

THE HARP AS A COSMIC SYMBOL

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On November 22, 1922, Rudhyar delivered an illuminating lecture at a meeting of the New York City Chapter of the N. A. of H., Inc. At the end of the lecture the members of the Chapter unanimously expressed their desire of having Rudhyar write an article for Eolian Review on the subject of his lecture. Rudhyar having very kindly consented, we are happy to be in a position to give all our members the opportunity of becoming acquainted with Rudhyar's views.

- The Editor, Eolian Review

There was a time when musical instruments were considered as tabernacles into which gods descended as the bodies of some semi-spiritual entities who truly ensouled them and whose life throbbed within the sonorous waves emanating from the vibrating matter. The choice of the materials used in the construction of the instrument had a symbolic influence on the type of music performed. Whether animal, vegetable or mineral elements predominated in the instrument meant a great deal to men who could see in everything inner correspondences, either spiritual or astrological or formal. This time has not entirely passed. Throughout Asia the musicians bow before their instruments in silent reverence before letting them vibrate. The god within must be worshipped before being awakened from his cosmic silence; and Asiatics see still "Devas" — gods — ensouling the instruments.

The shape of the instruments in many instances had, and still has, a great occult significance, and the evolution of such shapes throughout the ages reveals very much of the inner history of man. Our western civilization scorns such feelings and such research. It sees only the dead material aspect of music, a vibration of the air molecules; it only calculates the coldly arithmetical value of sound and thus builds scales that are as much alive as yardsticks and that express almost as much of the inner life of man and nature as these useful implements do. People learn to play instruments for no special reason; they would hardly feel that the motive which impelled them to choose such or such an instrument was born out of an inner analogy of essence linking both the soul of the musician and the soul manifesting symbolically through the instrument. Indeed they would smile at the very idea. Yet everyone knows that there are very definite affinities between racial types and instrumental families. French musicians excel at the woodwinds. Germans are proud of their brass players. Russian Jews manifest themselves often as excellent violinists. Poland and Hungary have given the greatest pianists. Hungarians loved the cymbalon before Liszt appeared, transfiguring the piano, incarnating for a time its very soul. All these facts are indications of a very occult relationship existing between human types and instruments. They might yield many absorbing truths to the student of this special branch of musical occultism, but we will not go into a search which would lead us so far.

The harp, as all other instruments and perhaps even more than most of them, has its occult significance. It is one of the oldest instruments and can be found in various shapes in all temple decorations of all ages. The Irish mythology is especially rich in legends and symbols attached to the harp. The harp, with its 7 strings, represented matter in its sevenfold stages, the atom, with its 7 spirals. And when the universe was to be formed, the Creator plucked one by one the strings of the cosmic harp which was encompassing all the vastness of primeval space, and the vibrations that thus radiated, precipitated the worlds. Then the Creator uttered the Great Name and all Its letters became gods that took possession of the 7 spheres of matter. That is perhaps why we begin nearly always with a chord on the harp before beginning a song. Such allegories can be found in all religions under various garbs, and the harp, the wind-pipes and some kinds of string instruments are always found concurring to make all primitive orchestras.

The primeval harp, however, differed greatly from the present one. It was similar in every respect to a bow; and it is easy to imagine, as I wrote in a previous article, that the accidental use of a bow and the discovery of the tone produced by the plucked string is the origin of this type of music. Such a theory is at any rate pleasing to the ordinary materialistic historian who indulgently and learnedly theorizes about cave-men and the like. It is in opposition, however, to **all** religious traditions, strangely identical in all races, and **all** of which give to music and to instruments a divine origin. That Grand Intelligences from higher spheres should have taught infant humanity and presented it with the gift of a kind of musical knowledge seems to us not an extraordinary supposition at all. If children need educators, why should humanity as a whole not also need and find great educators when in the prime of its youth? There is evidently nothing absurd about the theory which, furthermore, has the unanimous corroboration of tradition wherever found.

However that may be, the fact is that the primeval harp is shaped as a bow (fig. 1a). Accentuate somewhat the shape and you have a half-circumference and its diameter (fig. 1).

Now the esoteric and metaphysical significance of such a figure is apparent. The circle represents space. The half-circle indicates that manifestation has occurred. The diameter is matter, the half-circumference is as yet undifferentiated spirit. The harpist identifies himself with the circumference which his body follows in its curvature. The hands — symbols of creative power, of the demiurgic faculty — rouse matter into life and vibration. Harp and harpist reproduce the drama of the Creation when the Creator caused the sevenfold matter to vibrate, fashioning the worlds with His spiritual organs of creation, of which hands are the anthropomorphic symbols. This type of harp is found in early Egypt, in America, in Asia, everywhere. If, however, we come to the Middle Ages we find evolved a new harp whose shape is **radically** different. I emphasize the word "radically" because the change is indeed a momentous one. **The harp had been inverted.** Something tremendous must have occurred in music and in man so as to bring about the need for such a revolution. In my future book, **The Rediscovery of Music**,⁽¹⁾ the meaning of such a human revolution will be fully disclosed; let us indicate here only the idea according to which such a revolution would coincide with the coming of Gautama, the Buddha and of Jesus, the Christ. The great name which symbolizes such a revolution in music is the name of Pythagoras, a near contemporary of the Buddha (about 600 B.C.). We cannot study here his message, so little understood as yet. Enough to say that music was probably radically transformed at such a time though the transformation was but slowly realized and accepted, without its inner meaning being understood.

However, limiting ourselves to the study of the morphology of the harp, we shall easily grasp the magnitude of the change when we consider that the hands of the harpist are no longer plucking the diameter of the circle — the matter-aspect — but the side of a rectangular triangle whose hypotenuse coincides with the diameter of old.

Figures 1 and 1a represent the ancient idea of the harp. Then figure 2 shows how the half circumference has been modified so as to become the two arms of a 90° angle; in other words, how the circumference has been **quadratured** — the dream of so many mathematicians!

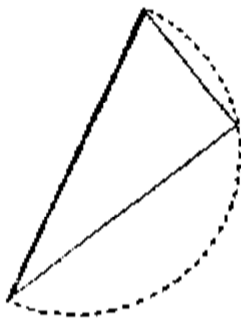


Fig. 2.



Fig. 2a



Fig. 1



Fig. 1a

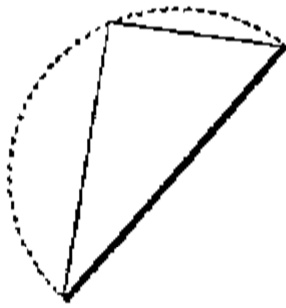


Fig. 3



Fig. 3a

Figures 3 and 3a represent the modern harp in its essential shape and a comparison between fig.2 and fig. 3 shows plainly how the general form of the harp has become inverted. **What constituted the string of old has now become the sounding board**, the diameter has become the hypotenuse of the triangle. The harp appears in some medieval illustrations exactly in its triangular shape, as in fig. III, and the curvature of the elbow, made only for a practical purpose, is of little value theoretically, though even it may be interpreted symbolically. Considering the harp as a rectangular triangle, we will understand the symbology of its shape if we remember an old theorem which states that the square of the hypotenuse is equal to the sum of the squares of the two other sides of the triangle. Now such a theorem was known not only to Pythagoras with whom it is often associated hut also to the old Chinese philosophers who probably antedated him. They reckon thus, giving the following proportions to the 3 sides of the triangle:

$$5^2=4^2+3^2$$

which makes: 25=16+9

Now according to the ancient arithmosophy 3 stands for the Deity, 4 for Man — in its present personal stage — and 5 for Destiny. 5 is the half of 10. When you think that 10 may be written thus \ominus or \odot you will see that 5 truly represents the diameter of the primeval harp and the sounding board of the modern one. 5 represents matter in its cosmic state, therefore the relationship of the Manifest to the Unmanifest, consequently the law of Cause and Effect, Karma or Destiny.

The occult idea expressed in the formula is that the power of man when co-operating with the power of the inner Deity can counteract Fate, that is, put an end to the chain of Cause and Effect. Now the entire doctrine of Buddha hinges upon the idea that the chain of Cause and Effect must be transcended and that the man and the god within man may reach Nirvana, that is the **perfect circle free from any diametral influence**. This means, translated in harpistic terminology, that if your attack of the string is good and your string well tuned, the tone will resound perfectly through the sounding board and be a **round tone**. For the elbow of the harp represents the **tuning principle** of the strings which stand

for man — the manifold human being which we all are, consciously or not. In other words, the various natures of man are all tuned by or within his **god within**, his deific principle. And if this deific principle is represented in the harp by an elbow, by a curve, it is because the Deity is essentially symbolized by a double curve (sinusoid) by an S, such figure expressing the idea of the cyclically of all essences, of all developments. God, as the absolute essence is a circle; gods as manifested essences are sinusoids which represent a broken, open circle.

Now all this will undoubtedly appear childish to many people, unaccustomed as westerners are to deal with symbols and esoteric concepts. Yet so many coincidences are difficult to put under the responsibility of the mysterious

power of chance, why not accept such a theory as an abstract speculation, as plausible as any empirical explanation which merely laughs at the very idea of finding a metaphysical meaning in the shape of a musical instrument?

At any rate the fact is that, apparently, about the beginning of the Christian Era(2) the form of harps altered and the triangular shape took the place of the bow-like structure. It may be that this happened because of repeated experiments that proved the excellence of the new shape; however it is a difficult hypothesis to accept, as it seems evident that the big Egyptian harp had a much more beautiful tone and a much greater tone-power than the strange triangular little harp which we see reproduced on old medieval manuscripts or carved on the walls of the churches. Why then would the change have been made, if only for the effect on the senses? On the other hand, such a transformation is easy to explain when we parallel it with the inner change which overtook humanity during the momentous period extending from 500 B. C. to 300 A. D. This period initiated by the nearly simultaneous coming of a host of great spiritual teachers (Buddha, Lao-Tzu, the last Zarathustra, Pythagoras, etc.) marks the birth of man as a free, fully self-energized, spiritual entity. Not that all men became so — alas! we are far from it as yet — but the great collective cycle offering such an opportunity for the "finding of Christ," of the god within each of us, was then ushered in. And this meant a general reversal of the spiritually human magnetism.

Human beings in the past were but children, either most remarkable and intuitive, or stupid. They were led and ruled by Intelligences belonging to higher spheres of life, by souls who were voluntarily incarnated in order to guide and educate infant humanity. The collective attitude of man was the religious, devotional, oftentimes slavish attitude. Man did not have, collectively speaking, his destiny in his control. Humanity was still **descending into matter** and was generating Karma or causes which now are coming upon us massively as fateful results. It was the involutory period of man's collective soul, building slowly its material universe. So we see the harpist plucking the strings of the bow-like harp, the strings of which symbolized, at that time, matter. The harpist, the musician-soul, was building his world of tone, his musical universe.

Then comes the moment of **Emancipation**. Child-humanity becomes a **potential** man. (It will take hundreds of millennia ere it becomes as a whole and actual man.) It becomes self-reliant and self-energized — potentially always.

The harp therefore changes in its morphology so as to symbolize the new life, the NEW SPIRITUAL RHYTHM of mankind. Mankind is no more a soul descending into matter, **but evolving out of the forms and relations which it has previously generated** in order to gain experience thereby. The harpist, the musician-soul, has no more to manipulate matter, that is cosmic matter, **but to arouse into life his individual natures**. Man, as a complex being, has to be awakened, so as to respond to all the vibrations which are determined for him in his inner nature, his inner godhood; such a **determination** corresponds to the tuning of the strings, the **tuning-board** (elbow) figuring the archetypal series of the true proportions embodied by the vibrating strings, viz., man-perfect, man-god.

Nowadays when sounds are produced by the harpist, these sounds no longer express the vibration of the cosmic matter **outside** of man but the vibrations of a complex manhood expressing itself **through** matter. Matter has become an instrument through which the soul sings its harmonies. **Matter has become the sounding-board of the manifold human self**. What a deep truth is made manifest in the very shape of the harp! and how few are the harpists who understand what they do when playing and who truly commune with the soul of their instrument!

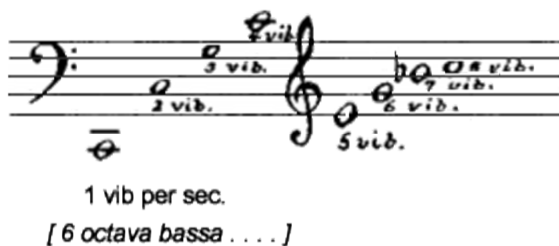
The **occult meaning of the pedals** reveals still more to those who are familiar with the inner significance of the hands and feet — the two sense-organs which are two-fold. Enough to say that the chromatic scale is in fact the combination of the major and the minor scale, and that it is **the pedals that make of the harp a chromatic instrument**. In other words, hands alone give but the major mode; feet are needed to produce the minor. The chromatic mode on the harp is therefore a **14 tone mode**. It is the only true chromatic mode, that is the synthetic mode, culmination of 900 years of modal development in Europe, from Guido d'Arezzo to Debussy.(3) Of course, it is only theoretically so at present, but it may also become practically true some day, when musicians will begin to understand what the **synthetic mode** is and how different it is from the so-called Duodecuple scale of a Schönberg.(4)

The great spiritual and musical revolution of the Sixth Century B. C. not only reversed the structure of the harp but it produced a fundamental change in the musical tonal-direction. Music in ancient Aryan [Aryan being the ancient culture of Iran and Northern India] and Greek times was pre-eminently, if not exclusively, a descending force, an involutory element — thus incarnating the tendencies of the human soul in its matterward motion. Scales, tetrachords (in Greek music) were built and perhaps sung from the high to the low register. It was **descending music**.

Pythagoras is, we contend, the first one who half revealed the principle of the harmonics of a fundamental. Not that harmonics were unknown — perhaps — but they apparently did not constitute the basis of music. The subject cannot be treated fully here,

and we may either take such an assertion as granted or reject it. At any rate, when we come to medieval times we see that all traces of the **descending scales** have vanished, though the Greek tetra-chordal system is still confusedly imitated. Guido d'Arezzo and his contemporaries (XIth Century) codify the new hexachordal system which supplants then definitively the Greek system, and a few centuries later the theory of the harmonics become fully recognized when Jean-Philippe Rameau, in 1722, uses it as a complete basis for his musical theories which reveal the foundations of European music. Strange and incomplete as some of his explanations are, yet he it was who truly and definitely gave to western music its philosophical and natural background. We contend that he only repeated, unconsciously or not, a few of the fundamental ideas put forth secretly by Pythagoras in his school where music was the basis of the entire system of education.

The principle of harmonic theory — which is now a recognized fact, variously interpreted as this fact may be — is that if a tone C is produced, the vibratory rate of which corresponds to the number 1, it will be accompanied by a series of tones whose frequencies will be 2, 3, 4, 5, 6, 7, 8, 9, 10, etc. Such low tones are not heard, but the law works with all tones, low or high.



It means therefore that when a string of the harp is plucked, the sound which vibrates through the sounding-board is a very complex one, extending almost indefinitely toward the higher sonorous realms. Now if a second tone is produced it will also vibrate forth its whole series of harmonics. In other words, disconnected as the fundamentals, the actually sounded notes may be, yet their harmonics are nearly always interblending, thus forming a continuous mass of high sounds, ebbing ceaselessly as a big sonal ocean. The less muffled the sounds, the less staccato the tones, the more manifest this sonal ocean. Now when produced by a flute tones merge immediately one into the other. The tonal continuity is of a linear type, not of a voluminal type: it is one-dimensional and not two or three-dimensional. **Seas of sound** can only be formed where there is a sounding-board which prolongs vibrations until they reach a state of collective oneness — and especially when chords may be produced, increasing further the roaring and power of the sea of sound. What is this sea of sound? **The soul and three-dimensional reality of the mode.**

A true natural mode is a definite type of tonal relationship embodying relatively simple numerical proportions. If we take the series of harmonics encompassed by the harmonics 22 and 44 we get a scale of 22 notes within the octave, whatever the fundamental may be. These tones are all related and are, as it were, **simple numbers embodied in sonorous**

matter. If 7 tones are chosen among these 22 and the 7 used exclusively throughout a musical work, the relation expressed by the selection of these 7 tones will constitute the **modality** of the work. Now let us imagine that these 7 tones correspond to the vibrations 22, 24, 30, 34, 38, 40, 42, each of these 7 tones will generate a series of harmonics. Should these 7 tones be played together by 7 trumpets, we would have, as it were, 7 series of sounds. Now several of the harmonics of these series would coincide. They would therefore be **reinforced**. In other words the "sea of sound" produced by the blending of these harmonics would not be homogeneous but it would present a certain INNER RHYTHM. The reinforced harmonics would appear as **centers of tonal pression**. A form would outline itself. This form is the archetypal reality of the mode. Each mode possesses a definite abstract morphology. It corresponds to the Augoeides of the Neo-Platonists, the Archetypal Form of each individual man, which form persists incarnation after incarnation.

If the sounding-board resonates well the Archetypal Form of the mode becomes more accentuated. In a like manner, if the material body of a man (we remember that the sounding-board represents matter) is subtle and responsive to the inner vibration of the soul, then the features of the man will somewhat show forth the Archetypal Form of his innermost self, of his "Augoeides". The man becomes a TYPE.

Understanding thus the inner reality of a mode, we shall not be so surprised when hearing that modes are **living entities, half-gods**, in the eyes of the Orientals. If each of these possesses a specific abstract form, why could this form not be sensed or perceived by human beings who have developed certain senses somewhat subtler than our ordinary senses? Perceiving these **modal forms** why should they not endow them with a kind of consciousness? We see a human form and we infer it is the body of a man, of a thinking, feeling entity. Why should other organized and permanent forms not be tabernacles for other kinds of indwelling entities?

However, waiving such speculations, we must return to the harp and grasp clearly what it means for an instrument to be able, first, to play at once all the tones of a mode, or at least the key-tones of a mode (the major chord or chord of seventh in a major mode), second, to have a sounding-board which can really prolong tones. It means that such an instrument possesses an immense, intrinsic **modal power**; that it can generate "seas of sounds".

The four stringed instruments, even if taken in masses, do not possess this modal power to a very great extent, because of the fact that strings are not kept vibrating ordinarily as single-tone producers, but are used in rapid succession for the producing of a great many tones. It is only when each string (or whatever sonorous body it may be) is used for the production of a single tone that the fullest modal power is reached. The piano and the harp are then the two instruments which answer to the requirement(5), especially the piano with its ternary system of vibrating strings. The harp has this great advantage however; that it may be tuned at will in a few minutes, and perhaps in a few seconds, if certain devices should be used, so that if needed, various modes may be used in succession. In other words the piano and the harp are the only standardized solo

instruments which are able to produce "seas of sounds", **to generate modal souls**. It is often said that the violin is the king of musical instruments. Truly so, if we speak of a music expressing the individual ego (*Manas*, in Sanscrit) incarnating into matter (descending music); but not if we speak of the music which expresses the collective soul (Buddhi) discarnating, disindividualizing itself in its ascension toward spiritual Oneness and Nirvana which is the **conscious** reabsorption of the Many into the One. In the same way the sea is the source and end of all living forms. Out of the **physical sea** did all forms, all living creatures evolve. In the **spiritual sea** of the Christos shall all LIVING MEN be reabsorbed; and the Christos is nothing but the Soul and Archetypal Essence of the Human Mode.

Advancing one step further in our analysis, we will be struck by the realization that one of the most marked and most occultly important differences between piano and harp lies in the fact that the **piano is a horizontal and the harp a vertical instrument**. This means that the piano is specially attuned to the feminine material-cosmic forces of the Universe — this is why it is mostly hammered by men; whereas the harp is specially attuned to the masculine spiritual-cosmic forces of the Universe — therefore mostly played by women. All religions and esoterisms of the past have always identified the horizontal line with the passive feminine principle, and the vertical line with the masculine active principle. Therefore, according to the type of the music conceived, the composer should select either harp or piano or both as an instrumental foundation.

An orchestral or chamber music combination which does not include piano or harp is **soulless**.(6) Let us hear a modern orchestra without prejudice and as if it were the first time we had ever heard such an instrumental combination. I think that all people who could sincerely do that would be unanimous in finding that what they hear is a **disconnected** ensemble of sounds, lacking totally, first, in homogeneity, second, in tonal foundation — in bass.

The tone of the modern orchestra lacks homogeneity because of the fact that all instruments are like individuals telling their tale, each from its own point of view, **with no feeling of relationship to the whole** — a fit symbol for our modern civilized world! It was and still is not so in the Orient. In Java, for example, the marvelous **gamelong** sounds as a mass of related sounds, because the many gongs, bells, pseudo-marimbaphones, all tuned so as to produce all the tones of the modes in use, generate a continuous sea of sound out of which emerge the individualistic self-expressing melodies of the string or woodwind instruments. The rhythm of the music is not external to the orchestra — as when a conductor leads it from without, as a **plastic manifestation**; but it is an internal rhythm given by the beating of the gongs and of other instruments. For both these reasons the orchestral sound is blended, homogeneous, and finds in the gongs and tam-tams its tonal foundations.

No Woolworth building could stand which did not have deep foundations, dug down in the very rock, in the bowels of the earth. Yet, our orchestral architecture soars freely in high violin tones, in glaring flute and trumpet minarets, without any real deep tones to implant it, to root it in the life-soil of the sonorous matter. Without roots there can be no sap; without

sap no organism. In other words the orchestra is to be likened today to a coralline colony of loosely connected cells. In no way has it yet reached the stage of organic life; for all organic life presupposes a medium of intercellular exchange, a basis of intercellular relationship — that is, the blood or the sap, which are both but differentiated sea water or mineral water. In the same way in which tones that are not harmonics of the same fundamental, parts of the same **sonorous life** are not really related, are **out of mode**; in this very way orchestral tones which are not powerfully linked with the tonal fundamentals (which the piano and organ alone can give today) and which do not commune into the collective life of the sea of sound, of the orchestral blood which alone the pianos and harps — used in masses — can generate, such tones are necessarily disconnected and out of tonal relationship.

How then should the pianos or harps be used in combination with the other **melodic** instruments! Not individually but in masses, as in Egypt, as far as the harp is concerned.(7) It requires, as a matter of course, **a new type of music**, a music not based upon **individualistic tone-expression**, but upon the **cosmic power of related sounds**, upon the new — or very, very ancient — understanding of the mode, as above outlined. We could hardly define in a practical way what this means; we may however say this:

1. That the mission of harp ensembles or piano ensembles is to incarnate almost constantly the essence of the mode — in all its modifications and evolutions — so that it becomes an ever-present reality blending all separative solo-expressions.
2. That it has little or no melodic value.
3. That melodies, carried out by strings or woodwinds, should always be rooted, as it were, in the sea of sounds so that one cannot see **below** them.

Air and infinitude extend above all living beings that come in contact with the sun; but trees do not hang in the air; they evolve, deeply rooted in the earth. So the melodies. And if one objects by referring to medieval polyphony, the answer shall be: such a music was not **vital**. Perhaps it was celestial, but true spirituality and life do not despise the earth; **they transfigure it**, they make of it a heaven. A time will come however, I am sure, when a sea of sound of the subtlest type will be evolved in which the most celestial polyphonies will be able to bathe — not the material sea of the low fundamentals but the mystic sea of the higher waves of sounds. Toward such a transcendental realization we are working; our method is not to reject this sea of sound — this harmonic bass — because it is too heavy and too tempestuous, but to illumine the life it embodies in such a manner that slowly, century after century, it will become lighter and lighter and find new instruments more and more subtle to produce it. To cut out the fundamentals' realm and soar in a high-pitched polyphony, is, to me, to misunderstand the deepest truth about music. It is to create artificial paradises which shun the deep throbbing of elemental life and soothe with dreams

that no vital sun dynamizes. Medieval polyphony was the symbol of monastic life, ecstatic, pure, idealistic, dematerialized. Its value is exactly the value of such a life. Religiously bent individuals must like it (even if their religion is the Lutheran religion of the intellect — of, Bach). Truly spiritual beings cannot consider it as a summit but only as the mirage of a summit; and mirages have made many men and women insane.

The number of pianos or harps to be used in orchestral or chamber music combinations cannot be settled except through experiments. It should vary according to the scope and inner meaning of the works. Even now in our illogical orchestras the number of string instruments is sometimes reduced when old masters' symphonies are performed. Now the string instruments are in a way playing a part outwardly similar to the part which the piano ensemble would play in the future cosmic music; that is they are the foundations of the orchestral tone. But it is a foundation which befitted the intellectual and individualistic music of the Seventeenth Century which aspired to give enjoyment to an artificial civilization. Today, the entire equilibrium of the orchestra seems a fantastic misconception and it can never sound exactly the "right note", though sometimes it approximates it by means of tonal subterfuges.

As a conclusion: In Egypt, the **Great Harps**, seven feet high, luxuriously bejeweled, seemingly parts of the marvelously decorated walls and columns, sounded for the first time in the known civilization of our Human Epoch the deep fundamentals of the tonal world. They probably reached down to the lowest notes of the cello and strong men had to play them — women played the **Small Harps**. Of Egyptian music we know little if anything. The shape of instruments alone has come down to us. But apparently it must have been nearer to a true cosmic music than any other music. And in Egypt the harps triumphed. There probably occurred the change of which we spoke after which harps lost their bow-like shape and became triangular. From Egypt it passed to the Christian civilization; in the same way the Egyptian gnostics became the spiritual fathers of Christianity which degenerated after repudiating them and siding with the gods of the Germanic tribes, and especially with the god of personal ambition who belongs to all tribes and all ages!

Perhaps the spirit of the early Egyptian civilization will soon reincarnate on a still higher plane, and perhaps America will be its birthplace. Let the new music be the herald of the coming Day. But music being nothing without proper mediums of expression, let us work for the cause of those instruments which are needed to express the new music; for their transfiguration — if they already exist, as harp and piano — or for their creation. This is the first practical step to accomplish.

1. Rudhyar was unable to find a publisher for the book, and it was eventually superceded by other works, much later.

2. it is said that during the latest Egyptian dynasties the harp already became triangular in shape. But I am not certain that this is true.

3. The fact that the Chromatic Harp is **much less correct** in its occult significance may explain the comparative lack of success for this instrument — at least for some people!
4. The truest **synthetic mode** from a cosmic point of view would be based upon a sort of enharmonic system including 22 tones to the octave (that is 3 times 7, plus a leading tone). It would then be the ancient Hindu mode of the 22 srutis, not to be confounded with the fourth-tone scale cutting the octave in 24 little segments, all alike.
5. Other instruments are: the marimbaphone, sets of bells, gongs, etc. Hindu, Javanese, Chinese, etc., orchestras include all such bell-organ or gong-organs, as they have been called, capable of producing series of from fifteen to thirty precise tones.
6. We might add gongs, bells, etc., which, if they were properly built (including **all** registers) might perhaps take the place of the piano. As they now stand they are too clumsy and their tones too vague and restricted to be anything but an auxiliary, though a most necessary help to the pianos, as far as I can conceive it.
7. According to computations based upon the study of the paintings and low reliefs of old temples, the Egyptian orchestra would have included normally: 20 harps, 8 lutes, 5 lyres, 6 double-pipes, 5 flutes, 2 pipes, 2 tambourines and voices — that is a proportion of 35 string-plucked instruments and of 13 woodwind instruments. According to Athenaeus, the Royal Orchestra at the time of Ptolemy Philharmonic for the gala performances was composed of 300 harps and 300 woodwinds and voices. (F. Rowbotham — *A History of Music.*)