle 1 a reasonably good solution of the Winged Figures of the Body can be obtained. But our solution of the Winged Figures of the Arms and Chest is only a tentative one, whilst the Winged Figures of the Turban remain unsolved: hence these groups of Winged Figures cannot be put forward in support of the relationship mentioned.

The following Tables of Horizon Eclipses and of High Altitude Eclipses, with their altitudes, are based on a year of 288 days, obliquity 18° , latitude 10° S, the Autumnal Equinox being on the 13th day of the First Twelfth which is related to sub-cycle 1.

It should be understood, however, that our object in giving these Tables is to illustrate how the symbols of the Winged Figures can be associated with the eclipse cycle as deduced from the considerations given in previous Chapters. They should not be regarded as absolutely precise and accurate data, since, in addition to the matters already mentioned, there are still further doubtful points which cannot be resolved with our present knowledge of the astronomical conditions appertaining at the time or in respect of how the Tiahuanacans regarded such conditions in relation to the Earth. For instance, the orbit of the Satellite is not known precisely, hence it is assumed that it was circular and coincided with the ecliptic, though it is probable that it had a certain degree of eccentricity and may have had also an inclination to the ecliptic. However, it is not unlikely that, considering the great apparent size of the Satellite compared with that of the Sun, eclipses occurred at every conjunction and opposition of these bodies. All such eclipses would be visible from some parts of the Earth, but, in view of the obliquity of the ecliptic and the situation of Tiahuanaco in latitude 10° S, they would not all be visible at Tiahuanaco.

Take, for example, sub-cycle 7. In the first year of the two-year cycle, sub-cycle 7 would fall in the Seventh Twelfth (Vernal Equinox). At this point in the Earth's orbit the relative positions of the Earth and the Satellite would result in a solar eclipse at midday being visible at Tiahuanaco. When, however, sub-cycle 7 next recurred, on the Third Twelfth of the second year of the two-year cycle, the relative positions of the Earth and the Satellite would be such that a solar eclipse at midday would not be visible at Tiahuanaco. But a solar eclipse at midday would again be visible when sub-cycle 7 again

recurred on the Eleventh Twelfth of the second year of the two-year cycle. However, when no eclipse was visible at Tiahuanaco there would be a close conjunction of Sun and Satellite and it is likely that, so far as the symbolism of the Winged Figures is concerned, no distinction was made between such close conjunctions and actual eclipses.

Another point of difficulty is that, in respect of horizon eclipses, we cannot say how such were regarded by the devisers of the symbology so far as their visibility or invisibility in relation to the horizon was concerned. Where an eclipse took place completely below the horizon there can, of course, be no doubt that it was regarded as invisible, but doubt must remain in respect of eclipses which, taking place on the horizon, were only partly visible. Were such regarded as visible, and if so, to what extent had such an eclipse to be above the horizon to be so regarded, or to what extent had it to be below the horizon to be regarded as invisible? In view of these doubts we have assumed in the Tables that if the centre of the Sun's disk was on or above the horizon the eclipse was regarded as visible, and if the centre of the Sun's disk was below the horizon the eclipse was regarded as invisible.

It will be seen from the Tables of Horizon Eclipses that the eclipses which change their position are:

<i>Solar</i>		<i>Satellitic</i>	
Sub-cycle 1	Nos. 1, 15, 29	Sub-cycle 5	Nos. 1, 15, 29
Sub-cycle 2	No. 21	Sub-cycle 6	Nos. 7, 21
Sub-cycle 7	Nos. 1, 29	Sub-cycle 3	Nos. 15, 29
Sub-cycle 8	Nos. 8, 22	Sub-cycle 4	Nos. 8, 22

The following points may be noticed as having a bearing, possibly, on the solution of the Winged Figures:

- In any sub-cycle, solars only, or satellitics only, change position;
- Changes occur in all eight sub-cycles, in four the change being of solar, and in four of satellitic eclipses;
- Generally, the eclipses which change position are the 'corresponding' eclipses of the 'corresponding' sub-cycles. (See Chapter 3 re the 'Correspondence Principle'.)

THE WINGED FIGURES

HORIZON ECLIPSES

1. Solar

Sub-Cycle	Eclipse No.	Horizon	Time T/hrs	Degrees	Date	Declination	Altitude	Date	Declination	Altitude	Date	Declination	Altitude
1	15	E	0:000	0:0	1/1	4 $\frac{1}{2}$ S	+ 1	1/9	13 S	+ 2	1/5	17 $\frac{1}{2}$ N	- 3
	15	W	14:946	179:4	10/1	1 S	+ 1	10/9	15 $\frac{1}{2}$ S	+ 3	10/5	16 $\frac{1}{2}$ N	- 2
	29	E	29:893	358:7	20/1	2 $\frac{1}{2}$ N	- 2	20/9	17 S	+ 1 $\frac{1}{2}$	20/5	14 $\frac{1}{2}$ N	- 4
	32	E	0:953	11:4	22/1	3 $\frac{1}{2}$ N	+ 10 $\frac{1}{2}$	22/9	17 $\frac{1}{2}$ S	+ 14	22/5	13 $\frac{1}{2}$ N	+ 8 $\frac{1}{2}$
2	7	W	14:840	178:1	5/2	6 N	+ 1	5/10	17 $\frac{3}{4}$ S	+ 4	5/6	11 $\frac{1}{2}$ N	0
	10	W	15:900	190:8	7/2	6 $\frac{1}{2}$ N	- 12	7/10	18 S	- 7	7/6	11 N	- 12
	21	E	29:787	357:4	15/2	9 $\frac{1}{2}$ N	- 4	15/10	18 S	+ $\frac{1}{2}$	15/6	8 $\frac{1}{2}$ N	- 4
	24	E	0:847	10:2	17/2	10 N	+ 8	17/10	17 $\frac{3}{4}$ S	+ 13	17/6	7 $\frac{1}{2}$ N	+ 9
	35	W	14:734	176:8	24/2	12 $\frac{1}{2}$ N	+ 1	24/10	17 $\frac{1}{4}$ S	+ 6	24/6	5 N	+ 3
3	3	W	15:794	189:5	2/3	12 $\frac{1}{2}$ N	- 11 $\frac{1}{2}$	2/11	17 S	- 6	2/7	4 $\frac{1}{2}$ N	- 10
	14	E	29:681	356:2	10/3	14 $\frac{1}{2}$ N	- 6	10/11	15 $\frac{3}{4}$ S	- 1	10/7	1 $\frac{1}{2}$ N	- 4
	17	E	0:741	8:9	12/3	15 N	+ 6	12/11	15 $\frac{3}{4}$ S	+ 11	12/7	1 $\frac{1}{2}$ N	+ 9
	28	W	14:628	175:5	19/3	16 $\frac{1}{2}$ N	+ 1 $\frac{1}{2}$	19/11	13 $\frac{3}{4}$ S	+ 7	19/7	2 $\frac{1}{2}$ S	+ 5
	31	W	15:688	188:3	21/3	16 $\frac{1}{2}$ N	- 11	21/11	13 $\frac{1}{4}$ S	- 6	21/7	3 $\frac{1}{4}$ S	- 7 $\frac{1}{2}$
4	6	E	29:575	354:9	5/4	17 $\frac{1}{2}$ N	- 8	5/12	11 $\frac{1}{2}$ S	- 3	5/8	6 $\frac{1}{4}$ S	- 4
	9	E	0:635	7:6	7/4	17 $\frac{1}{2}$ N	+ 4	7/12	10 $\frac{1}{2}$ S	+ 9	7/8	7 S	+ 8 $\frac{1}{2}$
	20	W	14:522	174:3	14/4	18 N	+ 2	14/12	8 S	+ 7	14/8	9 $\frac{1}{4}$ S	+ 7
	23	W	15:582	187:0	16/4	18 N	- 10	16/12	7 $\frac{1}{2}$ S	- 5 $\frac{1}{2}$	16/8	10 $\frac{1}{2}$ S	- 5
	34	E	29:469	353:6	24/4	17 $\frac{1}{2}$ N	- 9	24/12	4 $\frac{3}{4}$ S	- 5 $\frac{1}{2}$	24/8	12 $\frac{3}{4}$ S	- 4
5	2	E	0:529	6:3	2/5	17 $\frac{1}{2}$ N	+ 3	2/1	4 S	+ 7	2/9	13 $\frac{1}{2}$ S	+ 8 $\frac{1}{2}$
	13	W	14:415	173:0	9/5	16 $\frac{1}{2}$ N	+ 4	9/1	1 $\frac{1}{4}$ S	+ 7	9/9	15 S	+ 9
	16	W	15:475	185:7	11/5	16 N	- 8	11/1	$\frac{1}{2}$ S	- 5 $\frac{1}{2}$	11/9	15 $\frac{1}{2}$ S	- 3
	27	E	29:362	352:3	19/5	14 $\frac{1}{2}$ N	- 10	19/1	2 $\frac{1}{4}$ N	- 7 $\frac{1}{2}$	19/9	16 $\frac{1}{2}$ S	- 4 $\frac{1}{2}$
	30	E	0:422	5:1	21/5	14 N	+ 2 $\frac{1}{2}$	21/1	3 N	+ 4 $\frac{1}{2}$	21/9	17 S	+ 7 $\frac{1}{2}$
6	6	W	14:309	171:7	4/6	12 N	+ 6	4/2	5 $\frac{1}{2}$ N	+ 7	4/10	17 $\frac{3}{4}$ S	+ 11
	9	W	15:369	184:4	6/6	11 $\frac{1}{2}$ N	- 6 $\frac{1}{2}$	6/2	6 $\frac{1}{2}$ N	- 6	6/10	18 S	- 1
	20	E	29:256	351:1	14/6	8 $\frac{1}{2}$ N	- 10 $\frac{1}{2}$	14/2	9 N	- 10 $\frac{1}{2}$	14/10	18 S	- 5 $\frac{1}{2}$
	23	E	0:316	3:8	16/6	8 N	+ 2 $\frac{1}{2}$	16/2	9 $\frac{1}{2}$ N	+ 2	16/10	18 S	+ 6
	34	W	14:203	170:4	23/6	5 $\frac{1}{4}$ N	+ 8	23/2	12 N	+ 7	23/10	17 $\frac{1}{4}$ S	+ 12
7	1	W	15:263	183:2	1/7	4 $\frac{1}{2}$ N	- 4	1/3	12 $\frac{1}{2}$ N	- 5 $\frac{1}{2}$	1/11	17 S	0
	12	E	29:150	349:8	9/7	1 $\frac{1}{2}$ N	- 10 $\frac{1}{2}$	9/3	14 $\frac{1}{2}$ N	- 12 $\frac{1}{2}$	9/11	16 S	- 7
	15	E	0:210	2:5	11/7	$\frac{1}{2}$ N	+ 2 $\frac{1}{2}$	11/3	14 $\frac{1}{2}$ N	0	11/11	15 $\frac{3}{4}$ S	+ 5
	26	W	14:097	169:2	18/7	2 $\frac{1}{2}$ S	+ 11	18/3	16 $\frac{1}{2}$ N	+ 7	18/11	14 S	+ 13
	29	W	15:157	181:9	20/7	3 S	- 1 $\frac{1}{2}$	20/3	16 $\frac{1}{2}$ N	- 5	20/11	13 $\frac{1}{2}$ S	+ $\frac{1}{2}$
8	5	E	29:044	348:5	4/8	6 S	- 10	4/4	17 $\frac{1}{2}$ N	- 14	4/12	11 $\frac{1}{2}$ S	- 9
	8	E	0:104	1:2	6/8	6 $\frac{1}{2}$ S	+ 2 $\frac{1}{2}$	6/4	17 $\frac{1}{2}$ N	- 2	6/12	10 $\frac{1}{2}$ S	+ 3
	22	W	15:051	180:6	15/8	10 S	+ 1	15/4	18 N	- 4	15/12	7 $\frac{1}{2}$ S	+ 1

x = Eclipses which change position. + = above horizon.
- = below horizon.

THE ECLIPSE CYCLE IN RELATION TO THE ACTUAL YEAR

HORIZON ECLIPSES

2. Satelitic

Sub-Cycle	Eclipse No.	Horizon	Time T/hrs	Degrees	Date	Declination	Altitude	Date	Declination	Altitude	Date	Declination	Altitude
1	2	W	0:529	186:3	2/1	4 N	- 7	2/9	13 $\frac{1}{2}$ N	- 8 $\frac{1}{2}$	2/5	17 $\frac{1}{2}$ S	- 3
	13	E	14:415	353:0	9/1	1 $\frac{1}{2}$ N	- 7	9/9	15 N	- 9	9/5	16 $\frac{1}{2}$ S	- 4
	16	E	15:475	5:7	11/1	$\frac{1}{2}$ N	+ 5 $\frac{1}{2}$	11/9	15 $\frac{1}{2}$ N	+ 3	11/5	16 S	+ 8
	27	W	29:362	172:3	19/1	2 $\frac{1}{2}$ S	+ 7 $\frac{1}{2}$	19/9	16 $\frac{1}{2}$ N	+ 4 $\frac{1}{2}$	19/5	14 $\frac{1}{2}$ S	+ 10
	30	W	0:422	185:1	21/1	3 S	- 4 $\frac{1}{2}$	21/9	17 N	- 7 $\frac{1}{2}$	21/5	14 S	- 2 $\frac{1}{2}$
2	6	E	14:309	351:7	4/2	5 $\frac{1}{2}$ S	- 7	4/10	17 $\frac{1}{2}$ N	- 11	4/6	12 S	- 6
	9	E	15:369	4:4	6/2	6 $\frac{1}{2}$ S	+ 6	6/10	18 N	+ 1	6/6	11 $\frac{1}{2}$ S	+ 6 $\frac{1}{2}$
	20	W	29:256	171:1	14/2	9 S	+ 10 $\frac{1}{2}$	14/10	18 N	+ 5 $\frac{1}{2}$	14/6	8 $\frac{1}{2}$ S	+ 10 $\frac{1}{2}$
	23	W	0:316	183:8	16/2	9 $\frac{1}{2}$ S	- 2	16/10	18 N	- 6	16/6	8 S	- 2 $\frac{1}{2}$
	34	E	14:203	350:4	23/2	12 S	- 7	23/10	17 $\frac{1}{2}$ N	- 12	23/6	5 $\frac{1}{2}$ S	- 8
3	1	E	15:263	3:2	1/3	12 $\frac{1}{2}$ S	+ 5 $\frac{1}{2}$	1/11	17 N	0	1/7	4 $\frac{1}{2}$ S	+ 4
	12	W	29:150	169:8	9/3	14 $\frac{1}{2}$ S	+ 12 $\frac{1}{2}$	9/11	16 N	+ 7	9/7	1 $\frac{1}{2}$ S	+ 10 $\frac{1}{2}$
	15	W	0:210	182:5	11/3	14 $\frac{1}{2}$ S	0	11/11	15 $\frac{1}{2}$ N	- 5	11/7	1 $\frac{1}{2}$ N	- 2 $\frac{1}{2}$
	26	E	14:097	349:2	18/3	16 $\frac{1}{2}$ S	- 7	18/11	14 N	- 13	18/7	2 $\frac{1}{2}$ N	- 11
	29	E	15:157	1:9	20/3	16 $\frac{1}{2}$ S	+ 5	20/11	13 $\frac{1}{2}$ N	- $\frac{1}{2}$	20/7	3 N	+ 1 $\frac{1}{2}$
4	5	W	29:044	168:5	4/4	17 $\frac{1}{2}$ S	+ 14	4/12	11 $\frac{1}{2}$ N	+ 9	4/8	6 N	+ 10
	8	W	0:104	181:2	6/4	17 $\frac{1}{2}$ S	+ 2	6/12	10 $\frac{1}{2}$ N	- 3	6/8	6 $\frac{1}{2}$ N	- 2 $\frac{1}{2}$
	22	E	15:051	0:6	15/4	18 S	+ 4	15/12	7 $\frac{1}{2}$ N	- 1	15/8	10 N	- 1
5	1	W	0:000	180:0	1/5	17 $\frac{1}{2}$ S	+ 3	1/1	4 $\frac{1}{2}$ N	- 1	1/9	13 N	- 2
	15	E	14:946	359:4	10/5	16 $\frac{1}{2}$ S	+ 2	10/1	1 N	- 1	10/9	15 $\frac{1}{2}$ N	- 3
	29	W	29:893	178:7	20/5	14 $\frac{1}{2}$ S	+ 4	20/1	2 $\frac{1}{2}$ S	+ 2	20/9	17 N	- 1 $\frac{1}{2}$
	32	W	0:953	191:4	22/5	13 $\frac{1}{2}$ S	- 8 $\frac{1}{2}$	22/1	3 $\frac{1}{2}$ S	- 10 $\frac{1}{2}$	22/9	17 $\frac{1}{2}$ N	- 14
6	7	E	14:840	358:1	5/6	11 $\frac{1}{2}$ S	0	5/2	6 S	- 1	5/10	17 $\frac{1}{2}$ N	- 4
	10	E	15:900	10:8	7/6	11 S	+ 12	7/2	6 $\frac{1}{2}$ S	+ 12	7/10	18 N	+ 7
	21	W	29:787	177:4	15/6	8 $\frac{1}{2}$ S	+ 4	15/2	9 $\frac{1}{2}$ S	+ 4	15/10	18 N	- $\frac{1}{2}$
	24	W	0:847	190:2	17/6	7 $\frac{1}{2}$ S	- 9	17/2	10 S	- 8	17/10	17 $\frac{1}{2}$ N	- 13
	35	E	14:734	356:8	24/6	5 S	- 3	24/2	12 $\frac{1}{2}$ S	- 1	24/10	17 $\frac{1}{4}$ N	- 6
7	3	E	15:794	9:5	2/7	4 $\frac{1}{2}$ S	+ 10	2/3	12 $\frac{1}{2}$ S	+ 11 $\frac{1}{2}$	2/11	17 N	+ 6
	14	W	29:681	176:2	10/7	1 $\frac{1}{2}$ S	+ 4	10/3	14 $\frac{1}{2}$ S	+ 6	10/11	15 $\frac{3}{4}$ N	+ 1
	17	W	0:741	188:9	12/7	$\frac{1}{2}$ S	- 9	12/3	15 S	- 6	12/11	15 $\frac{1}{2}$ N	- 11
	28	E	14:628	355:5	19/7	2 $\frac{1}{2}$ N	- 5	19/3	16 $\frac{1}{2}$ S	- 1 $\frac{1}{2}$	19/11	13 $\frac{1}{2}$ N	- 7
	31	E	15:688	8:3	21/7	3 $\frac{1}{2}$ N	+ 7 $\frac{1}{2}$	21/3	16 $\frac{1}{2}$ S	+ 11	21/11	13 $\frac{1}{2}$ N	+ 6
8	6	W	29:575	174:9	5/8	6 $\frac{1}{2}$ N	+ 4	5/4	17 $\frac{1}{2}$ S	+ 8	5/12	11 $\frac{1}{2}$ N	+ 3
	9	W	0:635	187:6	7/8	7 N	- 8 $\frac{1}{2}$	7/4	17 $\frac{1}{2}$ S	- 4	7/12	10 $\frac{1}{2}$ N	- 9
	20	E	14:522	354:3	14/8	9 $\frac{1}{2}$ N	- 7	14/4	18 S	- 2	14/12	8 N	- 7
	23	E	15:582	7:0	16/8	10 $\frac{1}{2}$ N	+ 5	16/4	18 S	+ 10	16/12	7 $\frac{1}{2}$ N	+ 5 $\frac{1}{2}$
	34	W	29:469	173:6	24/8	12 $\frac{1}{2}$ N	+ 4	24/4	17 $\frac{1}{2}$ S	+ 9	24/12	4 $\frac{1}{2}$ N	+ 5 $\frac{1}{2}$

x = Eclipses which change position. + = above horizon.
- = below horizon.

THE WINGED FIGURES

HIGH ALTITUDE ECLIPSES

1. Solar

Sub-Cycle	Eclipse No.	Time T/hrs	Degrees	Date	Declination °	Altitude °	Date	Declination °	Altitude °	Date	Declination °	Altitude °
1	19	6:360	76.3	13/1	0	+73	13/9	15.5S	+75.5	13/5	15.5N	+60.5
	22	7:420	89.0	15/1	3N	79	15/9	16.5S	83.5	15/5	15.5N	64.5
	25	8:480	101.8	17/1	1.5N	73.5	17/9	16.5S	76.5	17/5	15 N	62
2	11	6:254	75.0	8/2	7 N	67	8/10	18 S	73.5	8/6	10.5N	64
	14	7:314	87.8	10/2	7.5N	72	10/10	18 S	82	10/6	10.5N	69
	17	8:374	100.5	12/2	8.5N	69	12/10	18 S	77	12/6	9.5N	68
3	4	6:147	73.8	3/3	12.5N	62	3/11	17 S	72.5	3/7	4 N	68
	7	7:207	86.5	5/3	13.5N	66	5/11	16.5S	82.5	5/7	3.5N	76
	10	8:268	103.2	7/3	14 N	62.5	7/11	16.5S	75.5	7/7	2.5N	71.5
3	32	6:041	72.5	22/3	16.5N	58	22/11	13.5S	72.5	22/7	3.5S	71.5
	35	7:101	85.2	24/3	17 N	62.5	24/11	12.5S	85	24/7	4.5S	82.5
4	2	8:161	97.9	2/4	17.5N	61.5	2/12	12 S	82	2/8	5 S	80.5
	27	6:995	83.9	19/4	18 N	61	19/12	6.5S	83	19/8	11.5S	84
	30	8:055	96.7	21/4	17.5N	61.5	21/12	6 S	82	21/8	11.5S	83
5	20	6:889	82.7	14/5	15.5N	63.5	14/1	1.5N	77	14/9	16 S	80
	23	7:949	95.4	16/5	15.5N	64	16/1	1.5N	77.5	16/9	16.5S	81.5
6	13	6:783	81.4	9/6	10.5N	67.5	9/2	7.5N	70.5	9/10	18 S	78.5
	16	7:843	94.1	11/6	9.5N	70	11/2	8 N	71	11/10	18 S	81
	19	8:903	106.8	13/6	9.5N	64	13/2	8.5N	65	13/10	18 S	72
7	5	6:676	80.1	4/7	3.5N	73	4/3	13.5N	64.5	4/11	16.5S	78
	8	7:737	92.8	6/7	2.5N	77	6/3	13.5N	66	6/11	16.5S	83
	11	8:797	105.6	8/7	2 N	70	8/3	14.5N	61	8/11	16.5S	73.5
7	33	6:570	78.8	23/7	4 S	77	23/3	17 N	60.5	23/11	13 S	78.5
8	1	7:630	91.6	1/8	4.5S	84.5	1/4	17.5N	62.5	1/12	12.5S	87
	4	8:690	104.3	3/8	5.5S	75	3/4	17.5N	59	3/12	11.5S	75.5
	26	6:464	77.6	18/8	10.5S	77.5	18/4	18 N	59	18/12	7 S	77
8	29	7:524	90.3	20/8	11.5S	88.5	20/4	17.5N	62	20/12	6.5S	86
	32	8:584	103.0	22/8	12 S	77	22/4	17.5N	63.5	22/12	5.5S	76

THE ECLIPSE CYCLE IN RELATION TO THE ACTUAL YEAR

HIGH ALTITUDE ECLIPSES

2. Satelitic

Sub-Cycle	Eclipse No.	Time T/hrs	Degrees	Date	Declination °	Altitude °	Date	Declination °	Altitude °	Date	Declination °	Altitude °
1	6	21:942	83.3	4/1	3.5N	+75	4/9	13.5N	+65	4/5	17.5S	+80
	9	23:002	96.0	6/1	2.5N	76	6/9	14.5N	65	6/5	17 S	81
	12	24:062	108.7	8/1	1.5N	68	8/9	14.5N	59	8/5	16.5S	70.5
2	34	21:836	82.0	23/1	3.5S	79.5	23/9	17.5N	61	23/5	13.5S	81
	2	22:896	94.8	1/2	4.5S	82.5	1/10	17.5N	62	1/6	13 S	84.5
	5	23:956	107.5	3/2	5.5S	72	3/10	17.5N	57	3/6	12.5S	72.5
2	27	21:730	80.8	18/2	10.5S	80.5	18/10	17.5N	61	18/6	7.5S	80
	30	22:790	93.5	20/2	10.5S	86.5	20/10	17.5N	62	20/6	6.5S	85
	33	23:850	106.2	22/2	11.5S	74	22/10	17.5N	58.5	22/6	6 S	74
3	19	21:623	79.5	13/3	15.5S	78	13/11	15.5N	62.5	13/7	0	75.5
	22	22:683	92.2	15/3	15.5S	78	15/11	14.5N	65	15/7	3.5N	79
	25	23:743	104.9	17/3	16 S	74	17/11	14.5N	61	17/7	1.5N	71
4	12	21:517	78.2	8/4	17.5S	76	8/12	10.5N	66	8/8	7.5N	69
	15	22:577	90.9	10/4	18 S	82	10/12	9.5N	70	10/8	8 N	72
	18	23:637	103.6	12/4	18 S	74.5	12/12	9 N	66.5	12/8	8.5N	67
5	5	21:413	77.0	3/5	17.5S	75.5	3/1	3.5N	71	3/9	13.5N	63
	8	22:473	89.7	5/5	17 S	83	5/1	3 N	77	5/9	14 N	66
	11	23:533	102.4	7/5	16.5S	76	7/1	2.5N	72	7/9	14.5N	62
5	33	21:307	75.7	22/5	13.5S	75.5	22/1	3.5S	74	22/9	17.5N	59
	36	22:367	88.4	24/5	13.5S	86	24/1	4 S	84	24/9	17.5N	62
6	3	23:427	101.1	2/6	12.5S	78.5	2/2	4.5S	77.5	2/10	17.5N	60
	25	21:201	74.4	17/6	7.5S	74.5	17/2	10 S	75	17/10	17.5N	58
	28	22:261	87.1	19/6	7 S	86	19/2	10.5S	87	19/10	17.5N	62
6	31	23:321	99.9	21/6	6.5S	78	21/2	11.5S	79	21/10	17.5N	60
7	18	21:094	73.1	12/7	1.5S	70	12/3	15 S	72.5	12/11	15.5N	59
	21	22:154	85.8	14/7	1.5N	78.5	14/3	15.5S	83	14/11	15 N	64.5
	24	23:214	98.6	16/7	1.5N	76	16/3	15.5S	80	16/11	14.5N	64
8	10	20:988	71.9	7/8	7 N	65	7/4	17.5S	71	7/12	10.5N	62.5
	13	22:048	84.6	9/8	7.5N	71	9/4	17.5S	81	9/12	10 N	69
	16	23:108	97.3	11/8	8.5N	70	11/4	18 S	79	11/12	9.5N	69

III. THE WINGED FIGURES ON THE BODY OF THE IDOL

(Items 54, 55, 56; 61, 62, 63 of Diagram 5; Diagrams 20, 21, 22, 23.)

These Winged Figures comprise two groups of three each on either side of the Main Figure. They will be referred to in the following pages as (F = Figure, L = Left, R = Right):

F₁L — The human Figure with condor symbols } Left-hand group
F₂L — The central (monster) Figure
F₃L — The human Figure with fish symbols }

F₁R — The human Figure with condor symbols } Right-hand group
F₂R — The central (monster) Figure
F₃R — The human Figure with fish symbols }

The two groups are identical except for a slight difference between F₁L and F₁R (see Diagrams 20 and 22), i.e., on F₁L there is no condor hanging from the Staff nor has it a condor projecting from the Wing. Also, it has three condors on the Wing whereas F₁R has only two such.

In each group of three two of the Figures are anthropomorphic. The central Figure of each group is anomalous. Its nature is not easy to determine. It may be an animal, or possibly a semi-human, or sub-human, monster. It is unique in Tiahuanacan iconography, and has a savage and forbidding aspect which seems out of place in Tiahuanacan symbology which for all its expressiveness is not normally brutal. Even the puma as usually depicted has something attractive in its feline ferocity (cf. the Crowned Pumas of the Calendar). It is reminiscent, rather, of the ferocious-looking fanged statues of San Augustin in Colombia. However, as will be seen, the human Figures are related to events either above or below the horizon at any one reading, whereas these animal or sub-human Figures are related to events both above and below the horizon at one reading only. It would appear, therefore, that they are intended to represent a combination of human (above horizon) and puma (below horizon) characteristics.

It is to be expected that each group of three Winged Figures has a relation to one sub-cycle, and the small 'Twelfth Symbolisms', Items 53 and 64, which are grouped with them support this expectation. But these 'Twelfth Symbolisms' do not tell us to which of the eight sub-cycles the relative Winged Figures are to be related, and our first purpose must be to find some indications which will enable us to settle this point.

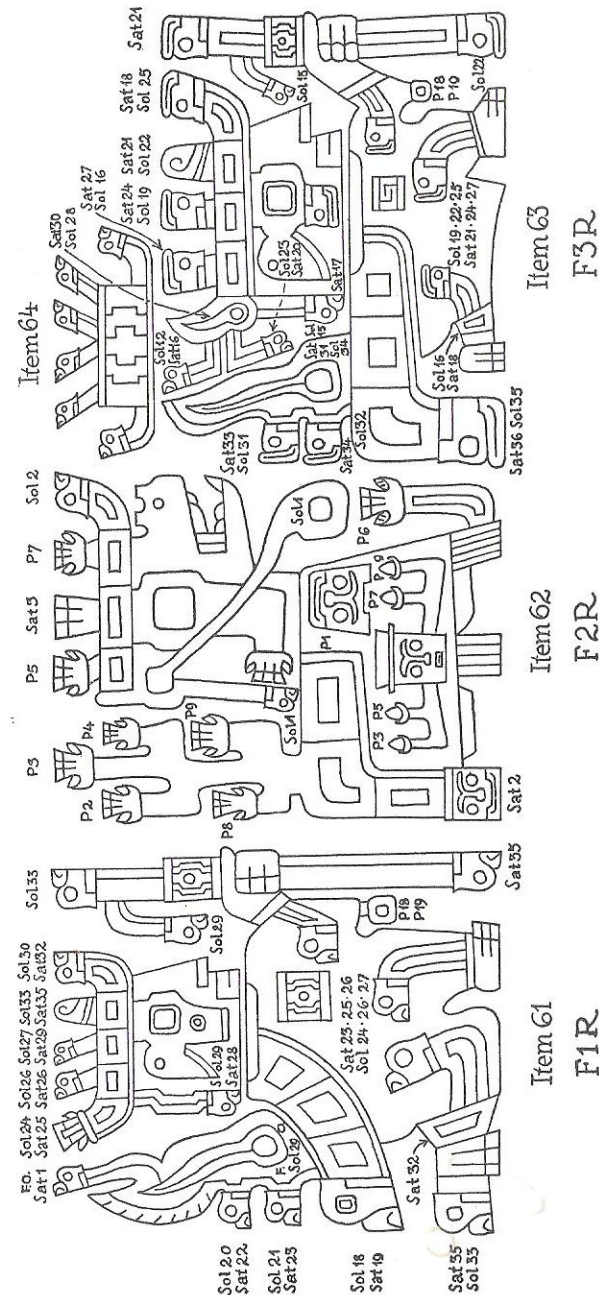


DIAGRAM 20. The Winged Figures on the Body. Right Hand Group. Relating to sub-cycle 7. (The three Figures together refer to a period of 24 days.)

F₁R: Symbolizing: the two periods 1st-9th days and 17th-24th days, i.e., the beginning and end of Sub-Cycle 7.

F₂R: Symbolizing: Intermediate Sub-cycle 2 of sub-cycle 7, 9½ days. (Passages 1-9, beginning with Solar Eclipse 1.)

F₃R: Symbolizing: Intermediate Sub-cycle 1 of sub-cycle 7, 9½ days. (Solar Eclipses.)

Various prominent aspects of the Figures provide clues to the identification of the periods to which they are related, from which it is possible to relate the Figures in combination to definite sub-cycles.

Identification of the Periods Relating to Each Winged Figure

Figure F3L or F3R (the human Figure with fish symbols):

(1) The Crown symbols include three fish heads, indicating satellitic eclipses above the horizon.

(2) The shell symbol on the Crown may also be regarded as a satellitic above from its association with the fish symbols, but indicates a satellitic eclipse which takes place at a high altitude.

(3) The condor head hanging from the Crown indicates a solar eclipse above the horizon which may change its position in relation to the horizon. In any case, it must be a horizon eclipse.

(4) The Body symbols consist of three fish heads with a continuant sign. This indicates that below the horizon for the appropriate period there are three solar eclipses in three adjacent passages of the Satellite.

These indications enable us to isolate in the eclipse cycle in Diagram 6 a certain portion which can be related to Figures F3L or F3R. This portion consists of a period of 9 1/2 days, corresponding generally to the Intermediate Sub-cycle 1.

Figure F2L or F2R (the Monster Figure):

On these Figures the normal symbolism for eclipses, fish or condor, is not used except for two condor heads, one, the first symbol on the Crown, the other hanging from the Crown. Instead, there are a number of budded plumes, an ordinary plume, and a puma face, as well as certain peculiar and unusual symbols on the body. This argues a radical difference in the nature of the symbolization compared with the other Figures, a difference which is emphasized by the contrast between the human Figures and the animal or sub-human Figures which carry this unusual series of symbols.

(1) A clue to the meaning of the symbolism is given by the budded plumes on the Main Figure. These are of large size and, as shown in Chapter 6, Section VI, symbolize revolutions of the Satellite in which the meridian passage above the horizon occurs during the day-time. During such passages there are two satellitic eclipses with one solar eclipse between them. (Below the horizon the reverse applies—a satellitic eclipse between two solar eclipses.) It is likely, therefore, that

on Figures F2L and F2R the budded plumes symbolize, not individual eclipses, but passages of the Satellite each of which includes three eclipses.

(2) On the Crown the condor head indicates a solar eclipse above the horizon.

(3) The plume indicates an eclipse on or near the horizon which may be either solar or satellitic.

(4) The condor behind the head of the Figure indicates a solar horizon eclipse which may change its position in relation to the horizon.

Referring these indications to the eclipse cycle in Diagram 6 we may isolate a 9 1/2 day period, corresponding to Intermediate Sub-cycle 2, which satisfies the above considerations.

Figures F1L and F1R (the human Figures with condor symbols):

The differences between these two Figures, which have already been mentioned, imply a difference in the periods to which they relate.

(1) The Crown symbols comprise three condors indicating solar eclipses above the horizon.

(2) The shell symbol indicates a solar eclipse at high altitude.

(3) The condor head behind the head indicates a solar eclipse above the horizon which may change its position in relation to the horizon.

(4) The Body symbols consist of three condors with a double knot sign, indicating two satellitic eclipses of one passage below the horizon and one satellitic eclipse of an adjacent passage.

As already shown, Figure F3 may be related to an Intermediate Sub-cycle 1 period and Figure F2 to an Intermediate Sub-cycle 2 period. It is apparent, therefore, that Figures F3 and F2 between them cover the whole of the 'Intermediate Eclipse Cycle'. It follows, therefore, that Figure F1 must cover a period composed of part of each of the two Intermediate Sub-cycle periods. And since F3 and F2 cover the 'Intermediate Eclipse Cycle' between them, a cycle which is repeated throughout the whole eclipse cycle, the only reason for the presence of Figure F1 must be to relate the three Figures in combination to a period of 24 days. Also, it is apparent that the period covered by F1 must consist of the end of the period covered by F2 and the beginning of the period covered by F3, or the end of the F3 period and the beginning of the F2 period. Bearing these points in mind it is possible with the clues mentioned to isolate two periods, to one or other of which the Figures

F₁L or F₁R may be assigned. These periods are best indicated by reference to Diagrams 21 and 23, viz., 17th to 24th days of Diagram 21 and 1st to 9th days of Diagram 23.

The above remarks in respect of each of the three Winged Figures under consideration show how certain symbols on each of these Figures may be related to certain parts of the eclipse cycle, and reason has been given why the three Figures in combination should be related to a period of 24 days. We must now see whether the three periods which have been isolated as applicable to the three Figures respectively can be related in combination to any one or more of the eight sub-cycles in Diagram 6. It should be noted, however, that although the F₁ period overlaps both the F₂ and F₃ periods, a full F₂ period must be kept clear for the F₂ symbolism, which fully takes up all the eclipses in such a period. This proviso restricts the application of the three Figures, since it means that the F₂ reserved period must be at either the beginning or the end of a 24-day sub-cycle. Consequently the separate periods for each of the three Figures can, in combination, be related only to sub-cycles 7 and 8 of Diagram 6, for sub-cycle 7 begins with an Intermediate Sub-cycle 2 and sub-cycle 8 ends with one.

Also, if we are correct in attributing the passages both above and below the horizon in its period to Figure F₂ it follows that the eclipses both above and below the horizon in the remainder of the sub-cycle should also be accounted for. This implies that both F₁ and F₃ must be given two readings, as they do not bear sufficient symbols to cover all the eclipses of their periods in one reading only.

Let us now see how the symbols of the six Figures of the two groups may be assigned to the eclipses of sub-cycles 7 and 8, bearing in mind the above considerations.

Assignment of the Symbols to Specific Eclipses. Sub-Cycle 7

We will take first sub-cycle 7 which is reproduced as Diagram 21. In this Diagram the 13th to 24th days are shown twice, in order that the symbols of F₁ and F₃ may be kept separate for the sake of clarity. Reference should also be made to Diagram 20. Sub-cycle 7 is related to the right-hand group of Figures, Items 61, 62, and 63 of Diagram 5.

(a) The Crown, Tail and Wing Symbols.

Figure F₂R (one Reading only).

Instead of a Wing projecting from the Body as on the other Figures,

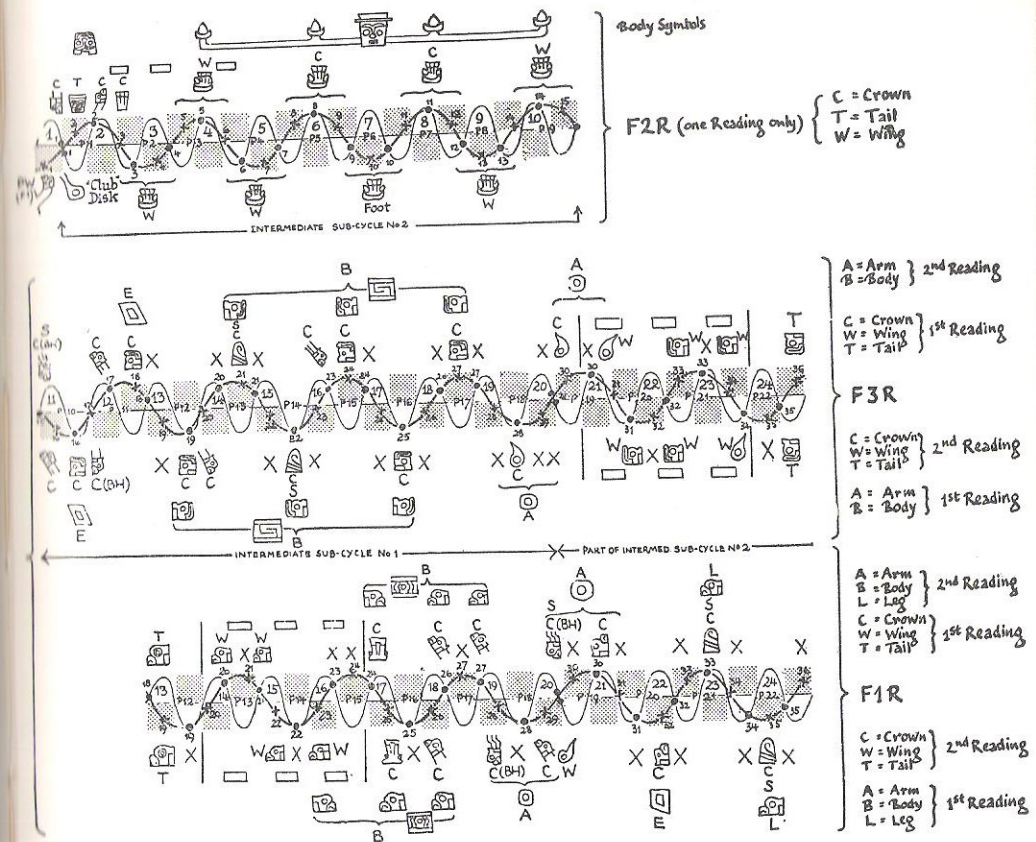


DIAGRAM 21. Winged Figures—Lowest Group on right side of Idol (Items 61, 62, and 63) Sub-cycle 7.

References in Graph:

- Solar Eclipses
- × Satellitic Eclipses
- P Passages
- Eclipses which change position in relation to horizon

References to Symbols:

The 13th to 24th Days are shown separately for Figures F₃R and F₁R
X Eclipses symbolized in Alternative Graph for 13th to 24th Days

The Symbols with brackets refer to the whole Passage

- E — Element on leg
- BH — Behind Head
- PW — Projecting from Wing
- S — Staff

this Figure has a 'candlestick' of five branches, each bearing a budded plume symbol. For uniformity of reference, however, this 'candlestick' is referred to as the 'Wing' of Figure F2.

In the period covered by F2, that is, an Intermediate Sub-cycle 2 period, there are nine passages, five above and four below the horizon. To cover these nine passages, or the eclipses which take place in them, there are eight budded plumes, viz., two on the Crown, five on the Wing, and one projecting from the Leg, plus the plume and condor on the Crown and the puma face on the Tail. There is also the disk within the peculiar 'club-like' object across the Face of the Figure. The budded plume on the Face is not counted here—the Face symbols have another purpose and are dealt with later.

If, as suggested earlier, each budded plume stands for a passage, then eight of such symbols represent eight of the nine passages in the period, leaving one passage over. Of the nine passages eight include three eclipses each, but one, Passage 1, has four eclipses owing to the inclusion of solar eclipse No. 1. It is apparent, therefore, that the eight budded plumes must be assigned to passages 2 to 9, leaving the four eclipses of passage 1 to the condor and the plume on the Crown, the condor behind the Head, and the puma face on the Tail. So much granted, it is now possible to assign the symbols to specific eclipses and passages.

The condor behind the Head is assigned to Solar 1, a horizon eclipse which changes its position in relation to the horizon.

The condor on the Crown is assigned to Solar 2, the only other solar eclipse in passage 1.

The plume on the Crown is assigned to Satellitic 3 which is a horizon eclipse.

The puma face on the Tail is assigned to Satellitic 2, the only eclipse remaining unassigned in passage 1. (Both lunation 1 and passage 1 of sub-cycle 7 are symbolized by a similar symbol.)

Symbols having been assigned to all the eclipses of passage 1, we may now assign the eight budded plumes to the remaining eight passages of the period.

As the plume and condor on the Crown represent eclipses above the horizon it may be inferred that the two budded plumes on the Crown should be related to two passages also above the horizon. A clue to the assignment is given by the three elements on the Body of the Figure. Counting three clear days, viz., the 2nd, 3rd and 4th, from the 1st day, on which Satellitic Eclipse No. 2, represented by the puma face on the

Tail, takes place, we come to the 5th day, on which passage 5 begins. We may therefore assign passages 5 and 7 to the two budded plumes on the Crown.

It will be observed that the five-branched 'candlestick' of the 'Wing' is evidently composed of an upper group of three budded plumes and a lower group of two such symbols. As may be seen from Diagram 21, three passages, No. 3 above the horizon and Nos. 2 and 4 below the horizon, form a 'pattern' which is similar to the upper of the two 'candlestick' groups; also, that passages 8 and 9 form a 'pattern' similar to the lower of the two 'candlestick' groups. We may therefore assign to these five passages the five budded plumes of the 'Wing'.

Passage 6 thus remains—to be assigned to the budded plume projecting from the Leg. This passage is between passages 5 and 7, represented by the budded plumes on the Crown. It thus has a connection with the Crown, as may be indicated by the 'club' which crosses the Face from the Crown to the budded plume of the Leg.

There now remains to be considered the disk within the 'club'. As Figure F2 covers all the eclipses of its period at one Reading it is apparent that when Solar 1 is below the horizon it is still within the F2 period and must be accounted for in its new position, since the condor behind the Head is appropriate only when Solar 1 is above the horizon. When this eclipse is below the horizon, therefore, the condor behind the Head 'drops off' and is not counted; the eclipse is represented, instead, by the disk in the head of the 'club'.

Figure F3R, 1st Reading.

The eclipses are assigned to the symbols as follows:

Sol 15 to the condor behind the Head (when above horizon).

Sol 17 and 23 to the two condors projecting from the Crown.

Sat 18, 24 and 27 to the three fishes on the Crown.

Sat 21 to the shell on the Crown.

Sat 30 to the disk at the end of the Crown.

Sat 31 to the disk within the Wing.

Sat 33 and 34 to the two fishes on the Wing. (Both these eclipses are in the same passage.)

Sat 36 to the fish on the Tail. There are three clear days, indicated by the three elements on the body of the Figure, between the end of the F3 Crown period and Sat 36.

2nd Reading.

- Sat 16 and 20 to the two condors projecting from the Crown.
 Sol 16, 19 and 25 to the three fishes on the Crown.
 Sol 22 to the shell on the Crown.
 Sol 28 to the disk at the end of the Crown.
 Sol 34 to the disk within the Wing.
 Sol 31 and 32 to the two fishes on the Wing (both in the same passage).
 Sol 35 to the fish on the Tail.
 Sat 17 to the condor behind the Head.

Figure F1R, 1st Reading.

- Sol 26, 27 and 30 to the three condors on the Crown.
 Sol 33 to the shell on the Crown.
 Sol 29 to the condor behind the Head (when above horizon).
 Sol 20 and 21 to the two condors on the Wing.
 Sol 24 to the tail symbol at the end of the Crown.
 Sol 18 to the condor on the Tail. There are three days, indicated by the three elements on the body of the Figure, between the end of the F1 Crown period and Sol 18.

In this Reading the condor projecting from the upper part of the Wing is not required. This symbol therefore 'flies off' and is not counted.

2nd Reading.

- Sat 26, 29 and 32 to the three condors on the Crown.
 Sat 35 to the shell on the Crown.
 Sat 28 to the condor behind the Head (horizon eclipse).
 Sat 22 and 23 to the two condors on the Wing.
 Sat 25 to the tail symbol at the end of the Crown.
 Sat 19 to the condor on the Tail. There are three days, indicated by the three elements on the body of the Figure, between the end of the F1 Crown period and Sat 19.
 Sat 29 to the disk within the Wing (when eclipse is below horizon).
 Sat 1 to the condor projecting from the upper part of the Wing. This eclipse is outside any period and therefore 'flies on' to the Wing of F1R.

It will be noticed that the Crown symbols as assigned, do not, in all cases, follow the same sequence as they actually do on the Crowns. It is unlikely that such was the intention of the devisers of the Winged Figure symbolism. These Figures, although giving a representation of the

eclipses, cannot be regarded as an exact diagram showing the eclipses in the precise sequence in which they actually take place. The general appearance of the Winged Figures, taken as a whole, is against any such possibility. The shell, for instance, is always the second symbol on the Crown, a position which certainly cannot invariably be given to it in the actual group of eclipses covered by the Crown symbols, if the shell symbol is assigned, as has been done above, to the highest eclipse in the period.

(b) The Arm, Body and Leg Symbols.

These symbols are those enclosed within the body of the Figures, but in the case of F1 include the condor projecting from the rear Leg and in the case of both F1 and F3 the disks hanging from the Arms. Connected with the body symbols is an element, No. 9, of which there are two in the group of three Figures, viz., between the symbols on the rear Leg and that projecting from the rear Leg of F1, and between the symbol of the rear Leg and the Foot of F3. These may all be treated together, since they all relate to events on the opposite side of the horizon from the Crown, Tail and Wing symbols. The Arm, Body and Leg symbols do not indicate all the eclipses on the side of the horizon to which they relate. They are selective, rather, and give additional information to each Reading, besides serving to identify the periods to which the Figures are related.

Figure F2R.

The body symbols of F2 consist of a human face which is surmounted by what looks like a straw hat, or 'boater', and on either side of this symbol, and attached to it, are two small 'buds', or four in all, which suggest abbreviated budded plume symbols. Above the human face is a puma face, turned upside down.

The four 'buds' attached to the human face mean that this symbol is to be counted four times. There are thus, in effect, four human faces, or, with the addition of the puma face, five symbols in all on the body.

In the relative F2 period there are five passages above the horizon and four below. The five (in effect) symbols may therefore be assigned to the five passages above the horizon. The four human faces are assigned to passages 3, 5, 7 and 9, and the puma face to passage 1.

The human face tells us, in effect, that the passages which they symbolize are visible to a human onlooker. The reversed puma face indicates a passage in which the Satellite's meridian transit takes place

near dawn, so that the Satellite, on or near the midheaven, would be dichotomised, one-half of the disk 'blacked out'. It may be that the appearance of the Satellite in such a relationship between it and the Sun suggested the 'upward looking' representation. (This upside-down symbol is used on the Calendar of the Gateway twice, once to represent a similar passage, and once to represent the full lunation of that passage.)

No reason can be given why the human face should be depicted wearing a 'boater' except the possibility that this form of headgear, so popular in Edwardian times, was also in use in the tropical climate of Tiahuanaco when the Great Idol was engraved, very many thousands of years ago!

Figure F3R, 1st Reading.

The three fishes on the Body are assigned to Sol 19, 22 and 25. The disk hanging from the Arm may, on the analogy of the similar symbols pendant from the arms of the Main Figure, be regarded as symbolizing a passage. Of the two 'disk' passages in the F3 period, Nos. 10 and 18, the disk is assigned to passage 18 for the reason given below. The element on the rear Leg is assigned to the remaining solar eclipse, Sol 16, below the horizon, in the period covered by the Crown symbols, so that all the solar eclipses below the horizon of this period are symbolized by the body symbols and the element.

2nd Reading.

The three fishes on the Body are assigned to Sat 21, 24 and 27, and the 'disk' to passage 19, the only 'disk' passage in the period (above horizon). The element on the rear Leg is assigned to Sat 18, the remaining satellitic eclipse.

Figure F1R, 1st Reading.

The three condors on the Body are assigned to Sat 23, 25 and 26. The condor jutting outwards from the rear Leg is assigned to Sat 35. The position of this symbol seems to suggest that it represents an eclipse at the end of the period, hence its assignment to Sat 35. The disk is assigned to passage 18, the only 'disk' passage in the period (below horizon). The element of the rear Leg is assigned to Sat 32.

2nd Reading.

The three fishes on the Body are assigned to Sol 24, 26 and 27, the condor jutting from the rear Leg to Sol 33, and the disk hanging from the arm to passage 19. These represent all the solar eclipses of the Crown period, and the element of the rear Leg is therefore not required.

Regarding the disk symbols: In the 2nd Reading of both F1 and F3 there is only one disk passage, No. 19, to which the disks of both Figures can be related. In the 1st Reading there is only one disk passage, No. 18, to which the disk of F1 can be related, but two, Nos. 10 and 18, to which the disk of F3 could be related. In view of the indication of the 2nd Reading, the disk of F3 has, in the 1st Reading, been assigned to passage 18, so that in both Readings the disks of both Figures relate to the same passages.

(c) *The Staffs.*

On the Calendar the Staffs of the Winged Figures delimit the three octads into which the Calendar eclipse cycle is divided, but no similar purpose can be seen in respect of the Staffs of the Winged Figures of the Idol. It would appear that the symbols on these Staffs do no more than indicate certain prominent eclipses taking place in the periods covered by the Figures carrying such Staffs.

Take, for example, the Staff of Figure F3R. It consists of a fish head at either end, with a double knot between them. Below the upper fish head a condor head projects from the Staff in a downward-pointing direction.

From the appearance of the downward-pointing condor head it may be surmised that it relates to a solar eclipse taking place on the horizon, one which may, possibly, change its position in relation to the horizon, that is, the eclipse symbolized by the condor hanging from the Crown of the Figure.

Next to horizon eclipses the most prominent are those taking place at high altitudes, on or near the meridian, and to one such we may assign the upper of the fish heads on the Staff, that is, to a high altitude satellitic eclipse. Such would be the 'shell' eclipse of the Crown.

Below the horizon the 'shell' eclipse occurs in the passage either preceding or following the passage in which the 'shell' eclipse above the horizon occurs. There is, therefore, a 'link' (knot sign!) between such eclipses, and we may accordingly assign the 'shell' eclipse below the horizon to the lower of the two fish heads on the Staff.

On these considerations the Staff symbols are assigned as follows:

Figure F3R.

Sol 15 to the condor projecting from the Staff.

Sat 21 to the upper fish head.

Sol 22 to the lower fish head.

Figure F1R.

Sol 29 to the condor projecting from the Staff.
Sol 33 to the upper condor head.
Sat 35 to the lower condor head.

(d) *The Face Symbols*

On F2 the face symbol is a budded plume and on F3 a fish. F1 has no face symbol.

As already shown, there are two 'Intermediate Sub-cycles' within the eclipse cycle, one represented by F2, the other by F3. The former is characteristically symbolized by budded plumes, the latter by fish. The face symbols indicate this. F1 represents parts of both these sub-cycles, and hence has no distinguishing face symbol.

The wings on the faces of F1 and F3 are parts of the face design and are not counted as symbols. Generally, however, such wings are indicative that in the period covered by a Figure there is an eclipse which changes its position in relation to the horizon. Figure F2 has no wing on its face although in its period there is such an eclipse. But that eclipse, whether it takes place above or below the horizon, is still represented on the Figure which covers all eclipses both above and below the horizon in the relative period at one Reading.

Assignment of the Symbols to Specific Eclipses, Sub-Cycle 8

Sub-cycle 8 is related to the group of Figures to the left of the Main Figure, that is, Items 54, 55 and 56. Sub-cycle 8 of Diagram 6 has been reproduced as Diagram 23, and Items 54, 55 and 56 of Diagram 5 have been reproduced as Diagram 22. This group of Figures is the same as the group to the right except for some differences between F1L and F1R which have already been mentioned. Generally, the clues which enabled the right-hand group to be related to sub-cycle 7 enable us to relate the left-hand group to sub-cycle 8, and the indications need not be detailed here. We shall briefly assign the eclipses of sub-cycle 8 to the appropriate symbols.

(a) *The Crown, Tail and Wing Symbols.*

Figure F2L.

Sol 22 is assigned to the condor behind the Head. When below the horizon this eclipse is represented by the 'club' disk.
Sol 23 to the condor on the Crown.

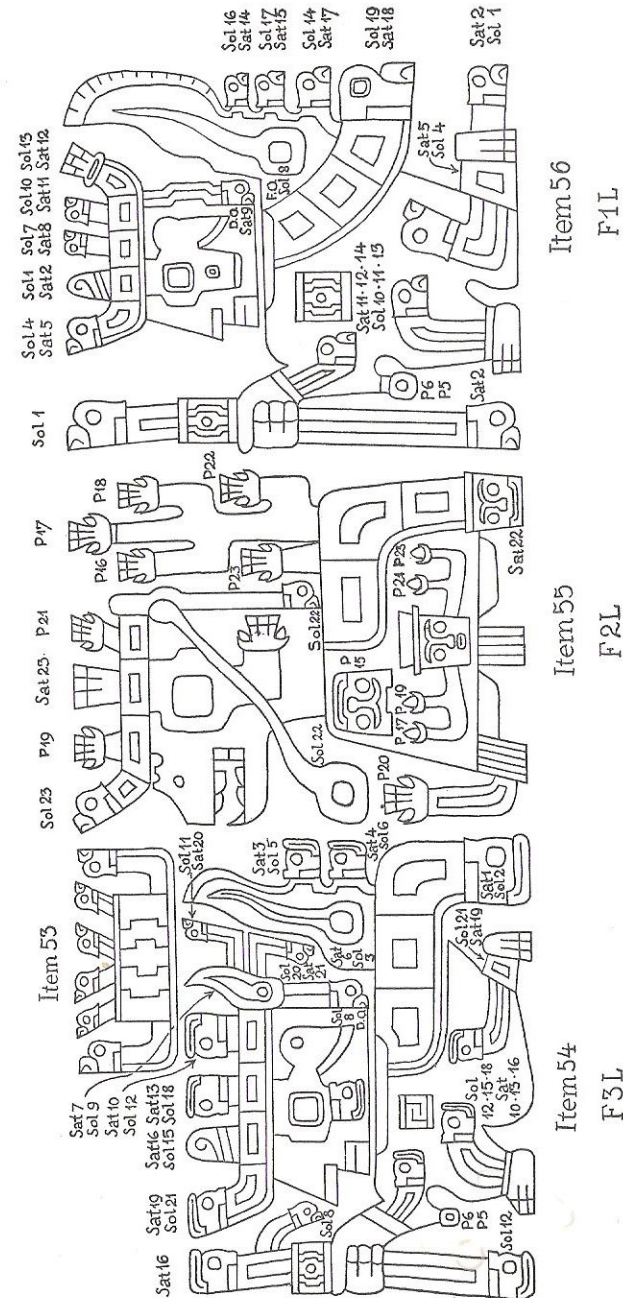


DIAGRAM 22. The Winged Figures on the Body, Left Hand Group. Relating to sub-cycle 8.
(The three Figures together refer to a period of 24 days.)

F3L: Symbolizing: Intermediate Sub-cycle 1 of sub-cycle 8, 9½ days. (Solar Eclipses 8-21. Beginning with Passage 6.)

F2L: Symbolizing: Intermediate Sub-cycle 2 of sub-cycle 8, 9½ days. (Passages 15-23. Beginning with Solar Eclipse 22.)

F1L: Symbolizing: the period 1st-13th days. Solar Eclipses 1-19.

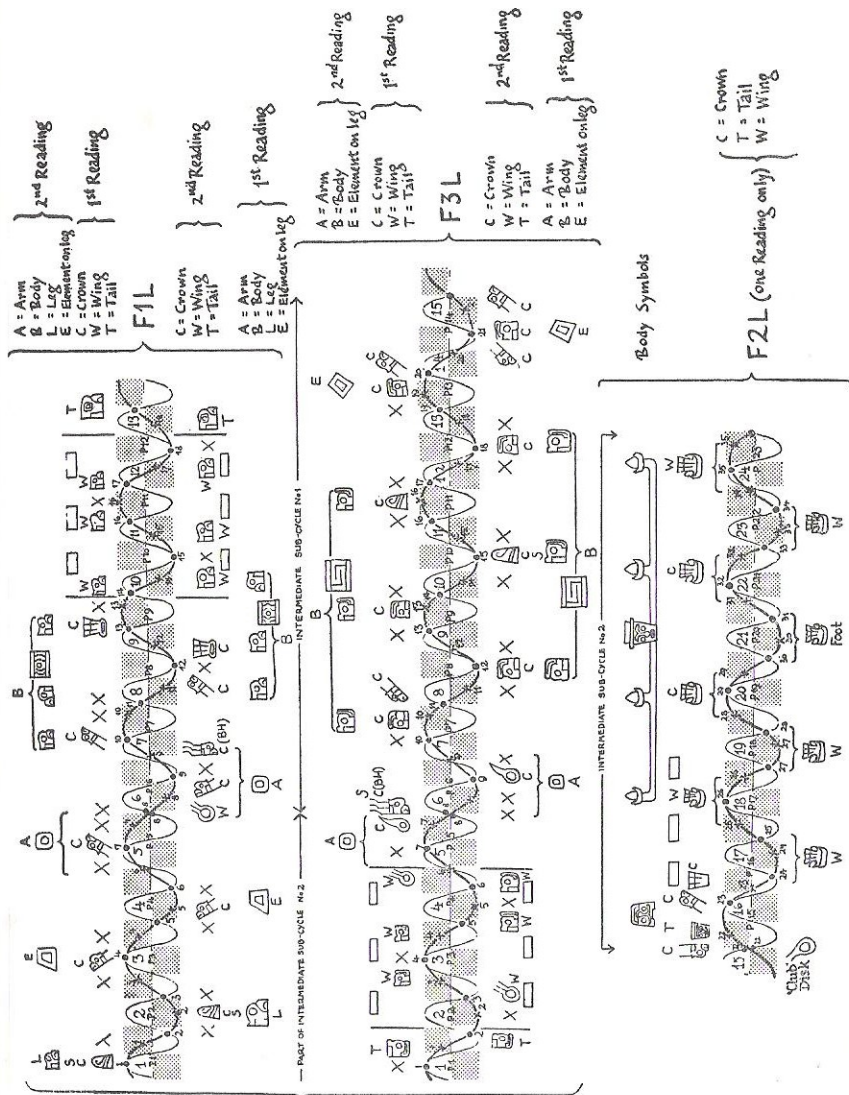


DIAGRAM 23. Winged Figures—Lowest Group on left Side of Idol (Items 54, 55, 56). Sub-cycle 8.

References to Symbols:
The 1st to 13th days are shown separately for Figures F1L and F3L.
X Eclipses symbolized in alternative Graph for 1st to 13th days
The Symbols with brackets refer to the whole passage:
E — Element on Leg BH — Behind Head S — Staff

THE WINGED FIGURES ON THE BODY OF THE IDOL

Sat 22 to the puma face on the Tail. It is separated by three days from passage 19.

Sat 23 to the plume on the Crown.

Passages 19 and 21 to the two budded plumes on the Crown.

Passage 20 to the budded plume on the Leg.

Passages 22 and 23 to the two lowest of the group of five budded plumes projecting from the Body.

Passages 16, 17 and 18 to the three upper budded plumes of the group of five projecting from the Body.

Figure F3L, 1st Reading.

Sol 11 and 20 to the two condors projecting from the Crown.

Sat 10, 13 and 19 to the three fishes on the Crown.

Sat 16 to the shell on the Crown.

Sol 8 to the condor behind the head.

Sat 7 to the disk at the end of the Crown.

Sat 3 and 4 to the two fishes on the Wing.

Sat 1 to the fish on the Tail.

Sat 6 to the disk within the Wing.

2nd Reading.

Sat 20 and 21 to the two condors projecting from the Crown.

Sol 12, 18 and 21 to the three fish on the Crown.

Sol 15 to the shell on the Crown.

Sol 9 to the disk on the Crown.

Sol 5 and 6 to the two fishes on the Wing.

Sol 3 to the disk within the Wing.

Sol 2 to the fish on the Tail.

Figure F1L, 1st Reading.

Sol 4, 7 and 10 to the three condors on the Crown.

Sol 1 to the shell on the Crown.

Sol 13 to the tail symbol on the Crown.

Sol 14, 16 and 17 to the three condors on the Wing.

Sol 19 to the condor on the Tail.

No eclipse is assigned to the condor behind the Head which therefore 'drops off' and is not counted. Of the two horizon eclipses in sub-cycle 8 which change their position in relation to the horizon, viz., Sol 8 and 22, the former has been assigned to F3L and the latter to F2L.

2nd Reading.

Sat 5, 8 and 11 to the three condors on the Crown.

Sat 2 to the shell on the Crown.

Sat 9 to the condor behind the Head.

Sat 12 to the tail symbol on the Crown.

Sat 14, 15 and 17 to the three condors on the Wing.

Sat 18 to the condor on the Tail.

Sol 8, when below the horizon, to the disk within the Wing.

It will be noticed that in the case of both F3R and F3L, that is, the human-fish Figures of sub-cycles 7 and 8, the disk at the end of the Crown is used in all Readings to symbolize an eclipse which would normally be symbolized by a fish. Why, then, was a disk included on the Crown instead of a fish?

As previously stated, the Crowns of F3R and F3L cover, generally, an Intermediate Sub-cycle 1 period, which extends for 9 1/2 days. Now, in the 1st Readings of both sub-cycles 7 and 8 the Crown period of these Figures extends over 10 days, the eclipses symbolized by the disks taking place in the additional half day outside the Intermediate sub-cycle period. This is apparently the reason for the use of the disk on the Crown instead of a fish. The disk is enclosed within a small 'Wing', signifying that it is an addition (i.e., it 'flies on') to the normal Crown period.

In the Readings for below the horizon the above does not apply—the disk is included within the normal 9 1/2 day period—but this does not obviate the necessity for a disk symbol for the reason given above.

Again, in all the F3L and F3R Readings of the Wing symbols there are three eclipses in the Wing period, necessitating the use of the disk within the Wing, in addition to the two fishes attached to the Wing. Why, then, was not a fish instead of a disk placed within the Wing? Or is our assignment of the symbols to eclipses wrong on this account? However, on none of the Winged Figures on the Idol is any symbol but a disk placed within a Wing and it would seem that the disk was employed as the invariable Wing symbol even when a fish would have been appropriate. It might be argued that three fishes could have been placed outside the Wing (cf. F1L, which has three condors outside the Wing), but this would have meant leaving the Wing without a symbol within it, as otherwise the disk symbol within the Wing would have been superfluous. In the case of F1L the three condors attached to the Wing are necessary in both readings to symbolize three eclipses in the Wing

periods, but the disk within the Wing is also required in the second Reading to symbolize an eclipse when below the horizon.

A variant of the disk within the Wing is the disk of the 'club'-like object which stretches across the Face of the 'monster' Figure, F2L or F2R. The symbols of each of these Figures relate to the eclipses and passages of an Intermediate Sub-cycle 2 period at one Reading only. This period includes a solar eclipse which changes its position in relation to the horizon, appropriately symbolized, when above the horizon, by the condor behind the head. When below the horizon this eclipse should normally be symbolized by a fish, but here again, the fish symbol is not used, the eclipse being represented by a disk. In this case, however, the disk is not within a Wing. Apparently a Wing, for some reason, was not considered appropriate to the 'monster' Figure, and the 'club'-like object was devised in its place. In any case, no space is available for a Wing, as the 'candlestick' occupies the position given to the Wing on the other Figures.

Included in the Crown period of F3L and F3R are two solar eclipses, symbolized by two condors at the end of the Crown. No special reason can be seen for the peculiar placing of these condors. It may be surmised, however, that this placing was determined by the available space below the Sceptre, and their positions, one branching upwards and one downwards from a common stem extending from the Crown, by the available space between the end of the Crown and the Wing of the Figure.

*(b) The Arm, Body and Leg Symbols**Figure F2L.*

The four human faces (in effect) are assigned to Passages 17, 19, 21 and 23, and the inverted puma face to passage 15.

Figure F3L. 1st Reading.

The three fishes on the Body are assigned to Sol 12, 15 and 18, the disk hanging from the Arm to Passage 6, and the element to Sol 21.

2nd Reading.

The three fishes to Sat 10, 13 and 16, the disk to Passage 5, and the element to Sat 19.

Figure F1L, 1st Reading.

The three condors on the Body are assigned to Sat 11, 12 and 14, the

THE WINGED FIGURES

disk hanging from the Arm to Passage 6, the condor projecting from the rear Leg to Sat 2 and the element to Sat 5.

2nd Reading.

The three condors to Sol 10, 11, and 13, the disk to passage 5, the condor on the Leg to Sol 1, and the element to Sol 3.

(c) The Staffs

Figure F3L.

The staff is identical with that of F3R. The condor hanging from it symbolizes Sol 8, the upper fish Sat 16 and the lower fish Sol 15.

Figure F1L.

This staff differs from that of F1R in that it has no condor hanging from it. The reason for this is that in sub-cycle 8 there are only two eclipses, Sol 18 and Sol 22, which change their position in relation to the horizon. Sol 22 belongs to Figure F2L, and Sol 8 to Figure F3L. There is thus no horizon eclipse appropriate to the Staff of F1L. The upper condor on the Staff symbolizes Sol 1 and the lower Sat 2.

(d) The Face Symbols

The Face symbols of the left-hand group are the same as those of the right-hand group. See remarks under (d) Face symbols in respect of sub-cycle 7. (p. 128)

The Elements on the Crowns

There are five such elements on the Crowns of the condor-human Figures, F1R and F1L, and four such on the Crowns of the other Figures. No special significance can be seen for these elements, which agree in number with the number of symbols on the Crowns and may therefore be merely indicative of units.

IV. THE WINGED FIGURES ON THE ARMS AND THE CHEST OF THE IDOL

(Items 22, 23, 26, 28, 30; 31, 34, 35, 37, 38 of Diagram 5.
Diagrams 24, 25, 26, 27.)

These Winged Figures comprise two separate groups of five each, each group being composed of two human and three condor Figures.

THE WINGED FIGURES ON THE ARMS AND THE CHEST

Both groups are very similar, but there are a few differences in the distribution of the symbols.

Associated with each of these groups are two 'Twelfth Symbolisms', viz., Items 24 and 25 in the case of the left-hand group, and Items 32 and 33 in the case of the right-hand group. From this it may be inferred that each group is to be related to two sub-cycles of the eclipse cycle.

Also apparently connected with these groups are Item 29 (with left-

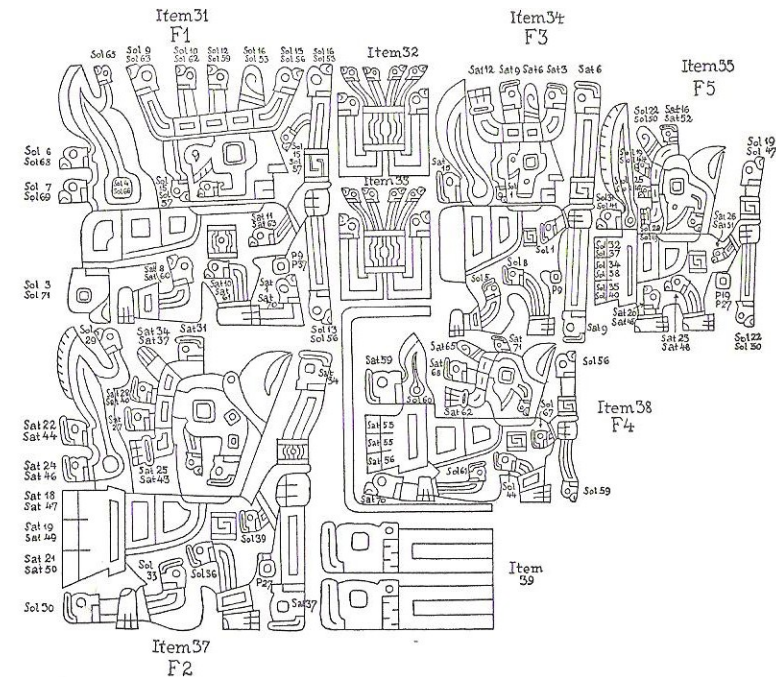


DIAGRAM 24. The Winged Figures on the Arms and Chest. Right-hand Group—Relating to Sub-cycles 1 and 2

hand group) and Item 39 (with right-hand group), each consisting of two large fish heads with four marks in their neck rectangles.

As the Winged Figures on the Body have been associated with sub-cycles 7 and 8 (both condor sub-cycles), the Winged Figures on the Arm and Chest must be related to four of the six remaining sub-cycles. It may be inferred, therefore, that they relate to the fish pairs of sub-cycles, Nos. 1 and 2, and 5 and 6, as may be indicated by the large fish heads with their four neck rectangle marks, Items 29 and 39.

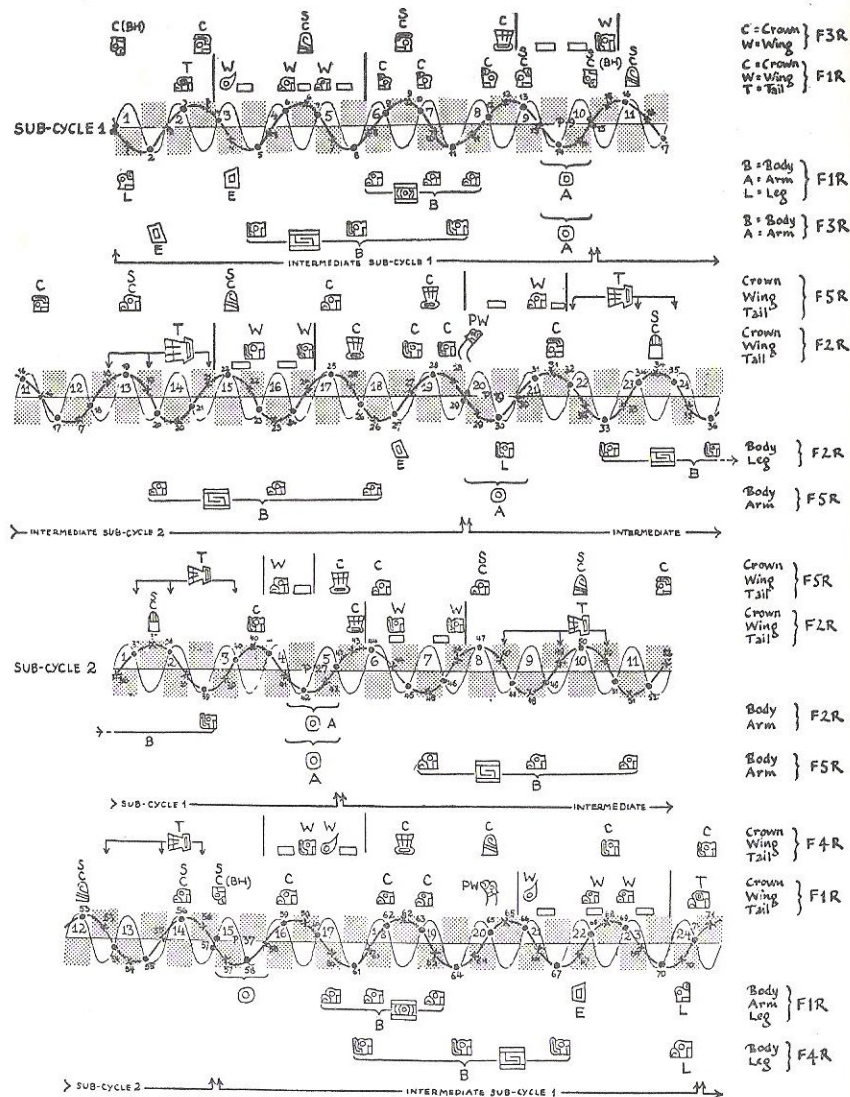


DIAGRAM 25. Sub-cycles 1 and 2 relating to Winged Figures of the Arms and Chest. Right Hand Group. (Items 31, 34, 35, 37, 38.)

References in Graph:

- Solar Eclipses
- × Satelitic Eclipses
- P Passages
- Eclipses which change position in relation to horizon (Solar 1, 15, 29, 57)

References to Symbols:

- A — Arm
- B — Body
- C — Crown
- E — Element on Leg
- BH — Behind Head
- PW — Projecting from Wing
- L — Leg
- S — Staff
- T — Tail
- W — Wing

THE WINGED FIGURES ON THE ARMS AND THE CHEST

If, as was inferred, each group is to be related to two sub-cycles, the point arises: Are the Figures of each group related to two sub-cycles in combination, or to each sub-cycle separately? Also, do the Figures of the left-hand group relate to sub-cycles 1 and 2, and those of the right-hand group to sub-cycles 5 and 6, or vice versa?

These questions are answerable only by trial and error, and in the outcome the best solution so far achieved shows that the Figures of each group are to be related to a pair of sub-cycles in combination, as follows:

Right-hand group to sub-cycles 1 and 2 (Diagrams 24 and 25),
Left-hand group to sub-cycles 5 and 6 (Diagrams 26 and 27).

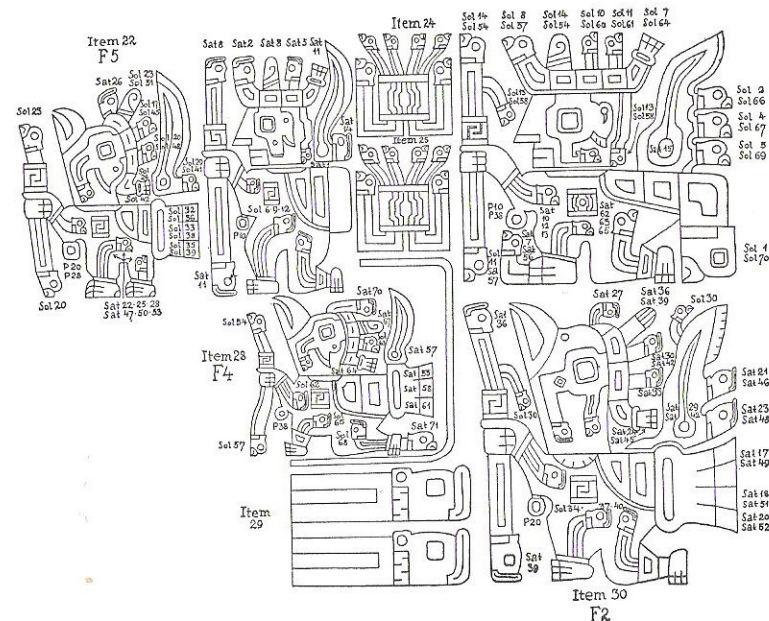


DIAGRAM 26. The Winged Figures on the Arms and Chest. Left Hand Group—Relating to Sub-cycles 5 and 6

In assigning the Figures to various parts of the sub-cycles regard has been given to the clues mentioned in Section III, particularly to those given by the Body symbols (see Diagram 19). From these clues it is apparent that the five Figures of each group cannot in themselves cover all the eclipses of two sub-cycles, nor can they be associated solely with one sub-cycle: it has been necessary, therefore, to allow two Readings to certain Figures.

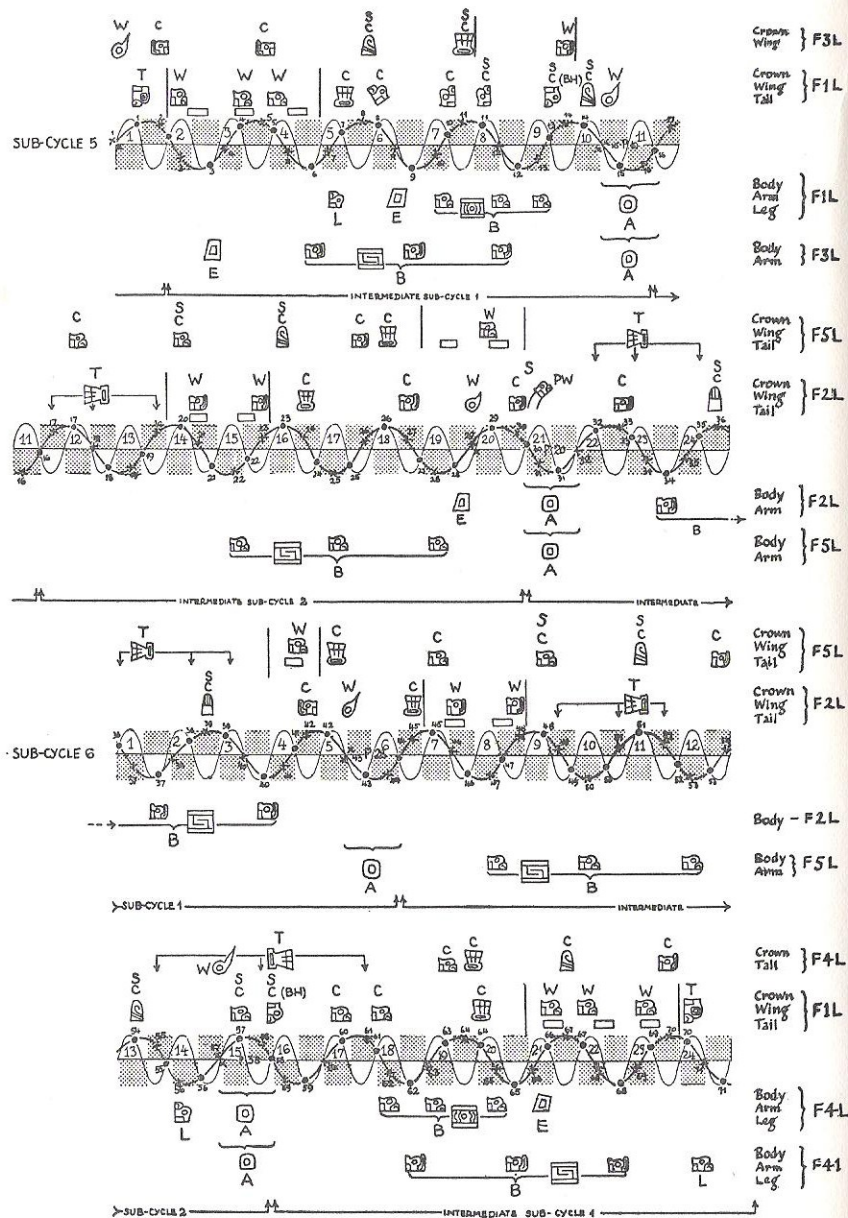


DIAGRAM 27. Sub-cycles 5 and 6 relating to the Winged Figures of the Arms and Chest. Left Hand Group. (Items 22, 23, 26, 28, 30.)

References in Graph:

- Solar Eclipses
- × Satellitic Eclipses
- P Passages
- × Eclipses which change position in relation to horizon (Satellitic 1, 15, 29, 43, 57.)

References to Symbols:

- | | |
|--------------------|---------------------------|
| A — Arm | L — Leg |
| B — Body | PW — Projecting from Wing |
| BH — Behind Head | S — Staff |
| C — Crown | T — Tail |
| E — Element on Leg | W — Wing |

THE WINGED FIGURES ON THE ARMS AND THE CHEST

As may be seen from Diagrams 25 and 27, an Intermediate Sub-cycle period No. 1 extends between sub-cycles 1 and 2, and also between sub-cycles 5 and 6. The Body symbols of Figure 2 thus relate to a period, part of which is in two sub-cycles. In assigning the Crown symbols of this Figure, therefore, five have been related to eclipses in one sub-cycle but only three in the other. This may be the reason why, on the Crown of Figure 2, there are only three rectangles, whereas, normally, there is one rectangle to each Crown symbol. This double Reading of the Crown symbols may also be the reason why on the Face of Figure 2 there are two symbols. If this reading is correct there is, in effect, at least so far as the Crown, Wing and Tail symbols are concerned, a separate reading for each sub-cycle.

The Crown of Figure 2 is peculiar also in that the shell symbol differs in form from the shells on the Crowns of the other Figures. The reason for this difference may be due to the double reading mentioned in the previous paragraph, that is, while the shell symbol is assigned normally to the highest eclipse in the period, in the case of Figure 2 it is assigned to two eclipses in the same period.

A peculiarity of the Figures in the groups under discussion is that Figures 2, 4 and 5 of each group possess very large Tails, clearly divided into three parts (four in the case of F2 of the left-hand group). This is taken to mean that each of these symbols counts as three (or four) symbols.

Only the eclipses above the horizon have been assigned to symbols in Diagrams 25 and 27. So far as the eclipses below the horizon are concerned, there is no necessity to indicate them separately as, under the 'correspondence principle', the eclipses above the horizon of sub-cycles 1 and 2 correspond to those below the horizon of sub-cycles 5 and 6, and the eclipses above the horizon of sub-cycles 5 and 6 correspond to those below the horizon of sub-cycles 1 and 2. This 'correspondence' applies also to the eclipses which change their positions in relation to the horizon (see Table in Section II). That the Winged Figures of the Arms and Chest are intended to be read also for below the horizon may be inferred from the indications of the Winged Figures of the Body, as shown in Section III, and that the 'correspondence principle' is to be applied is indicated by the upper symbolism on the front of the Body between the two groups of Winged Figures on the Arms and Chest. This symbolism (Item 36), as shown in Chapter 8, Section VI, symbolizes the 'correspondence principle'.

As a cross reference between eclipses and symbols on the Figures is

given in the Diagrams, it is hardly necessary to set out the eclipses and symbols in tabular form. The Diagrams show clearly how the symbols have been assigned to the eclipses. All the eclipses above the horizon have been symbolized, those which change position in relation to the horizon being represented either by a condor behind the head or by a Wing disk, the condor 'dropping off' and the disk 'flying off' when the eclipses so represented are below the horizon.

There are, however, two discrepancies: (a) only three eclipses have been assigned to the Tail of F2 of the left-hand group, although, as is shown in Diagram 5, this symbol has four divisions, and (b) no eclipse is assigned in a few instances to the Wing disk of certain Figures. In spite of a very considerable amount of trial and error it has not been found possible to associate the Figures to the sub-cycles in such a way as to obviate these discrepancies, and to that extent, therefore, our solution of the Winged Figures of the Arms and Chest is incomplete and must be regarded as only a tentative one. (It may be, of course, that the material that is before us is incorrect: new drawings from new photographs of the areas in question may bring forth more satisfactory results.) However, the correspondences outweigh the discrepancies, and there can be little doubt that the purpose of these Winged Figures is to represent the eclipses of sub-cycles 1 and 2, and 5 and 6.

Regarding the Staffs: it will be noticed that these have continuant signs, instead of double-knot signs as on the Staffs of the Winged Figures of the Body. This means that the eclipses indicated by the Staff symbols are on the same side of the horizon. They have, accordingly, been assigned to the two highest eclipses of the relative periods, solar or satellitic, as the case may be. (One Staff, that of F2 of the right-hand group, is shown on Diagram 5 as having a double-knot sign, instead of a continuant sign. As the Staffs of all the other Figures of this group, and also the Staffs of all the Figures of the left-hand group, have continuant signs, it is unlikely that the staff of F2R as shown is correct. This sign, on the drawing by Posnansky, is dotted in, which suggests the possibility of doubt or error.)

V. THE WINGED FIGURES ON THE TURBAN

(Items 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 of Diagram 5; Diagram 28)

It is inferred from the available space that originally there were altogether ten Figures on the Turban. However, as may be seen from Diagram 28, three Figures are entirely missing, three are largely

obliterated, and only four, those at the back, are in a good state of preservation. Of the four intact Figures two are human-headed and two condor-headed and are in general similar in appearance to other such Figures on the arms and body of the Idol, or to the Winged Figures on the Calendar. At each side of these Figures appears what seems to be an animal representation which, however, differs from the animal or 'monster' Figure on the Body of the Idol. Although partly obliterated, it can be distinguished that the crowns and heads of these 'animal' Figures are similar to the crowns and heads of the human Figures, except that, instead of straight noses, and mouths, they have what appear to be upturned snouts of rather pig-like appearance. From their heads long tails project and curve downwards, where they are curiously rolled up into balls. Their wings and staffs are similar to those of the human and condor Figures. Nothing can be said as to the nature of this peculiar type of Figure, which is unique, not only on the Idol, but among all the existing symbolisms of Classical Tiahuanaco.

Considerable efforts have been made to reconstruct the missing Turban Winged Figures, as well as those which are partly obliterated, as to shape and load of symbols, but they have met with no success, and so, for the present at least, this group of Figures remains unsolved. However, a few remarks may be made which may assist others in attempts to solve this problem.

Above the Turban Winged Figures, on the Crown, at the sides, are two 'Twelfth Symbolisms', Items 2 and 3 of Diagram 5, which are obviously related, not to the Crown, but to the Winged Figures above which they are placed. From these it may be inferred that the Turban Winged Figures are to be related to two sub-cycles, necessarily sub-cycles 3 and 4 (condors), the only remaining ones. This assignment is supported by the form of these 'Twelfth Symbolisms' which corresponds to the form of those of the Winged Figures of the Body, viz., Items 53 and 64, and which are related to sub-cycles 7 and 8, both of which are condor sub-cycles. The 'Twelfth Symbolisms' which relate to the condor sub-cycles have a slightly different form from those which relate to the fish sub-cycles—see Items 24, 25, 32 and 33, which are related to the fish sub-cycles 1, 2 and 5, 6.

CONCLUSION

It was stated at the beginning of this Chapter that it could be safely assumed that the Winged Figures of the Idol, like those of the Calendar,

gave a representation of the eclipses throughout the year of the Idol. We may now ask how far our interpretation of the Winged Figures of the Idol, as given in the foregoing Sections, bears out this assumption.

In the case of the Winged Figures of the Body, the association of the symbols with the eclipses of sub-cycles 7 and 8 may be considered on the whole as very good, particularly in respect of the 'monster' Figures, and there can be no doubt that these groups of Winged Figures are adapted to the eclipses of the sub-cycles assigned to them. The solution of the Winged Figures of the Arms and Chest, although there is a general association of their symbols with the eclipses of sub-cycles 1 and 2, and 5 and 6, can only be regarded as tentative, but is nevertheless sufficiently conclusive to leave little doubt of a relationship between the symbols of those Figures and the eclipses of the sub-cycles to which they have been related. The Winged Figures of the Turban, although in all probability to be associated with the eclipses of sub-cycles 3 and 4, remain unsolved. Taking the interpretation as a whole, however, it may be conceded that we have established, beyond any reasonable doubt, that a relationship exists between the Winged Figures of the Idol and the eclipses of the eclipse cycle, as divided into eight sub-cycles.

Chapter 8

THE REMAINING PARTS OF THE IDOL

In this Chapter we shall deal with those parts of the Idol which still remain unconsidered, interpreting them as far as possible in the light of our general knowledge of Tiahuanacan symbology, as derived from our study of the Calendar, and from the interpretation of the other parts of the Idol as given in the foregoing Chapters.

I. THE CROWN

(Item 1 of Diagram 5; Diagram 29)

This part has suffered a considerable amount of damage and one symbol only, a condor, can be readily deciphered. It is at the end of a long bracket projecting upwards from the Turban. However, the sculpture still shows the remains of seven other brackets (which stand out in relief) and there can be no doubt that in its perfect state there

Item 1

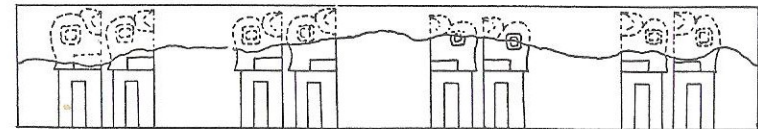


DIAGRAM 29. The Crown

were eight symbols, probably all condors, on the Crown. From the one remaining condor it would appear that all eight were of large size compared with the other condor heads appearing on the sculpture. From the fact that there were probably *eight* condors on the Crown it may be inferred that they symbolized the eclipse cycle of eight Twelfths, and from their large size that they were largely ornamental, giving an embellishment to the Crown. The latter inference is supported by the fact that certain significant totals are obtained by excluding (together

with the skirt symbols) the eight Crown symbols. (See Chapter 9.) It is noteworthy also, that the eight Crown condors are grouped in pairs, corresponding to the four pairs of eclipse sub-cycles.

II. THE FACE-DESIGN OF THE IDOL

(Items 14, 15 of Diagram 5; Diagram 30)

It is the invariable practice in Tiahuanacan symbology to give all Faces a characteristic design, which may be either full face as in the case of the Twelfth Heads, or side face as in the case of the Winged Figures. The Face of the Idol is interesting: it is a full-face presentation, but as the entire symbolism of the Idol is centred on the back, the Face actually consists of two halves, as seen in Diagram 5. In Diagram 30 (a) the two halves are shown in their correct relationship to each other. The fact that the Face really consists of two 'items' seems to be stressed by the two L-square-like elements which embrace each half. The two (flat) halves are also separated by the (protruding) wedge-like nose, but they are yet again connected by a band at the upper part of the nose, between the two rectangles which, in their turn, also touch the L-squares.

The Face of the Idol bears the usual features—the large eyes with protuberances below bearing two small circles or disks; the wings, each containing a tailed disk; the small eyebrow-like rectangles above the eyes. Either protuberance terminates in a fish-head, and a condor tips either wing. From either brow-rectangle projects a condor head.

Like all Faces in Tiahuanacan symbology the Face of the Idol is symbolical of the plane of the ecliptic, and its details must therefore refer to something that happens on the ecliptic—obviously eclipses. Indeed, it appears that either half of the face is intended to refer to one apparent revolution of the Satellite. The symbols on either half-face, therefore, must refer to the eclipses during one such revolution. Apart from the eyes which symbolize the Earth, the 'viewpoint' of the observer, there are six symbols or elements on either side of the Face corresponding to the six eclipses which take place in any one apparent revolution of the Satellite—three solar and three satellitic, three normally above the horizon and three below. These latter are represented by the three symbols distinctly placed 'below the eye'. (See Diagram 30 (b).)

Either of the fishes at the ends of the protuberances and either of the condors at the tips of the wings has six marks in its neck rectangle. The

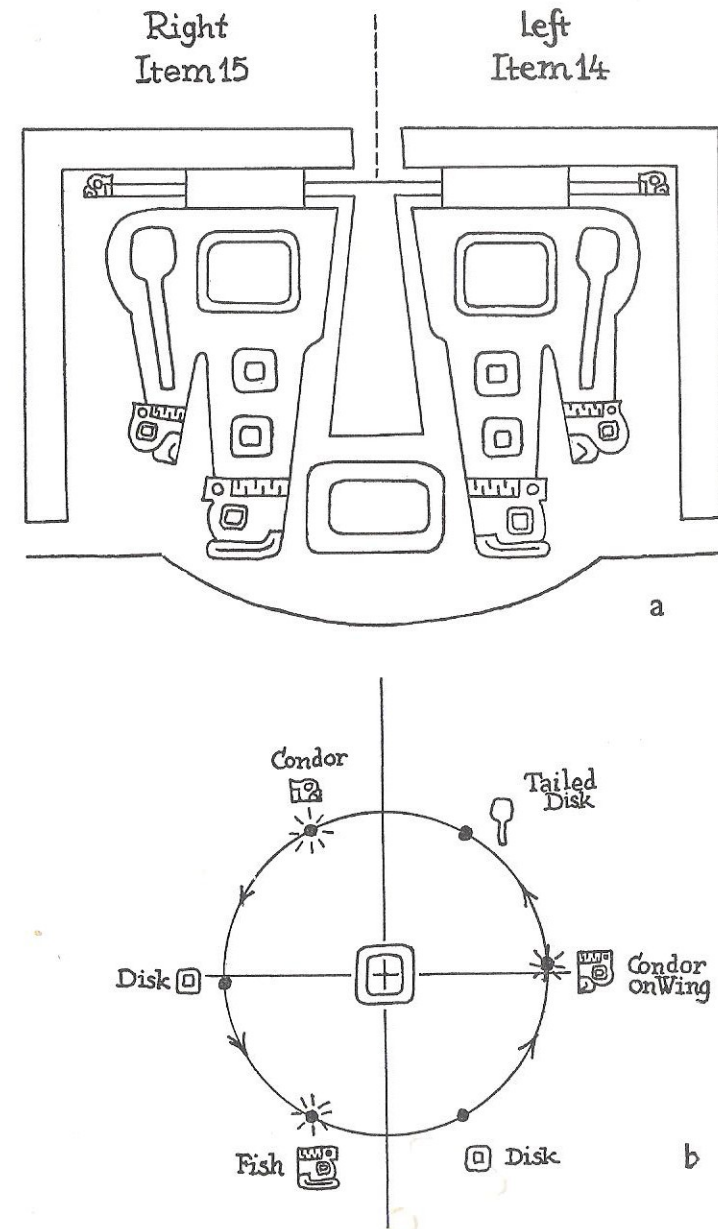


DIAGRAM 30. The Face-Design of the Great Idol

THE REMAINING PARTS OF THE IDOL

reason for these marks may be that each of these symbols is to be counted for six. If so, then the Face of the Idol as a whole expresses the number 35, that is, the number of complete lunations in one sub-cycle. Thus:

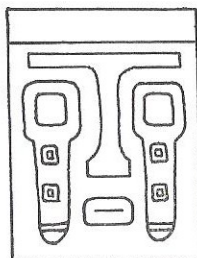
2 fishes, 6 each	=	12
2 condors, 6 each	=	12
2 condors	=	2
2 eyes	=	2
4 circles	=	4
2 tailed disks	=	2
1 mouth	=	1
		—
		35

III. THE SMALL FACES ON THE HEAD OF THE IDOL

(Items 80 and 81 of Diagram 5; Diagram 31)

These small faces are positioned on either side of the Head, behind the ears. The ears are part of the original Idol, but the small faces behind them appear to belong to the same period as the other carvings

Item 80



Item 81

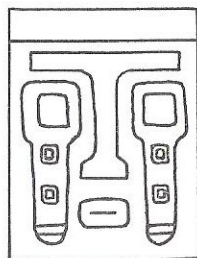


DIAGRAM 31. The Small Faces on the Idol

on the Idol. Their design is 'abbreviated' from the usual pattern of face design. They show only the eyes, with protuberances below them on which are the usual two small circles, the nose and the mouth.

So far as can be seen these small faces have no purpose other than making up the number of full faces on the Idol to twelve, thus:

THE BEAKER

Idol Face (Items 14 and 15)	1
Equinoctial Figure (Item 58)	1
Solstitial Figures (Items 57 and 60)	2
Other Twelfths (Items 42 and 43)	2
Upper Symbolism on Front of Idol (Item 36)	2
Lower Symbolism on Front of Idol (Item 65)	2
Small Faces on Head of Idol (Items 80 and 81)	2
	—
	12

The number of Full Faces on the Idol thus corresponds to the number of Twelfths in a year.

Very prominently displayed on the chest of the Idol there is a well-linked and hence obviously interrelated group of symbolisms which is evidently as important for the full understanding of the conditions obtaining at the time of the Idol as the similarly well-linked and inter-related group of symbolisms on its back. The latter referred to general aspects of the year or of parts of it (*see* Chapter 6, Sections II, III, V, VII) while the former appear to refer to special ones. These symbolisms will be dealt with in the following four Sections, IV–VII.

IV. THE BEAKER

(Item 27 of Diagram 5; Diagram 32)

The arms of the Great Idol are depicted as bent at the sides of the body so that the hands are laid across the chest. This is a characteristic attitude on various Tiahuanacan idols. In each hand is held an article the precise nature of which is obscure, but which, following Posnansky, we shall refer to as the 'Beaker' and the 'Sceptre'. The left hand holds the beaker, the right hand the sceptre—similar to the idols 'El Fraile' and 'Kochamama' and an Idol of Puma Punku. The purpose of these articles is not known, but probably they had a symbolical significance. It should be remembered that the Great Idol is of probably greater age than the sculptures which have been carved upon it. Here we are concerned only with the symbols of the later epoch which are carved on the beaker and sceptre emblems.

Let us consider the beaker first. It is suggested that the beaker symbolism is indicative of the year of the Idol and various of its peculiarities. As we have shown, in Chapter 4, the year consisted of twelve Twelfths, six of which were condor Twelfths and six fish

THE REMAINING PARTS OF THE IDOL

Twelfths. The beaker symbolism actually consists of six fishes, at the top, and six condors, on the rest of the vessel.

But the beaker symbolism contains other interesting and important references. As has been shown, in Chapter 3, the Eclipse Cycle consists of eight sub-cycles, and there are four 'corresponding' pairs of Twelfths and four 'non-corresponding' Twelfths in one year. Now, there are two condor heads on a narrow band, below the rim, separated by four rectangular elements. These four elements are counters, evidently

Item 27

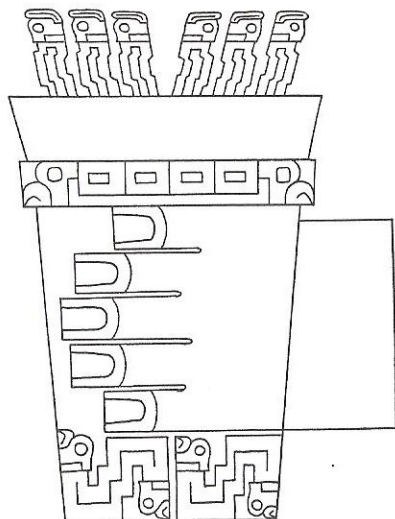


DIAGRAM 32. The 'Beaker'.
The object held in the Idol's Left Hand.

referring to those four 'non-corresponding' Twelfths. At the bottom of the beaker are two pairs of condor heads, each head in communication, or correspondence, with the other by way of a 'staircase' or 'step' motif. Either of these 'staircase' signs features eight 'steps'; it will be appreciated further that, by their form, these signs may be read 'either way', from left to right, or from right to left, thus actually indicating 'four pairs'. This is the reference to the four pairs of 'corresponding' Twelfths, and the eight steps refer to the eight Twelfths between each 'corresponding' pair of Twelfths.

THE SCEPTRE

The conspicuously placed 'five fingers' between the symbolisms for the corresponding and the non-corresponding Twelfths may refer to the 'fivefold intermediary eclipse cycle' which links the sub-cycles into pairs as is set forth in Chapter 3 (see also Section VII, below).

Thus the *number* of 'non-corresponding' Twelfths and the *number* of 'corresponding' pairs is indicated in the beaker symbolism; either group, of course, includes both fish and condor Twelfths whose complete number is distinctly given. Therefore it has been proved that the beaker is really what its form shows it to be: a measuring device.

V. THE SCEPTRE

(Item 40 of Diagram 5; Diagram 33)

The part of the 'sceptre' which is above the hand that holds it consists of a rather complicated-looking symbolism featuring a 'bracket' terminated by two fish heads, on whose 'back' are three fish heads, the central one of large size with six marks in its neck rectangle, the two outer ones of normal size and aspect. The large head rests directly on the 'bracket', but the other two are at the end of long necks. Within the

Item 40

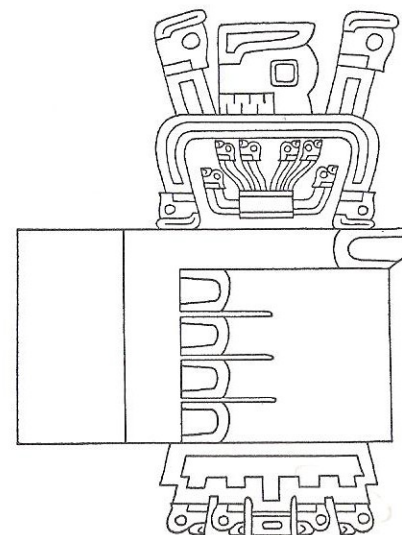


DIAGRAM 33. The 'Sceptre'.
The Object held in the Idol's Right Hand.

THE REMAINING PARTS OF THE IDOL

bracket is a small 'Twelfth Symbolism'. The part of the sceptre which is below the hand consists of two pairs of condors separated by a rectangular (or oval) element, all bracketed together.

If the symbolism of the beaker refers to the year it may be expected that the symbolism of the sceptre refers to the Twelfths, a surmise which is both indicated and supported by the 'Twelfth Symbolism' placed within the 'bracket', like an object to be measured is placed between the jaws of a gauge. But, if this surmise is correct, it implies that the reference of the sceptre symbolism in relation to the Twelfths must be of a special character, since the general character is normally sufficiently represented by the Twelfth Symbolism itself. The sceptre must therefore symbolize one Twelfth in greater detail than a Twelfth Symbolism does, or it must symbolize in greater detail not merely one Twelfth, but all the Twelfths, that is, all the sub-cycles, in a general way.

That the central fish head has a special significance can be inferred from its large size, its six marks in its neck rectangle, and its large double-circled eye. These attributes lead to the possibility that this fish head is intended to express various numbers, either by itself or in combination with the fish heads on either side of it. Thus the following numbers can be found to be expressed:

Large Fish Head, determined by—

'double' eye, and two lateral fish heads	$(1 \times 2 + 2)$	4
six marks	(1×6)	6
six marks, and two lateral fish heads	$(1 \times 6 + 2)$	8
six marks, and 'double' eye	$(1 \times 6 \times 2)$	12

Reference to Table 2, Chapter 4, shows that there are either 4 or 6 'fish' passages in each of the eight sub-cycles, or 8 or 12 in each of the four pairs of sub-cycles. A prominent aspect of each sub-cycle or each pair of sub-cycles is thus indicated, an indication which refers to the Satellite rather than to the Sun, since a similar solar or 'condor' aspect is not also indicated.

The arc-like 'bracket' may thus draw attention to the fact that arcs of the Satellite above the horizon, or passages, are specially referred to in the sceptre symbolism, or, more particularly those passages to which the fish heads are related on the above reading of the symbols.

Since, above the horizon, certain aspects of the Satellite are indicated it might be supposed that any references to below the horizon would also be to the Satellite. Now, a satellitic eclipse, symbolized above the horizon by a fish head, is symbolized below the horizon by a condor.

THE UPPER SYMBOLISM ON THE FRONT OF THE BODY

(See Diagram 15.) We may suppose, therefore, that the four condor heads below the hand, i.e., below the horizon, have a relation to satellitic eclipses or to passages with central satellitic eclipses.

In Table 2, Chapter 4, there is a sequence of four 'fish' passages, then a 'disk' passage followed by three 'condor' passages. This Table relates to the passages above the horizon. Below the horizon the sequence of passages is: three 'fish', then a 'disk', followed by four 'condor' passages. The four condor heads below the hand may therefore be related to the sequence of four 'condor' passages which, below the horizon, runs through the whole of the eclipse cycle.

VI. THE UPPER OF THE TWO SYMBOLISMS ON THE FRONT OF THE BODY

(Item 36 of Diagram 5; Diagram 34)

This symbolism consists of two Faces joined by a 'chain' with three large 'links'. The upper Face has a crown with a condor head at each end

Item 36

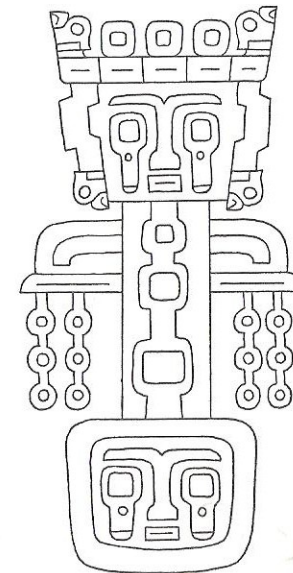


DIAGRAM 34. Upper Symbolism
on the Front of the Idol

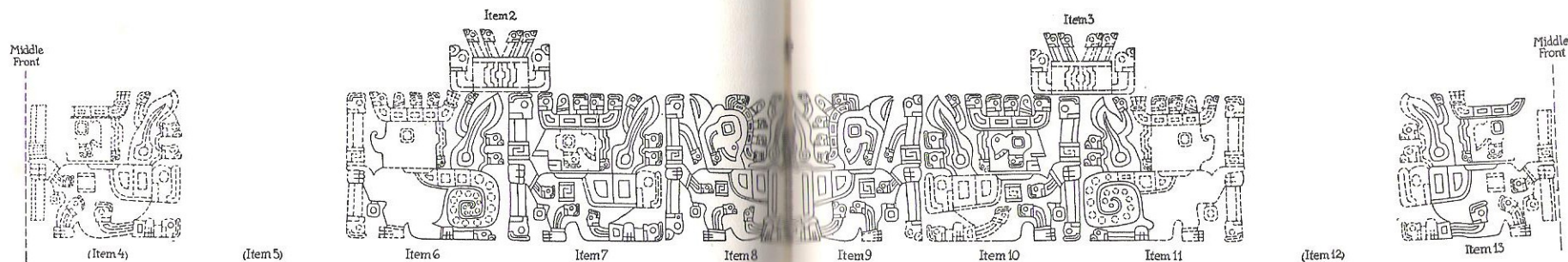


DIAGRAM 28. The Winged Figures on the Turban

separated by three elements and on each side of the Face a condor head is pendant from the Crown. Between the two Faces and on either side of the central 'chain' are 'brackets' from which depend four small 'chains' each of three 'links'.

This symbolism reflects that peculiarity of the eclipse cycle which may be termed the 'Correspondence Principle' and which is explained in Chapter 3.

Under the 'Correspondence Principle' there is a period of three Twelfths between corresponding sub-cycles of the eclipse cycle. Thus, sub-cycles 1, 2, 3 and 4 correspond to sub-cycles 5, 6, 7 and 8 respectively. The two Faces represent each corresponding pair, linked together by the central 'chain' with three links corresponding to the interval of three sub-cycles between the sub-cycles of each pair.

In the eclipse cycle of eight sub-cycles there are four corresponding pairs, and these are symbolized by the four small 'chains' each of three links, which again symbolize the three sub-cycle interval between the sub-cycles of each pair.

The 'Correspondence Principle' should not be confused with the correspondence between the *Twelfths* referred to in Chapter 4, a correspondence with an interval of a complete eclipse cycle of eight Twelfths between the corresponding Twelfths.

The Crown of the upper Face would also seem to symbolize the 'Correspondence Principle', the two condors representing the sub-cycles of the interval between them.

Pendant from the Crown on either side of the upper Face are two condor heads. Such symbols in such a position on the Winged Figures denote eclipses which take place on or near the horizon and they may have a similar purpose here also.

VII. THE LOWER OF THE TWO SYMBOLISMS ON THE FRONT OF THE BODY

(Item 65 of Diagram 5; Diagram 35.)

This symbolism consists of two Faces joined together by a 'pillar' on either side of which extends a 'bracket' at the end of which is a condor head looking upwards. On either side of the upper Face a condor head looks downwards, and farther apart on either side there are two condor heads joined together by a band or ribbon which extends over the top of the Face. This ribbon bears three elements the nature of which is not clear. The lower face is surrounded by an alternator band with twelve alternators.

This symbolism seems to reflect that peculiarity of the eclipse cycle which we have called 'The Fivefold Intermediate Eclipse Cycle'. (See Chapter 3.)

Under this peculiarity the eclipse cycle is divided into four pairs of sub-cycles. Each pair consists of two sub-cycles, the second of which is a continuation of the first. Thus, the pairs are: 1, 2; 3, 4; 5, 6; and 7, 8. Hence, the two Faces of the symbolism, each of which represents one sub-cycle of a pair, are firmly connected, not by a 'chain' as in the symbolism dealt with in Section VI, but by a solid 'pillar'. The upper Face may be related to the first sub-cycle of a pair and the lower to the second sub-cycle.

There is, however, a possibility that although this symbolism represents the 'Fivefold Intermediate Eclipse Cycle' in a general way, it is restricted to the two condor pairs of sub-cycles, 3, 4 and 7, 8, with particular reference to the latter pair.

The pair of condors at the ends of the band or ribbon over the upper

THE REMAINING PARTS OF THE IDOL

Face and the pair which look upwards from the ends of the brackets between the two Faces may indicate the two condor pairs of sub-cycles.

The alternator band round the lower Face corresponds both in number of alternators and in their 'direction' to that of the Twelfth Head, Item 43, which, as shown in Chapter 6, Section VII, would appear to be related to sub-cycle 7. Also, as shown in Chapter 7, the two lowest groups of Winged Figures, between which the symbolism under discussion is situated, are related to sub-cycles 7 and 8.

The two condors on either side of the upper Face probably have reference to horizon eclipses as in the symbolism dealt with in Section VI.

Item 65

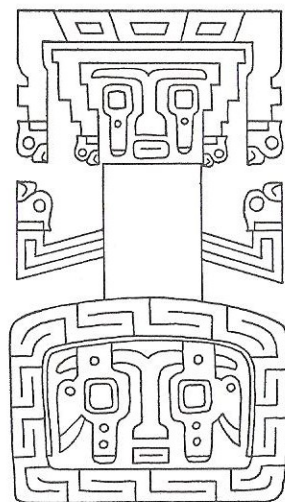


DIAGRAM 35. Lower Symbolism on the Front of the Idol

VIII. THE NECKLACE AND THE CONDORS AT THE ENDS OF THE BRAIDS

(Items 16, 17, 18, 19, 20, 21 of Diagram 5; Diagram 36)

These parts of the Idol must be considered together since they are apparently interconnected. The actual braids, however, will be dealt with separately.

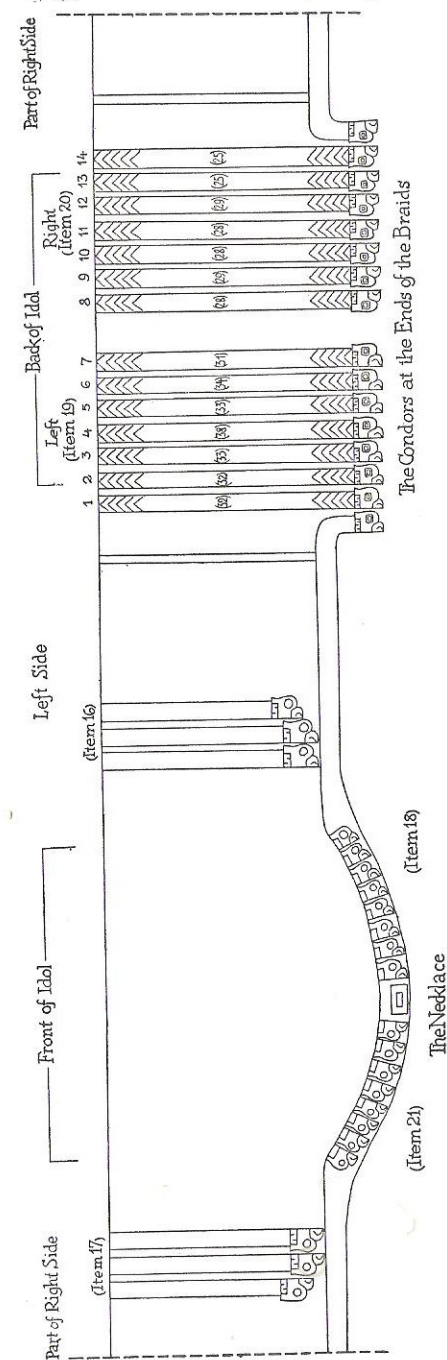


DIAGRAM 36. The Necklace and the Condors at the ends of the Braids.

The necklace consists of 16 condor heads, in two groups of eight each, separated by a rectangular element; they form a curved chain below the Face of the Idol. It is held in position partly by its connection with the condors of the braids and partly by two groups of three condor heads which, at either side of the necklace, are connected to the Turban by long brackets. These small groups of three condors are distinctive by their having two marks in their neck rectangles.

At the back of the Head there are two further groups of eight condor heads, seven of each group being suspended from the Turban by long 'braids' which represent the hair of the Idol. The eighth condor of each of these groups has a bracket which connects it to the ends of the necklace.

The 16 condors at the back of the Head are distinctive by their having three marks in their neck rectangles and by their large double eyes.

At first glance the necklace might be taken as being largely ornamental and the braids as giving a realistic touch to the Idol by portraying its hair. But the grouping into eights, and the marks inside the rectangles, also the large eyes, render it extremely likely that these groups of symbols have a definite significance in relation to the year of the Idol. Two possible purposes may be surmised: (a) that the grouping of the symbols and the marks and eyes of the condors are designed to express various numbers having significance, and (b) that the downward-looking aspect of the symbols is intended to suggest a relationship with events (eclipses) taking place at a high altitude. Let us examine the symbolism from this point of view and see what numbers could be expressed by various combinations of the symbols and their attributes. The large eye is taken as an indication of 'doubling', that is, each condor with such an eye counts as two; the two or three marks in the neck rectangles must be taken to mean that each condor with such is to be counted as two or three.

The four groups of eight condors total to 32.

The condors of the necklace plus the two unbraided condors total 24.

The necklace condors, counting those of the two small groups as 2 each, count as 28.

The braided condors total to 14.

The braided condors, with double eyes, count as 28.

The 16 condors at the back, with double eyes, count as 32.

The 16 condors at the back, with three marks, count as 48.

The 16 condors at the back, with double eyes and three marks, count as 96.

The 20 condors suspended from the Turban express the number 96.

Other numbers also could be expressed, but the above examples are limited to those which appear to have significance. They are—14, 24, 28, 32, 48 and 96.

There are 14 lunations in one Intermediate Sub-cycle, and 28 lunations in one Intermediate eclipse cycle.

There are 24 days in one Twelfth, and 24 Twelfths in two years.

There are 48 days in a pair of Twelfths.

Regarding the possibility that the symbols may indicate events taking place at a high altitude, it may be significant that in the eclipse cycle there are 31 condor passages, that is, passages during which the solar eclipse takes place at, at least, a moderately high altitude. (See Table 2, Chapter 4.) This is only one short of 32. Let us assume that the devisers of the Idol symbology decided to treat one of the 'disk' passages as a 'condor' passage and thus count the total of 'condor' passages as 32. Then, in one year, there would be 48 'condor' passages, or 96 in two years.

This is a not unlikely possibility. The actual number of 'condor' passages, 31, is an unwieldy one, whereas 32 is subdivisible by the significant number 8, that is, the number of Twelfths in one eclipse cycle.

The division of the necklace and of the condors at the back into groups of eight, also the small groups of three, may reflect the eclipse cycle of eight sub-cycles of which there are three in the two-year cycle of Twelfths.

IX. THE BRAIDS

(Items 19, 20 of Diagram 5; Diagram 36)

Pendant from the Turban, at the back of the Idol, are two groups of seven long brackets, each of which terminates with a condor head. Each of these brackets bears a number of chevrons. The brackets, with the chevrons, obviously represent the braided hair of the Idol, and it has been pointed out by Posnansky that the women of the almost extinct tribe of 'Chipaya' Indians still plait their hair into a multitude of braids.

From our experience with the Calendar on the Gateway and with the parts of the Calendar of the Idol so far considered it is unlikely that the chevrons on the braids are merely semi-naturalistic artistic ornaments whose actual number did not matter. On the contrary, there can be little doubt that the number of chevrons on the twice-seven braids was

intended to express some significant number—or numbers, because of the parting—relative to the year of the Idol, useful for some cross-check, or for the confirmation of some total, or sub-total.

Unfortunately, an exact count of the chevrons on the braids is not possible. Serviceable photographs of the Idol or other information have so far proved to be unobtainable; available photographs (*see* Diagram 4) show only five of the seven braids of either group, and even these are not too clear, the photograph having evidently been coarsely retouched. The number of chevrons that can be made out on the photograph is greater than the number shown on Posnansky's schematic drawing; Posnansky was a keen observer and a careful draughtsman, but he evidently considered the chevrons as mere ornaments and therefore seems to have put in only an approximate number to give the general impression of the original. Therefore, all that can be done at present is to consider the photograph as being more authoritative, to count the chevrons on the visible braids and to make an estimate regarding the non-visible braids, and to give a tentative explanation of the totals thus obtained. Whatever the exact number of chevrons, however, one thing is certain: the right group contains a smaller number of chevrons than the left one; this difference must have been intended, and must therefore also have some significance.

The number of chevrons on the visible braids 3 to 7 is 169, that on braids 8 to 12 is 142, viz.:

<i>Left Group</i>	<i>Right Group</i>
Braid 3 — 33	Braid 8 — 28
4 — 38	9 — 29
5 — 33	10 — 28
6 — 34	11 — 28
7 — 31	12 — 29
—	—
169, average 34	142, average 28

Taking it that the non-visible braids have about the same number of chevrons as the average of the visible ones, viz.:

Braid 1 — 34	Braid 13 — 28
2 — 34	14 — 28
—	—
68	56

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the totals would be: for the Left Group 237 and for the Right Group 198, together 435.

This total, and the subtotals it is made up of, have no meaning so far as can be seen. The nearest significant numbers would be: 425 (the number of lunations in a year) and 192 (the number of days in the eclipse cycle). The balance, 233, would only be a 'completor', such as we also find on the Calendar of the Gateway to make a significant subtotal up into a significant total. It is therefore quite likely that the discrepancies are due to a defective count and that 425 (233 + 192) is actually the number of chevrons on the braids. The non-visible shoulder braids, for instance, may have fewer chevrons; also, on the photograph, Braid 4 of the Left Group has 38 chevrons, 4 more than the others of that group; Braid 7 of the same group has only 31 chevrons. A recount of the chevrons on the Idol itself would probably prove our surmise correct and establish the totals of 425 and 192.

It is not unlikely that *chevrons* (which consist of *two* strokes) were used on the braids instead of single lines, not only as more naturalistically portraying the actual braiding of the hair, but as indicative also of the number of lunations (850) in the two-year period to which the symbolism of the Idol generally relates.

X. THE SKIRT

(Item 79 of Diagram 5; Diagram 37)

The 'Skirt' is the space between the girdle and the Feet of the Idol. Whether it is in fact a skirt or, since it is divided both at front and back, rather in the nature of a pair of trousers, does not really matter so far as our present considerations are concerned. Although the Great Idol is distinctly more masculine than feminine in general appearance, Posnansky was of the opinion that this Idol was of the latter gender, representing 'Pachamama', the Goddess of the Earth. However that may be this garment, whatever it is, is covered with a series of disks. Its lower part is badly damaged, but it is apparent that the whole of the skirt must have been originally covered with disks. This may be inferred also from the statue called 'El Fraile' which, in certain respects, is related to the Great Idol, whose similarly shaped and adorned 'skirt' reaches down to the ankles.

On the part of the skirt which is still in existence 177 disks, whole or part, can be counted. There is space for at least a hundred more. The

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question arises: How many disks may there have been originally and what did they represent?

There can be no doubt that the disks, no matter how many there were, expressed a significant number in the year of the Idol, or, as the skirt is 'divided', at least two significant numbers, by way of confirmation or cross-reference. Significant numbers referring to the year of the Idol are:

- (a) 425 — Lunations in one year
- (b) 288 — Days in one year
- (c) 283 — Lunations in one eclipse cycle
- (d) 274 — Revolutions in two years
- (e) 192 — Days in one eclipse cycle
- (f) 137 — Revolutions in one year
- (g) 91 — Revolutions in one eclipse cycle

Of these figures the only ones at all possible to be related to the disks actually existing on the skirt plus those that may be safely conjectured on account of the available space are (b), (c), and (d). However, (c) need not be taken into consideration at all, for the disk is never used as a symbol for a lunation.

Regarding (d): The disk is used on the Main Figure as a symbol for certain revolutions. It is also used, pendant from the arms of certain Winged Figures, as a symbol for certain passages. It is possible, therefore, that the disks on the skirt represent the 274 revolutions of two years. If so, then the total number of symbols on the Idol would be 1132, or four times the number of lunations in the eclipse cycle ($4 \times 283 = 1132$). On the other hand, the number 274, as shown in Chapter 9, is already expressed twice by certain groups of symbols on other parts of the sculpture, and it may be doubted that this number would be expressed a third time.

The disk is also used on the Idol as a day symbol (on Item 43), so that its use on the skirt to represent the number of days in the year would be quite appropriate. In that event the complete skirt would have consisted of 288 disks. The total number of symbols on the Idol would thus be 1146, a number which has no significance either in itself or in its subdivisions.

Another matter relating to the disks on the skirt may be mentioned: the skirt is divided at both back and front, so that the disks fall into two groups. Of the existing disks there are, according to Posnansky, 94 in

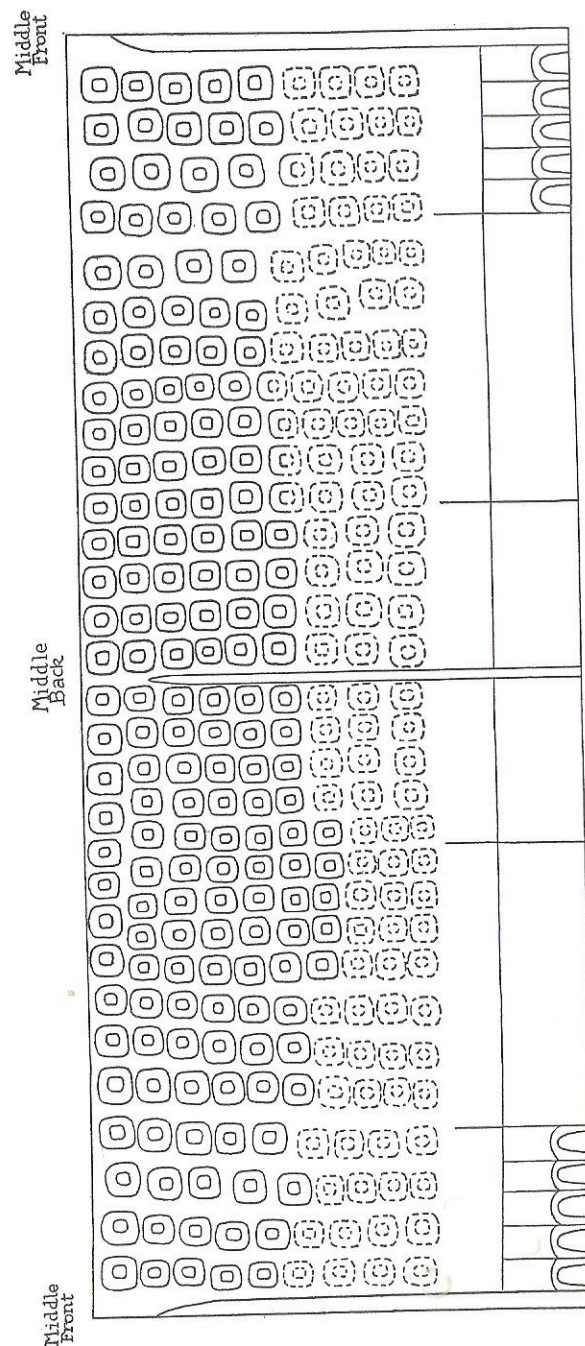


DIAGRAM 37. The Skirt (Item 79). Reconstruction on the basis of 288 disks, 151 on the left side and 137 on the right.

the left-hand group and 83 in the right-hand group, the areas covered by each group being approximately equal. One might have expected an equal distribution between the two sides of the Idol, and the division into two unequal groups, which must have been intentional, must therefore have some significance or purpose. We can only surmise the reason for this unequal distribution. It is possible that the division was either:

$$(a) 151 \text{ plus } 137 = 288, \text{ or}$$

$$(b) 144 \text{ plus } 130 = 274$$

In both cases the difference between the groups is 14, which is approximately proportional to the division of the existing disks.

In the case of (a) the right-hand group (137) expresses the number of revolutions in one year and the total (288) the number of days in one year, the left-hand group (151) having no significance. It is noteworthy, however, that the division $151 + 137$ corresponds, on a two-year basis, viz., $302 + 275 = 576$, to Groups 3 and 2 of Chapter 9, also that 151, added to group 1 or 2 (274) equals 425, the number of lunations in one year.

In the case of (b) the left-hand group (144) expresses the number of days in a half-year and the total (274) the number of revolutions in two years, the right-hand group (130) having no significance.

Of the two cases, (a) seems rather more likely to have been intended than (b).

To conclude: It is highly probable that the disks on the skirt represent either the number of revolutions in two years (274) or the number of days in one year (288). There is, perhaps, a balance in favour of the latter number.

XI. THE LARGE DOUBLE EYES OF CERTAIN FIGURES AND SYMBOLS

The eyes of certain Figures and symbols on the Idol are very conspicuous. They are composed of two circles (or squares with rounded corners) which give them a prominence far beyond the ordinary single-circle eyes of the Figures and symbols which are not so distinguished. So prominent, indeed, are these eyes that they must be regarded as having some special significance.

The Figures and symbols with such eyes are as follows:

	Diagram 5 Item No.	Diagram No.	Number of Eyes
<i>Faces:</i>			
Idol	14, 15	30	2
Main Figure	58	11	2
Twelfth Heads	42, 43	16	4
Lower symbolism on front of Body	65	35	2
Winged Figures	4/13, 22/3 26, 28, 30, 31, 34, 35, 37, 38, 54, 56, 61, 63	20, 21, 24, 26, 28	24 — 34
<i>Symbols:</i>			
Condors, Crown	1	29	8
Condors, Face of Idol	14, 15	30	2
Condors, Pedestal	48	18	2
Condors, Tails of Winged Figures	26, 31 56, 61	20, 22 24, 26	4
Condors, End of Braids	19, 20	36	16
Fish, Sceptre	40	33	1
Fish, Face of Idol	14, 15	30	2
Pumas, Pedestal	47	18	2
			—
			37 . . . 71

On the Calendar the eyes of certain Figures are exceptionally large and have been hollowed-out to a hemispherical form. This was interpreted as being an indication, in conjunction with the other hollowed-out parts of the Calendar, that all aspects of the Calendar had their counterparts below the horizon. In other words, that a double reading was to be applied to the Calendar. It is possible that the devisers of the Calendar derived this method of indication from the Great Idol, elaborating the double-circle eyes of that monument to hollowed-out ones, and extending the hollowing-out to indicate certain significant numbers. Assuming that a similar purpose obtained on the Idol as on the Calendar in regard to the large eyes, let us see whether any support is forthcoming from the various Figures and symbols concerned.

In the case of the Winged Figures of the Body only the two human Figures have large double eyes. The 'monster' Figures have ordinary, single, eyes. As shown in Chapter 7, Section III, the 'monster' Figures relate to both above and below the horizon at one single reading of the symbols, whereas the human Figures must be given two readings to cover all the eclipses of their periods. The double eyes of the human Figures may thus, on the analogy of the Calendar, indicate the double

reading, any such indication being unnecessary in the case of the 'monster' Figures.

The Winged Figures of the Arms and Chest must also be given two readings to cover all the eclipses of the sub-cycles to which they relate, a first reading for eclipses above the horizon and a second for those below the horizon in accordance with the 'Correspondence Principle' (see Chapter 7, Section IV).

These indications lend support to our assumption that the double eyes are intended to indicate that the Idol Figures and symbols are applicable to below the horizon as well as above. There can be little doubt that the Tiahuanacans who devised the Idol symbology were aware of events taking place below the horizon. Apart from the indications of the Winged Figures mentioned above, there is also the indication of the symbols representing the lunations (Chapter 6, Section V). It is apparent that the Tiahuanacans of the Idol age had a comprehensive knowledge of the whole eclipse cycle on both sides of the horizon, or, in other words, that they knew of the rotundity of the Earth.

But, if our reading of this matter is correct, it may be queried: why were not all Faces and symbols given double eyes; why were such limited to those listed above? It is possible that this limitation was due to an intention that the number of such eyes should reflect some significant number relating to the year of the Idol or to the eclipse cycle, and, if this is so, it is possible also that the 'doubling' aspect of these eyes was used in a more limited manner in relation to specific groups of symbols, or even in respect of single symbols, also with the purpose of indicating certain numbers.

Regarding the first possibility, it will be observed that the large, double eyes total to 71, which is the nearest whole number to double the number of lunations in a sub-cycle or Twelfth, i.e., the number of lunations in a pair of sub-cycles or Twelfths ($35 \frac{3}{8} \times 2 = 70 \frac{3}{4}$). It is also the number of solar or satellitic eclipses in each pair of sub-cycles according to certain combinations of such eclipses above and/or below the horizon—see Summary to Table in Chapter 3. Also, double the number 71 (142) is the number of solar eclipses above the horizon in the ideal eclipse cycle, or the number of satellitic eclipses below the horizon in such a cycle—again see the Table to Chapter 3.

The second possibility receives some support from the interpretation of the necklace group of symbols in Section VIII, and of the Sceptre in Section V, of this Chapter.

Chapter 9

THE NUMBER OF SYMBOLS ON THE IDOL: THE NUMBER OF DAYS IN THE YEAR OF THE IDOL

On the Calendar of Tiahuanaco the number of lunations, days and revolutions in the year is indicated by the number of symbols on various parts of the sculpture and these indications, by their general agreement with certain of Hoerbiger's calculations, formed the basis on which the interpretation of the Calendar was made. No similar course could be followed in respect of the Idol, partly because the dilapidated state of part of its carvings prevented a definite count of the symbols, and partly because the best tentative count, or conservative estimate, which could be made did not result in any total or sub-totals which could be related to any possible or probable number of days, lunations and revolutions in the year of the Idol. The matter was therefore approached indirectly as related in Chapter 3. As a result of our deductions, which were confirmed as the inquiry proceeded, it became apparent that the symbology of the Idol had a relation to *two* years. It was then realized that the practice followed on the Idol was actually similar to that used on the Calendar, only, instead of the number of symbols being related to one year, they were related to two years.

The following conspectus shows the number of symbols, etc., on the various parts of the Idol. Where symbols have been obliterated or destroyed an estimate has been made, not arbitrarily, but based on certain indications. Luckily such doubtful symbols are not numerous and the results are sufficiently conclusive to base certain deductions on them.

The total number of symbols employed is 1146, a number which does not appear to have any significance in itself. If, however, we deduct the 8 Crown symbols, and the 288 Skirt symbols (that is, the estimated numbers assigned to those parts) the remainder total to 850, or twice 425. It is rather significant that this number, 425, should be almost exactly the number of lunations in a year of 288 days based on the

THE NUMBERS ON THE IDOL

eclipse cycle of 283 lunations in 192 days. (The exact number is 424 1/2.)

When the symbols are further examined it is found that they may be divided into four well-defined groups. These are (see Diagram 38):

- Group 1. All those parts of the Idol above and including the necklace and braid condors, but excluding the Crown, with the addition of the Beaker and Sceptre symbols 274 symbols
- Group 2. The back, the sides below the arms, and the symbolism at the front (Item 65) between the two lowest groups of Winged Figures 274 symbols
- Group 3. The Winged Figures on the arms and chest, and the symbolism on the front (Item 36) between these groups of Winged Figures, plus the Meander 302 symbols
- Group 4. The Crown and the Skirt 296 symbols

It is significant that Groups 1 and 2 should each total to 274 symbols, or twice 137, which compares with 136 1/2 revolutions in a year of 288 days based on the eclipse cycle. Either of these groups, added to Group 3, totals to 576, (or twice 288), which is the number of days in two years of twelve Twelfths each of 24 days.

In the interpretations given in the previous Chapters our considerations were based on the eclipse cycle of 283 lunations in 192 days, and the number of lunations and days in the year did not enter into the discussions. We must now try to find, if possible, how many days there were in the year of the Idol.

At the time of the Calendar the number of days in the year was 290.4 in which took place 447.7664 lunations. As the Satellite approached nearer and nearer to the Earth it speeded up the Earth's rotation so that the number of days in the year increased the nearer it approached. Consequently, at the time of the Idol, when the Satellite was farther distant (6.1 terrestrial radii) than at the time of the Calendar (5.9 terrestrial radii) there must have been fewer days in the year. Since, however, the lunations at the time of the Idol differed only by approximately twenty-two compared with the time of the Calendar, the difference in the number of days in their respective years cannot have been great, and, from the references on the Idol to 12 Twelfths of 24 days each, the year of the Idol cannot have been less than 288 days. The true number must lie, therefore, between 288 and 290 days.

THE NUMBERS ON THE IDOL

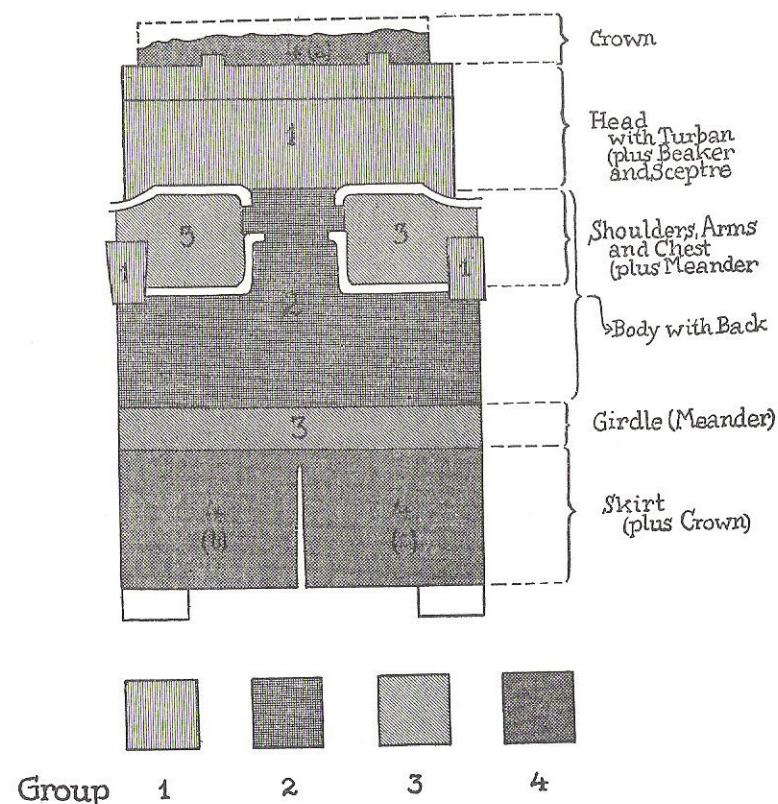


DIAGRAM 38. The Groupings of the Symbols.

	No. of Symbols			
Group 1:	274	274	274	274
Group 2:	274	274	274	274
Group 3:	302	302	302	302
Group 4	(a) 8			
	(b) 151			151
	(c) 137			137
	1146	274	576	850
			137	288
			425	

THE NUMBERS ON THE IDOL

- 274 = Revolutions in two years
- 576 = Days in two years
- 850 = Lunations in two years
- 137 = Revolutions in one year
- 288 = Days in one year
- 425 = Lunations in one year

Of the four groups of symbols mentioned above the 274 symbols of Group 2 is a definite figure, based on an undamaged part of the Idol. Taking 137 revolutions per year, let us see how many lunations this would give according to the various possible numbers of complete days in the year.

- (a) 137 revolutions, 288 days, 425 lunations (850 in two years)
- (b) 137 revolutions, 289 days, 426 lunations (852 in two years)
- (c) 137 revolutions, 290 days, 427 lunations (854 in two years)

The eclipse cycles of these are:

- (a) 35·416 lunations in 24 days, or 283·329 in 192 days
- (b) 35·377 lunations in 24 days, or 283·016 in 192 days
- (c) 35·337 lunations in 24 days, or 282·696 in 192 days

Item (c) relating to a year of 290 days shows that so far as the eclipse cycle is concerned this number of days could be accepted. But it is more than likely that between the Idol and the Calendar the speeding up of the Earth's rotation, with consequent increase in the number of days, resulted in a greater difference than 0·4 days. Also, there are no symbols on the Idol which could be assigned to two extra days over and above twelve Twelfths each of 24 days. Item (c) may, therefore, for these reasons, be excluded from our considerations.

We are thus left with the years of 288 and 289 complete days, and of these two the 289 day year gives an eclipse cycle which is nearer the ideal of 283 lunations in 192 days than the year of 288 days. In spite of this, however, it is more likely that the 288 day year was the actual one, for, if the year of the Idol did in fact consist of 289 days it can hardly be doubted that the extra day over and above the 288 days of the twelve Twelfths would have been symbolized, possibly by an isolated symbol such as a flying fish. But no symbol which could be so interpreted is to be seen, hence the conclusion is that the year of the Idol did consist of 288 days.

It is possible, of course, that the year did not consist of 288 days

THE NUMBERS ON THE IDOL

precisely. That number must relate only to complete days. But no indications can be seen on the Idol, as on the Calendar, leading to a more precise figure. It should not be overlooked, however, that there must have been a time when the year did, in fact, consist of exactly 288 days, and it may have been that the Idol symbology was devised at such a time.

The above results are, however, sufficiently conclusive to show that at the time of the Idol the year probably consisted of 288 days in which took place 137 revolutions comprising 425 lunations. In that case the period of a lunation would be 20·329 T/hours as compared with 20·353 T/hours of the ideal eclipse cycle of 283 lunations in 192 days, or 5760 T/hours. As 283 lunations at 20·329 T/hours equal 5753·223 T/hours there would be a discrepancy of 6·893 T/hours between the actual and ideal eclipse cycles, a discrepancy which would accumulate to the extent of 20·328 T/hours, or one lunation, in two years. However, the Idol does not yield precise figures as does the Calendar; it may be that the true number of lunations in a year lay between 424 1/2 and 425 and that, owing to the difficulty of symbolizing an absolutely precise figure, involving a fraction, the symbols were devised to represent the nearest whole number.

THE NUMBERS ON THE IDOL

CONSPECTUS

I. SYMBOLS

Part	Item No	Symbol Number																				Est.	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Crown	1	8 (a)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8
Turban	2	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	19(b) 19(b) 5(b) 6(b) 19(b) 9(b)
	3	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	6	6	4	I	I	.	.	.	.	.	.	.	.	.	.	.	I	I	.	I	.	.	
	7	2	14	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	8	10	4	I	I	.	.	.	.	.	.	.	.	.	.	.	.	I	I	.	I	.	
	9	13	1	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	I	I	.	.	
	10	2	14	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	11	5	4	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	I	.	
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	13	4	4	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	
			54	45	67	.	.	.	.	.	.	.	.	.	.	.	.	6	.	5	2	77	
Face	14	2	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	15	2	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	80	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	81	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
		4	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	
Neck-lace	16	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	17	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	18	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	21	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
		22	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	22	
Braids	19	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	20	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
		16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	16	
Winged Figs. Left Arm & Chest	22	9	I	.	.	I	I	.	.	.	.	.	.	.	.	.	.	I	.	I	I	.	
	23	1	8	.	.	I	I	.	.	.	.	.	.	.	.	.	.	I	.	I	.	.	
	24	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	25	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	26	16	.	.	.	I	I	.	.	.	.	.	.	.	.	.	.	I	.	I	.	.	
	28	5	4	.	.	I	I	.	.	.	.	.	.	.	.	.	.	I	.	I	I	.	
	29	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	30	3	11	.	.	I	I	.	.	.	.	.	.	.	.	.	.	I	.	I	I	.	
			46	26	.	.	5	5	.	.	.	.	.	.	.	.	.	5	.	5	3	.	95

(a) One condor only now to be seen, but the remains of brackets indicate there were originally eight condors.

(b) Each Figure on the Turban is taken to have included 19 symbols, as each of the four Figures which are intact bear 19 symbols. The available space suggests that there were originally 10 Figures on the Turban.

THE NUMBERS ON THE IDOL

Part	Item No	Symbol Number																				Est.	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Winged Figs. Right Arm & Chest	31	17					I	I										I					
	32	6																					
	33	6																					
	34	1	8				I	I										I		I			
	35	9	1				I	I										I		I			
	37	2	12				I	I										I		I			
	38	4	6				I											I		I			
	39		2																				
		45	29				45											5		4	3		95
Beaker	27	6	6																				12
Sceptre	40	10	5					I															16
Front, Upper	36	4																					4
Back	41	6																					
	42			6					I		I												
	43	6					17				I												
	44	6																					
	45																						
	46																						
	47			2				I															
	48	2						I															
	49																						
	50																						
	51	4																					
	52	4																					
	57				6									3									
	58	4		4	23		2			I			2	2	2								
	59			2																			
	60				6									3									
	66		6																				
	67		6																				
		32	12	14	35		19	2	I	I	3		8	2	2				16				147
Lowest Winged Figs.—Left	53	6																					
	54	4	12				I	2										I					
	55	2				I	I						I		9			I					
	56	14					I	I										I		I			
		26	12			I	I	2	4				I		9			I	2		I		60
Lowest Winged Figs.—Right	61	15					I	I										I		I			
	62	2				I	I						I		9			I					
	63	4	12				I	2															
	64	6																					
		27	12			I	I	2	4				I		9			I	2		I		61
Front, Lower	65	6																					6

THE NUMBERS ON THE IDOL

Part	Item No	Symbol Number																				Est.	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Meander	68	.	40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	69	6	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
	70	.	6	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
	71	6	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
	72	.	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	73	.	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	74	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	75	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	76	.	6	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
	77	6	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
	78	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		30	74	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	108
Skirt		.	.	.	.	288	(c)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	288
TOTALS		336	223	14	37	2	326	25	2	2	1	5	427	2	2	2	20	16	15	8	77		1146

(c) The disks on the Skirt probably related to the number of days in the year, of which there were probably 288. (See, however, Chapter 8, Section X.)

SUMMARY

Group 1		Group 2		Group 3		Group 4	
Turban	202	Back	147	W.F. Left Arm	95	Crown	8
Face	6	Winged Figs. Left	60	W.F. Right Arm	95	Skirt	288
Necklace	22	Winged Figs. Right	61	Front Upper	4		
Braids	16	Front Lower	6	Meander	108		296
Beaker	12						
Sceptre	16						
			274		302		
	274						
		Group 2	274	(2 × 137)			
		Group 3	302				
			576	(2 × 288)			
		Group 1	274	(2 × 137)			
			850	(2 × 425)			

THE NUMBERS ON THE IDOL

2. SIGNS, ELEMENTS AND FEATURES

Part	Item No	Signs					Elements										Features		
		1	2	3	4	T	1	2	3	4	5	6	7	8	9	T	1	2	T
Crown	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	.	8
Turban	2	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	2	.	.	5	2	.	.	.	.	.	.	.	.	I	.	.
	5	.	.	2	.	.	5	2	.	.	.	.	.	.	.	.	I	.	.
	6	.	.	2	.	.	5	2	.	.	.	.	.	.	.	.	I	.	.
	7	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	8	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	9	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	10	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	11	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	12	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
	13	.	.	2	.	.	5	2	.	.	.	.	.	.	I	.	I	.	.
		2	.	20	.	22	50	16	.	.	.	.	.	.	5	71	10	.	10
Face	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	2	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	2	.
		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	4	10
Necklace	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	17	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	18	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	21	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Braids	19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	.	.
	20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	.	.
		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	16	.	16
Winged Figs.— Left Arm & Chest	22	.	.	2	.	.	.	2	.	.	.	.	.	.	.	.	I	.	.
	23	.	.	2	.	.	.	4	2	.	.	.	.	.	I	.	I	.	.
	24	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	25	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	26	I	.	I	.	.	5	3	.	.	.	.	.	I	.	2	.	.	.
	28	.	.	2	.	.	.	2	.	.	.	.	.	.	.	.	I	.	.
	29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	30	.	.	2	.	.	3	2	.	.	.	.	.	I	.	I	I	.	.
		3	.	9	.	12	12	11	.	.	.	.	.	.	3	26	6	I	7

THE NUMBERS ON THE IDOL

Part	Item No	Signs					Elements										Features		
		I	2	3	4	T	I	2	3	4	5	6	7	8	9	T	I	2	T
Winged Figs.— Right Arm & Chest	31	I	.	I	.	.	5	3	.	.	.	.	.	.	I	.	2	.	.
	32	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	33	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	34	.	.	2	.	.	4	2	.	.	.	.	.	.	I	.	I	.	.
	35	.	.	2	.	.	.	2	.	.	.	.	.	.	.	.	I	.	.
	37	I	.	I	.	.	3	2	.	.	.	.	.	.	I	.	I	2	.
	38	.	.	2	.	.	.	2	.	.	.	.	.	.	.	.	I	.	.
	39	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		4	.	8	.	I2	I2	II	.	.	.	.	.	.	3	26	6	2	8
Beaker	27	.	.	.	.	.	.	.	4	.	.	.	2	.	.	6	.	.	.
Sceptre	40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	I
Front, Upper	36	.	.	.	.	.	.	.	.	3	.	.	.	.	.	3	.	.	.
Back	41	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	42	.	.	.	I3	.	.	.	.	.	.	.	.	.	.	.	2	.	.
	43	.	.	.	I2	.	.	.	.	.	.	.	.	.	.	.	2	.	.
	44	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	45	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	46	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	47	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
	48	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
	49	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	50	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	51	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	52	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	57	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	58	.	.	.	I8	.	.	.	.	.	.	5	2	.	.	.	2	.	.
	59	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	66	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	67	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		6	.	4	43	53	.	.	.	.	.	5	2	.	7	10	.	10	
Winged Figs. Lower Left	53	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	54	I	.	I	.	.	4	3	.	.	.	.	.	.	I	.	I	.	.
	55	.	.	.	.	.	4	3	.	.	.	.	.	.	.	.	.	.	.
	56	2	.	.	.	.	5	3	.	.	.	.	.	.	I	.	2	.	.
		4	.	I	.	5	I3	9	.	.	.	.	.	.	2	24	3	.	3
Winged Figures Lower Right	61	2	.	.	.	.	5	3	.	.	.	.	.	.	I	.	2	.	.
	62	.	.	.	.	.	4	3	.	.	.	.	.	.	.	.	.	.	.
	63	I	.	I	.	.	4	3	.	.	.	.	.	.	I	.	I	.	.
	64	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		4	.	I	.	5	I3	9	.	.	.	.	.	.	2	24	3	.	3
Front, Lower	65	.	.	.	I2	I2	.	.	.	3	.	.	.	.	.	3	2	.	2

THE NUMBERS ON THE IDOL

Part	Item No	Signs					Elements										Features		
		I	2	3	4	T	I	2	3	4	5	6	7	8	9	T	I	2	T
Meander	68	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	69	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	70	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	71	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	72	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	73	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	74	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	75	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	76	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	77	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	78	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		5	5	.	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.
TOTALS		28	5	43	55	131	100	56	4	3	3	5	2	2	15	190	71	7	78

SUMMARY

Signs	131
Elements	190
Features	78
	<u>399</u>

Chapter 10

CONCLUSION

In the preceding Chapters we have interpreted the inscriptions on the Great Idol so far as our knowledge and abilities have allowed us to do so. Our interpretation is, admittedly, not complete in all respects; there is still material left on which new students may exercise their minds. In particular there is scope for further inquiry into the Winged Figures of the Arms and Chest, and for a possible reconstruction and interpretation of the Winged Figures of the Turban. But, incomplete though our interpretation may be, yet we may claim that it is sufficiently precise to establish, beyond any doubt, the most important point of all: viz., that the Idol inscriptions relate to a year in which the Satellite made fewer revolutions round the Earth than at the time of the Calendar, and that the number of such revolutions was in all probability 425 in a year of 288 days. This is, therefore, our justification for writing this book, since the results of our inquiry have confirmed the theoretical movements of the Satellite as calculated by Hoerbiger, and confirm also the hypothetical basis on which the interpretation of the Calendar was made. The inscriptions on the Idol may now be recognized as constituting a calendar of the same kind as that of the Calendar of the Stone Gateway. It is thus the earliest calendar known to us so far and, combined with the Calendar of the Gateway, it is an eloquent witness to that strange period in the remote past of our mysterious world which was first made known through our interpretation of the latter carving.

The record on the Idol has not the comprehensiveness of that of the Calendar on the Gateway. It is more limited in its scope, and its indications, though clever and ingenious, lack the subtlety of the latter. An important, even if not very long, period of development lies between the two, during which the technique of the observation of the phenomena concerned and of their notation was greatly perfected. The Calendar on the Gateway was obviously based on the calendar on the Idol, which

CONCLUSION

in its turn must have developed from still earlier forms which no longer exist, or are as yet undiscovered, or of which only fragments now remain. On the Idol there are few or none of what on the Calendar of the Gateway can only be described as 'pointers', symbolical references deliberately given to assist in its interpretation. Generally, the Idol inscriptions give the impression of having been devised for the use of persons to whom such pointers would be superfluous, and this reinforces the opinion we came to in regard to the Calendar, that it had been devised also as a record for future generations, the descendants of those who might survive the great catastrophe of the disintegration of the Satellite.

The interpretation of the Idol shows that its devisers were not inferior to the devisers of the Calendar in their knowledge of the movements of Sun and Satellite in relation to the Earth, and that they did not incorporate so much of that knowledge on the Idol as did their successors on the Gateway may have been due to the reason given in the preceding paragraph. If the precise length of the year was a fraction over 288 days they had no more reason to show that fraction on the Idol than we have today in limiting our calendars to 365 days. That they knew of the rotundity of the Earth and the movements of Sun and Satellite below the horizon is apparent, and that they knew the extent of the obliquity is also evident.

The interpretation of the Idol gives still greater reality to the Satellite than does the Calendar alone, and enables us to gain a clearer picture of the world of that time. We can imagine the concern of the Tiahuanacan astronomers over the approach of the Satellite, an approach which may have been apparent to the eye within a single lifetime; the incessant observation of its appearances; the endeavours to perfect the means of measurement to gain a more and more precise knowledge of its rate; and the speculations and calculations resulting from those measurements. We can imagine how the Satellite must have dominated the lives of the people of that time.

To us of the present day the reality of the Satellite must also be accepted. From the evidence of the Calendar and the Idol there can be no longer any doubt of its former existence in our skies. The Theory which enabled our interpretations to be made, Hans Hoerbiger's Theory of Satellites, is proved by these interpretations to be true, even though certain revisions of his calculations are now known to be necessary. The truth of involution is also established, even if Hoerbiger's reasons for its cause may still be doubted. These are

revolutionary ideas to orthodox science, but can the evidence given by the Calendar and the Idol be disputed?

Let us compare two of Hoerbiger's calculations with the corresponding figures derived from the Idol and the Calendar.

According to Hoerbiger the Satellite, when 5.9 Earth radii distant, would have made 447 revolutions in a year of 298 days. The Calendar shows that the Satellite made 447 revolutions in a year of 290 days (error 2 1/2%).

Again, Hoerbiger calculated that at a distance of 6.1 Earth radii the Satellite would have made 419 revolutions in a year of 297.2 days. According to the Idol the Satellite would revolve round the Earth 419 times in a year of a little under 288 days (error 3%).

It is apparent that Hoerbiger over-estimated the original rotatory speed of the Earth, so that his calculations show a greater number of days per year than the Idol and the Calendar show to have been actually the case. Or he may have been mistaken in his attributing to the Satellite a certain size and/or mass.

The fact that Hoerbiger's calculations do not agree precisely with the true figures as revealed by the Idol and the Calendar in no way invalidates Hoerbiger's Theory of Satellites. It should be remembered that these calculations were made on purely theoretical assumptions, 'academically,' so to speak. It would be very surprising indeed if, in such a matter, theoretical calculations agreed absolutely with the actual figures. In any case, the above comparisons show a discrepancy of not more than 3%, which is well within the margin of error allowable in a theory based on purely hypothetical grounds.

Hoerbiger published his calculations in 1927. He died in 1931—a quarter of a century before the results of our research into the Calendar of the Gateway were published, or our work on the Idol was begun. If he had known of our findings he would certainly have reconsidered and revised his figures. And yet it is, perhaps, in some ways a good thing that Hoerbiger had no knowledge of the Tiahuanacan records. He cannot be suspected of having based his Theory on other than purely hypothetical considerations. It therefore stands as an 'absolute' one, not one fashioned on verifiable concrete facts. His general Theory is thus triumphantly vindicated by the facts which we have found and endeavoured to formulate in our books.

The time has now come, however, when Hoerbiger's Theory of Satellites requires revision in respect of its details. From the data now available from the Calendar and the Idol it may be possible for a

mathematician with an inclination for astronomy to establish with greater accuracy the movements of the Satellite at various distances from the Earth and their effect on the Earth's rotation.

If Hoerbiger's Theory is not accepted, if the Satellite of the Idol and the Calendar is not a predecessor of our present Moon, then the only possible alternative theory is that the Moon, which now revolves round the Earth between twelve and thirteen times a year, came so close to the Earth in the Long-Ago, that its apparent diameter subtended an angle of 6.8°, that is, that it approached to a distance of 4.4 Earth radii, or 17,500 miles; and that, having come so close, or even somewhat closer, it again receded from the Earth to its present distance of 60 Earth radii.

Up to a point this alternative theory—which is by no means a new one—agrees with Hoerbiger's Theory, that is, both accept the involution of a Satellite to a comparatively short distance from the Earth. Hoerbiger's Theory, however, maintains that a Satellite, having approached so close, must continue its inward involution to the critical distance of about two Earth radii, when the gravitational forces acting upon it must disrupt it and cause its material to fall on the Earth. Opponents of Hoerbiger, necessarily accepting the alternative theory, must show how the Moon, having approached so close as 17,500 miles, or even closer, could again recede.

Various theories as to the origin of the Moon, or of satellites generally, have been mooted. Though a particular theory may hold the field for a time and be generally accepted, only to be superseded when some new, more plausible, theory is evolved, none is capable of proof and each has its supporters and detractors. So, too, with Hoerbiger's Theory—were it not by a chance so rare as to be unique, that virtual proof of his Theory is forthcoming from records left by Man. That Man should have been the witness of such events as the destruction of a Satellite of our Earth and the capture of another is an idea which may strain the credulity of those to whom such catastrophic happenings are anathema, unless they took place long before the advent of *homo sapiens*. But the Idol and the Calendar of Tiahuanaco are records left by Man. They cannot be explained, except on the basis of Hoerbiger's Theory, which postulates the destruction and capture of satellites with accompanying catastrophic effects on the Earth and on the men inhabiting the Earth. But such catastrophes need cause no consternation; they do not contravene the idea of orderly progress. The former Satellite was destroyed and its successor captured, not from any disobedience

to the natural laws of the Universe, but in conformity with such laws.

Man indeed witnessed such events and, as might be expected, they left such an impress upon his mind that their memory has survived to the present day, not literally, but in the form of Myth. Through how many generations this transformed racial memory has persisted is still a matter of doubt, but from the considerations in the following paragraphs the number may be placed in the region of a thousand—a large, but certainly not an impossible number.

Since the publication of our book, *The Calendar of Tiahuanaco*, the question of ascertaining the date of the Calendar has not been neglected and our present knowledge on this interesting matter may now be reviewed in the light of the interpretation of the Idol given in this work.

From the many similarities in the symbology of the Idol and the Calendar it may be surmised that the period of time which elapsed between these two monuments was not *very* long, that is, it is probably to be reckoned in hundreds (perhaps not even many) rather than in thousands of years.¹ Nor can the interval have been *very* short; sufficient time must have elapsed to allow of the very much greater skill and technique in carving to have been developed. Astronomy and/or archaeology may one day be able to give the length of the interval with some degree of certainty, but a precise figure is not essential for our present argument, to illustrate which we will take the period of a hundred years as the extent of the Idol–Calendar interval.

At the time of the Calendar the distance of the Satellite was 5.9 Earth radii (ER) and at the time of the Idol it was 6.1 ER. These are the distances calculated by Hoerbiger according to the number of revolutions of the Satellite in a year. Taking the radius of the Earth as 4,000 miles, in round figures, the Satellite thus approached in the interval between Idol and Calendar by 800 miles, an average of 8 miles a year. The Satellite, approaching closer and closer, eventually reached the critical distance of about 2 ER, when the gravitational forces of the Earth caused it to disintegrate. Between the date of the Idol and the time of the destruction of the Satellite it decreased its distance from the Earth by 4 ER, or 16,000 miles. At an average of 8 miles a year it would

¹ From the consideration of their general style Wendell Bennett formed the opinion that the Great Idol and the Calendar were 'manifestations of the same cultural period' and that the latter 'may be a slightly later phase' than the former. He adds: 'There is no indication of any great difference in time between the two styles.'

have covered this distance in 2,000 years. But its rate of approach was certainly not uniform. At the time of its destruction the Satellite revolved round the Earth more than twice the number of times as when its distance was 6 ER, consequently its rate of involution would be more than twice as great at the former as at the latter distance. The 2,000 years based on the average must therefore have been considerably less, perhaps no more than, say, 1,400, or 1,500 years.

The time interval between the Idol and the Calendar, in combination with the distance of the Satellite at various stages, provides an indication of the interval between the Classical Period of Tiahuanaco and the disintegration of the Satellite. We thus have the following periods according to the time allotted to the interval between the Idol and the Calendar.

<i>Idol-Calendar Interval</i>	<i>Period from Classical Tiahuanaco to the Disintegration of the Satellite</i>
100 years	1500 years
200 years	3000 years
300 years	4500 years

As stated above, the distance of the Satellite at the time of the Calendar was 5.9 ER and at the time of the Idol it was 6.1 ER. According to the Hoerbiger Theory: when the Satellite, in its approach nearer and nearer to the Earth, had reached a distance of perhaps 6.7 ER, the waters of the oceans, already drawn from the higher latitudes to the equatorial and tropical regions by the Satellite's powerful gravitational attraction, had, consequent on its rapid revolution, formed a girdle tide round the Earth. By the time the Satellite had approached to a distance of about 6 ER the girdle tide had reached such a height that Tiahuanaco, which is now 12,500 feet above sea level, was situated on its shores, i.e., at or about the then sea level. The time when the Idol and the Calendar were devised is therefore related to the period of the girdle tide. When, in the course of time, the disintegration of the Satellite released the girdle tide from its gravitational attraction, the consequent flowing off of the waters which formed the oceans of the equatorial regions, 'raised' Tiahuanaco to its present elevated position.

Simultaneously with the formation of the (water) girdle tide the Satellite drew the atmosphere towards the equatorial regions to form an atmospheric girdle tide, the effects of which on the Earth may be considered in a brief review of the Hoerbiger Theory in relation to the Ice Ages. This matter has been dealt with in a previous work by

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Bellamy, viz., *A Life History of our Earth*, and only the main outlines need be mentioned here.

According to Hoerbiger, the Ice Ages were due to the periodical 'anchorings' of the Satellite over various parts of the Earth, that is, the period of the Satellite's revolution round the Earth coincided with the period of the Earth's rotation. During such an anchoring the atmosphere was drawn up in an air hill (corresponding to the similar water hill) immediately below the anchored Satellite. This formed the 'zenithal' air hill. On the opposite side of the globe a similar 'nadiral' air hill was formed. Outside the area of these air hills the air blanket of the Earth was attenuated, with the result that the spatial cold struck through to the terrestrial surface causing severe glaciation. When, after a long period, the Satellite moved on from one anchorage to another the air hills also moved on, so that those parts of the Earth which were under glaciation now came under the area of the air hills to undergo an 'interglacial' period, and those parts which had been under the air hills came within an area of depleted atmosphere and in their turn suffered severe glaciation. The various anchorings of the Satellite correspond to the geological periods which are termed the *Guenz*, *Mindel* and *Riss* glaciations.

In the course of time the Earth could no longer hold the Satellite to an anchorage. The Satellite broke free and circled the Earth with increasing velocity, its period of revolution becoming increasingly shorter than the period of the Earth's rotation. The air hills followed the Satellite and eventually formed an atmospheric girdle tide round the Earth. Most of the atmosphere being drawn into this equatorial air girdle, the polar regions and even regions for a considerable distance from the poles were depleted of air and all those parts suffered glaciation simultaneously. This glaciation was that termed the *Wuerm*.

As time went on the Satellite approached nearer and nearer until it became disrupted and its material fell to the Earth. Released from the gravitational attraction of the Satellite the atmosphere left the equatorial regions and spread evenly over the whole Earth. The glaciation of the *Wuerm* period thus came to an end: the retreat of the ice began.

Such, very briefly and in broad outline, is the Hoerbiger explanation of the Ice Ages, an explanation which, in view of the evidence, furnished by the Tiahuanaco monuments, as to the former existence of the Satellite, must be accorded a full measure of probability. Other factors no doubt also had their effects, such as, for instance, changes in the eccentricity of the Earth's orbit and in the obliquity of the ecliptic, but

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for our present purpose of endeavouring to establish a date for Tiahuanaco it is unnecessary to enter into the matter in further detail.

We have seen: (a) that the Idol-Calendar interval combined with the distance of the Satellite at the time of these monuments indicates the period of time between them and the destruction of the Satellite, (b) that when the Idol and the Calendar were devised Tiahuanaco was situated on the shores of the girdle tide, (c) that the girdle tide dispersed when the Satellite disintegrated, and (d) that the last glaciation of the Ice Age coincided with the period of the girdle tide and ended with its dispersal. It is apparent that if we knew the date when the ice began to retreat we should know also the approximate date of the Tiahuanaco monuments, which would be up to 3,500 years prior to that date. The date of the beginning of the retreat of the ice, however, is not known precisely, but geologists have established a tentative date which they regard as sufficiently reliable for the purposes of palaeoclimatology and prehistoric archaeology. This date may be put in round figures as 22,000 years ago.¹ According to our considerations, therefore, the Tiahuanaco monuments date from some 22,500 to 25,500 years ago. But before accepting this let us consider some further matters.

The Calendar, by its indication of the coincidence (or near coincidence) of the apse and equinoctial lines, furnishes certain dates which may be extended backwards by intervals of 10,500 years, since the apse-equinoctial line cycle has a duration of 21,000 years. The most recent such date is some 6,000 years ago when the Vernal Equinox (N. Lat.) coincided with the Sun in perigee. This date, however, may be rejected as being within the period of recorded history; the conditions appertaining at the time of the Calendar cannot possibly have obtained at so recent a date.

The next prior date indicated by the Calendar is some 16,500 years ago, when the Autumnal Equinox (N. Lat.) coincided with the Sun in perigee. That this can be the date of the Calendar is doubtful. According to the Hoerbiger Theory the Moon was captured at a date which various evidences point to as some 11,500 to 13,500 years ago. But—if the Calendar were dated from 16,500 years ago, and if the period between the Idol and the Calendar was 100 years, then the period between the destruction of the Satellite and the capture of the Moon, that is, the Asatellitic Age, would be only 1,500 to 3,500 years, which seems much too short. It would be shorter still if the Idol-Calendar period were to be increased. Also, this date cannot be reconciled with

¹ F. E. Zeuner, *Dating the Past* (1950).

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the date attributed by geologists to the beginning of the retreat of the ice, unless that date were to be drastically advanced. On the whole, the date of 16,500 years ago is very unlikely to be that of the Calendar.

Going back a full apse-equinoctial line cycle of 21,000 years from 6,000 years ago, or 10,500 years prior to 16,500 years ago, we reach the date of 27,000 years ago. Let us see what support this date finds from consideration of the geological date and the Idol-Calendar interval.

If the Idol-Calendar interval was 100 years (as assumed above to illustrate our argument) the period from the Calendar to the destruction of the Satellite would be 1,500 years, or 25,500 years ago (27,000 - 1,500), a difference of 3,500 years from the geological date of 22,000 years ago. If, however, the Idol-Calendar interval was 200 years, then the period from the Calendar to the breakdown of the Satellite would be 3,000 years, or 24,000 years ago (27,000 - 3,000), a difference of 2,000 years from the geological date.

Again, if the Idol-Calendar interval is taken as 300 years, the period to the breakdown would be 4,500 years. This leaves 27,000 - 4,500 = 22,500 years from the breakdown to the present, which virtually agrees with the geological date of 22,000 years ago.

These three cases are summarized in the following Table:

Idol- Calendar Interval	Disintegration of Satellite	Difference from geological date of 22,000 years ago	Period of Asatellitic Age
100 years	27000-1500=25500 years ago	3500 years	12000-14000 years
200 years	27000-3000=24000 years ago	2000 years	10500-12500 years
300 years	27000-4500=22500 years ago	500 years	9000-11000 years

One of the unsolved problems raised by the Hoerbiger Theory of Satellites is: How long after the breakdown of the Satellite under gravitational stress would it take for the debris in its entirety to descend to the Earth, leaving the clear skies of the present day? For a certain period of time the shattered Satellite must have formed a ring round the Earth, similar to the rings of Saturn. It is generally conceded that Saturn's rings were formed from material derived from a broken-down former satellite of that planet (possibly, as indicated by the clear separation of the material into two rings by Cassini's division, even of two satellites) but nothing is known as to when that event may have occurred. It may, for all we know, have happened at a comparatively

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recent date. The planet Saturn was known to the ancient world, but as the rings are not visible to the naked eye they have been known only for about three centuries. They were first clearly seen and described by Huygens in 1656, though Galileo, observing Saturn through his newly invented telescope, had, as early as 1610, noticed two appendages to that planet which were in fact the rings, but which his telescope was incapable of defining clearly.

Until recent times observations of Saturn's rings were made with telescopes of insufficient power to show much detail. Observations made with modern instruments, however, have revealed the occasional appearance of short-lived bright 'spots' and 'streaks' in the equatorial and tropical zone of Saturn from which it seems evident that material descends from the innermost 'crape ring'; also, the rotation of this zone, which is faster than that of the adjoining zones, points to its being urged on through the impact of downrushing material which is too small to be recognized, but which makes the equatorial zone permanently brighter. The amount of material descending from the rings, however, must have been insufficient to make any change in their density as seen from the Earth during such time as they have been observed with high-powered telescopes. Thus, so far, the rings of Saturn do not help to throw any light upon the problem as to the period of time necessary for the descent of the debris of the Satellite with which we are concerned.

On the figures in the above Table, the period of the Asatellitic Age, that is, the period between the disintegration of the Satellite and the capture of the planet Luna as the Moon, lies between 9,000 and 14,000 years. Even 9,000 years is a very long time, sufficient probably for the descent of a very considerable part of the satellitic debris. Whether all that debris had descended by the time of the capture of the Moon is not known. If it had not, then it must have finally descended some time between the capture of the Moon and the earliest records of our own times. The period for the descent of the debris might therefore extend considerably over 9,000 years, perhaps even for another 4,000 years, making 13,000 years in all. And, if we take the upper limit of 14,000 years for the Asatellitic Age, a period of 18,000 years would be available for the clearance of the debris from the skies.

All that can be said at present on this matter, therefore, is that with a date of 27,000 years ago for the Calendar, and a date of 22,500 to 25,500 years ago for the disintegration of the Satellite, the very considerable period of 13,000 to 18,000 years would be available for the satellitic debris to have descended in its entirety to the Earth.

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Admittedly, our arguments, as given above, are based on several factors which in our present state of knowledge can only be regarded as approximations. However, taking the Idol-Calendar interval up to 300 years as a reasonable limit, and allowing considerable latitude in the extent of the period between the date of the Calendar and the disintegration of the Satellite; allowing also for a margin of error in the date attributed by geologists to the beginning of the retreat of the ice, and some degree of error in the distances of the Satellite at the times of the Idol and the Calendar: none of these factors, whatever the precise figures may eventually be established at, is likely to be inconsistent with the date of 27,000 years ago derived from the indication on the Calendar of the apse-equinoctial line coincidence. However, let us make it clear that we do not give this date as final. We are merely seeking the solution of a difficult problem in the light of available evidence. Our considerations are designed rather to show the lines on which a final solution may eventually be found than to establish a date with certainty, and if indisputable objections against this date are forthcoming we shall naturally attempt to consider the matter afresh. For the present, however, we may, on the above considerations, accept tentatively a date of 27,000 years ago as that of the Calendar and of the Classical Period of Tiahuanaco.

Archaeologists generally may find such a date difficult, if not impossible, to accept, since their chronologies for South American cultures attribute the Classical Period of Tiahuanaco to about A.D. 600. It should be mentioned, however, that Posnansky, whose knowledge of the antiquities of Tiahuanaco was unsurpassed, had no difficulty in accepting an extremely great age for Tiahuanaco. His conclusions were not based on the Hoerbiger Theory, which at first he did not know and which, when he was eventually made acquainted with it, he indeed rejected—if for no other reason than from a predisposition which did not allow him to abandon his own theories to which he had devoted a good part of his lifetime. He believed, on various considerations, including certain astronomical calculations made by himself and by a team of German astronomers, that Tiahuanaco dated from about 15,000 B.C. Although this date was arrived at on grounds which, in the light of our interpretations of the Calendar and the Great Idol, and from our considerations in respect of the orientation, lay-out and dimensions of the Temple of Kalasasaya, must be regarded as erroneous, it shows, nevertheless, how great an antiquity Posnansky was prepared to accept for Tiahuanaco, and how far removed he was from his archaeological

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contemporaries in his appraisal of the chronology of the Tiahuanaco culture.

So remote a date as 27,000 years ago is far beyond the date of the earliest civilizations recognized by most archaeologists, who attribute the rise of man to civilization to an epoch of some 6,000 years before the present (e.g., Egypt; Sumeria). To throw back that date by some 20,000 years is so revolutionary an idea that one cannot be surprised if the conservative mind rejects it as preposterous. But an open mind on these matters is desirable. The origin of man, his rise to civilization, the term of his existence as *homo sapiens*, are not such cut and dried facts as many of the text books would have us believe. Civilized man may well be of incomparably greater antiquity than is generally accepted. In fact, the world at the time of Tiahuanaco may well have been, to all intents and purposes, rather similar to our own, in which tribes that virtually still live in the Stone Age and that actually are several ten thousands of years 'out of date' are co-existent with peoples who are harnessing the atom and attempt to build interplanetary rocket ships. So, if now fresh evidence respecting the rise of man to a civilized state, such as is provided by the Idol and the Calendar of Tiahuanaco, definitely points to such great antiquity it should not be rejected simply because it does not fit into current conceptions of the origin of civilization. Rather, it should be examined on its merits, and if found valid, the current theories should be reviewed in the light of the new evidence. Only in that way the truth regarding Man's early history can eventually be established.

The evidence furnished by the Idol and the Calendar of Tiahuanaco, with its implication of a vastly extended period for the rise of Man to civilization, or at least of the occasional capability of Man to rise, now and then, here and there in the world, to great heights of knowledge and achievement, opens up entirely new fields of magnificent scope for those who are engaged in exploring the past. It gives a completely new perspective in which many facts and discoveries, at present isolated and disconnected, may find their proper place. Some, perhaps many, of the problems which occupy the minds of archaeologists today, and which remain unsolved, may, possibly, find their solution within the framework of a new chronology based on Tiahuanaco. For, it should be remembered, the conditions obtaining at the time of the floruit of Tiahuanaco and its subsequent destruction were not confined to the area of the High Andes of South America: they were world-wide. The girdle tide encircled the Earth, and the disintegration of the Satellite was a catastrophe which affected all parts of the world.

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It is apparent, however, that although the history of civilization must go back very much farther than has hitherto been thought possible, there is no question of continuity between the civilization of Tiahuanaco and the civilizations of our own era. The disruption of the Satellite must have been a catastrophe of such devastating effect that all vestiges of civilization must have vanished from the face of the Earth. The naked life alone was probably all that could be saved by any lucky survivors of the cataclysm; that, and memories of the lost world, handed on in 'myths'. For a very long time, possibly for thousands of years, the descendants of Surviving Man must have remained reduced to a primitive state. But eventually, as the millennia passed, as generation succeeded generation, it is not unlikely, or, at least, not impossible, that civilization was again attained, during the tranquil Asatellitic Age which succeeded the destruction of the Satellite. If such was indeed the case, no traces of that newly-attained civilization remain—except the Legend of Atlantis.

We need not enter here into the much-debated question whether Atlantis did, or did not, exist. We merely wish to make the point that there is no reason why a civilization—call it Atlantis, or what you will—could not have existed during the Asatellitic Age, when, as we now know, a civilization flourished at Tiahuanaco many thousands of years previously.

If Atlantis did exist, then it, too, met its doom through the agency of a Satellite—when the planet Luna, trespassing on the terrestrial orbit, came within the gravitational attraction of the Earth, and was captured as our Moon. The new Satellite at its approach must have suddenly drawn great masses of water from the higher latitudes to the tropical or subtropical zone where Atlantis is supposed to have been situated, and thus that civilization could well have been destroyed 'in a single day and night', as the story which Plato has handed down to us relates.

Again Man was reduced to a primitive state, and once again, after the lapse of long periods of time, he rose to civilization—that which began in Egypt and Sumeria and of which our own culture is but the latest development.

In very broad outline, therefore, we may distinguish three main periods, separated by two great catastrophes, during which Man attained to a high level of culture:

The First Civilization—Tiahuanaco: Beginnings of unknown origin and

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date, but reaching its apogee possibly 27,000 years ago and ending with the destruction of the Satellite of that aeon at a date which may be put down tentatively at about 22,000 years ago.

The Second Civilization—Atlantis (?): Developed during the Asatellitic Age from 22,000 to 13,500–11,500 years ago. Ended when the Moon was captured.

The Third Civilization—That of our own era: Earliest known development in Egypt and Sumeria 6,000–7,000 years ago.

This conception of Man's antiquity as a civilized being is implicit in the Tiahuanacan records and in the Hoerbiger Theory which alone can give meaning to those records. At present, no more than a very general outline can be seen. Much remains to be done, many sciences must contribute their knowledge, before that outline can be filled in.



BIBLIOGRAPHY

- H. S. Bellamy: *Moons, Myths and Man* (Second Edition). 1949.
Built Before the Flood (Second Edition). 1947.
A Life History of Our Earth. 1951.
- E. Kiss: *Das Sonnentor von Tihuanaku*. 1937.
- A. Posnansky: *Tihuanacu, the Cradle of American Man*. 1945.
- H. Hoerbiger and Ph. Fauth: *Glazialkosmogonie*. 1913.
- H. S. Bellamy and P. Allan: *The Calendar of Tiahuanaco*. 1956.
- W. C. Bennett: *Excavations at Tiahuanaco* (Anthropological Papers of the American Museum of Natural History, Vol. XXXIV, Part III). 1934.

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