

What Ernest McClain says about Agni in The Myth of Invariance

page 1: Agni, savior and god of fire, is himself "the holy Singer who precedes the sages . . . waxen mighty by laudations" and the secret he alone can impart is a certain "lofty Hymn". (3.5.1-2 and 4.5.3)

page 6: [regarding tenfoldness] ... and ten is the number of piles of wood for the fire in which Agni is born as well as the number of his secret "dwelling places."

page 37: [regarding tone mandalas] But it is equally legitimate to consider $D = 360 = 720$ at the top of the circle as "1" also, in the sense of the geometric mean whose "appearance" has been changed to avoid fractions. Now a-flat lies somewhat askew from the symmetrical [Asvin] twins we have been studying; it is near the locus of the square root of 2 which would have put the equal tempered A-flat = G-sharp precisely at the bottom of the circle, directly opposite D. It is in this region of the of the circle, I believe, that Indra will be born later as Indra-Agni, god of fire, not as a "point" in the circle but as a segment of the circle. The Rg Veda describes this birth as that of a kind of "breach baby": "Forth from the side obliquely will I issue" (R.V. 4.18.12). There is no integer at the locus in question. The great expansion of the number sets in later diagrams is motivated, I believe, by the effort to approximate as exactly as possible the irrational square root of 2 which is needed to locate a tone symmetrically opposite the mean on D, that is, precisely in the middle of our octave.

page 40: [regarding Vishnu's three steps]

Among the skillful Gods most skilled is he,
who made the two world-halves which
bring prosperity to all;
Who with great wisdom measured both the
regions out, and established them
with pillars that shall ne'er decay.

(1.160.4)

Now if the "world-halves" are tonal semicircles, mathematical reciprocity ensuring that they will be structured symmetrically, then the problem of defining the whole circle is the problem of defining either half of it satisfactorily. One half of the circle is the musical "tritone" of three wholetones. Vishnu can stride across both heaven and earth in three steps if he takes steps of the highest caste major wholetones of 8:9, as for instance, from D to E or D to C. however, three such consecutive wholetones will slightly exceed a semicircle (each is worth about 204 cents, and $3 \cdot 204 = 612$, not 600); he will force the "world-halves" apart, as the poets say. They will part in the region of the equal-tempered A-flat = G-sharp near the bottom of the circle where Agni is due to be born. "Mortal men" do not normally move through three consecutive wholetones, the tritone "diabolus in musica" which was frowned on by the Church during the reign of "modal theory" in the West. Two such wholetones are all that can be contained within a tetrachord frame of ratio 3:4, leaving an undersized "semitone" leimma of ratio 243:256. (Note: $9/8 \cdot 9/8 \cdot 256/243 = 4/3$. We add intervals by multiplying their ratios expressed as fractions.) these acoustical facts suggest a basis for Dirghatamas' reference to Vishnu:

A mortal man when he beholds two steps
of him who looks upon the light, is
restless with amaze.

But his third step do no one venture to
 approach, no, nor the feathered birds of
 air who fly with wings.

He, like a rounded wheel, hath in swift
 motion set his ninety racing steeds
 together with the four.
 developed, vast in form, with those who
 sing forth praise, a youth, no more a
 child, cometh to our call.

(1.155.5-6)

page 46: [regarding Taurus (and Aldebaran?)] Agni (or Indra-Agni), incarnate savior and god of fire, is "the Steer with triple horn, the life-bestower" (5.43.13). In another verse we hear:

The Bull who wears all shapes, the triple-breasted,
 three uddered, with a brood
 in many places
 Ruleth majestic with his triple aspect, the
 Bull, the everlasting ones' impregnater.

(3.56.3)

page 81: [regarding McClain's yantras for cosmic cycles] The "Three Times Seven pour out the milky flow" of Soma, the sacred juice, "pressed out with stones" (9.86.21-23). "The three-times-seven bright sparks of fire have swallowed up the poison's strength." (1.191.12) There are "thrice-seven mystic things contained within" Agni, incarnate Savior, and "thrice-seven wandering rivers, yea, the mighty floods" (1.72.6 and 10.64.8).

page 83: [section on Agni]

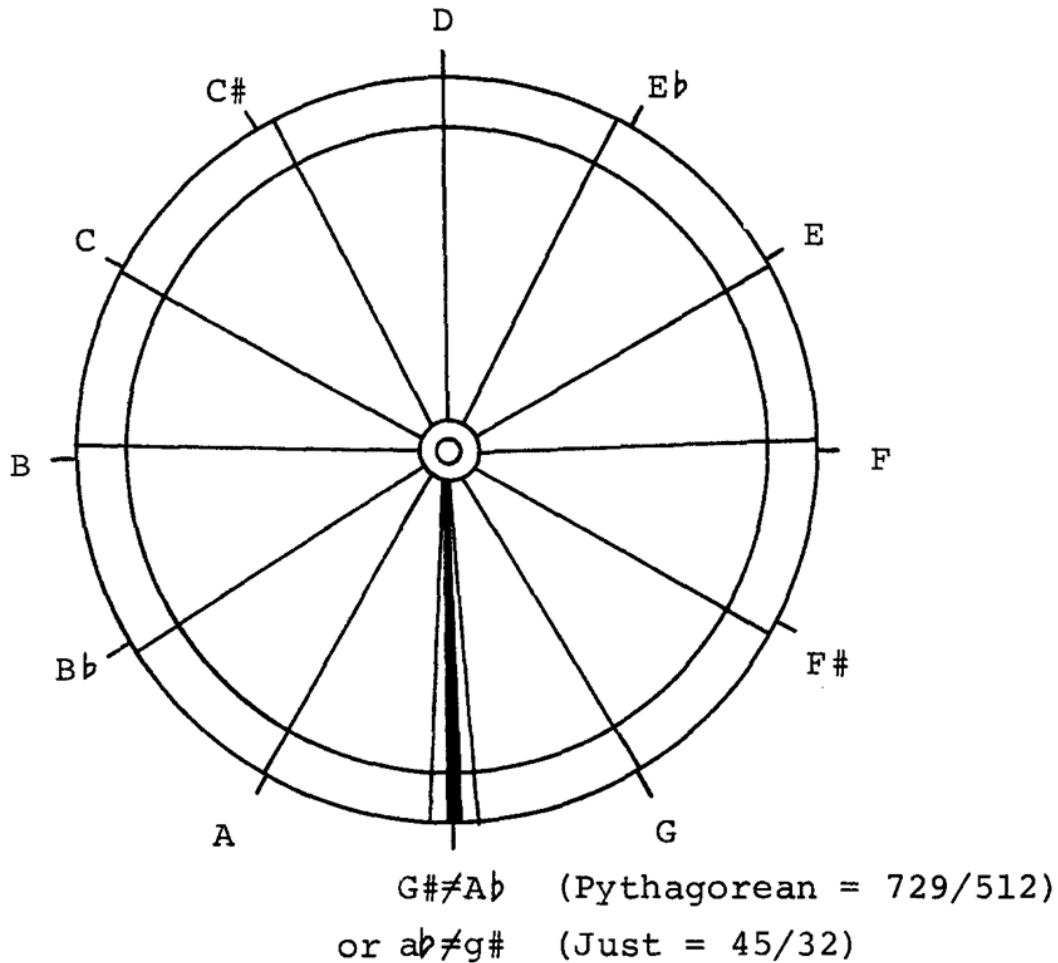
THE BIRTH OF AGNI, INCARNATE SAVIOR

We have gone to extravagant arithmetical lengths to look for $Ab = G\# = 0$, a tone which would complete our circle of 12 while maintaining perfect inverse symmetry, $D: Ab :: G\# : D'$. Whether or not our poets knew that this value was "irrational" or "incommensurable" with their integer system may be open to debate, but they at least knew that we are being saddled with an unconscionable "numerosity," while still missing our goal. Remembering that it is the duty of Brahmins, and only Brahmins, to sacrifice, and that their ritual requires a to-and-fro dance, notice that the tenth element in the central axis of the Kalpa yantra is a "Brahmin" $G\#$ whose reciprocal Ab disagrees by the interval of the "Pythagorean comma," too small for use as a melodic interval, so nearly subliminal under most circumstances as to invite our glossing over it, yet painfully present to an awakened consciousness in search of absolute truth. Here is an "original sin" among the powers of the "divine number 3" for which neither men nor gods are responsible.' This discrepancy, worth about 24 cents, is far worse than that between "god" = 5^{14} at the peak of our yantra and its reciprocal, the "dragon" in the bottom row, worth only about 4 cents, but if we can live with it and accept the consequences we can escape having to work with ten-digit numbers, which still are not absolutely free from the same kind of "error."

It is in this locus, I suggest, that Agni is born as Indra-Agni, god of fire. This "child of three mothers" (de Nicolas catalogues "three heads, three stations, three tongues, three bodies, three dwellings, three kindlings," etc.) is simultaneously the child of $45/32$ and its reciprocal, $729/512$ and its reciprocal, and $78,125/55,296$ and its reciprocal! In Chart 16 I have tried to graph the loci of

these ratios in the tone-mandala, among the eleven other "Brahmin" tones, tones in "Pythagorean tuning" by perfect fourths and fifths, defined by numbers 2^p3^q .

CHART 16



The Birth of Agni in the Flames of Sacrifice

Pythagorean tuning is displayed here as an approximation to Equal-temperament. The cumulative discrepancy of 2 cents in each perfect fifth or fourth reaches a crisis in the middle of the octave at $A\flat G\#$. The Visnu/Vrtra ratio of $78125/55296$ nearly closes this gap. The difference between the Pythagorean $729/512$ and the Just $45/32$ is too small to graph. (i.e., The excess of 24 cents in "Pythagorean tuning" just about matches the defect of 22 cents in "Just tuning.")

The "wedge" in the tone-mandala of Chart 16 is the area in which the "friction" between alternate approximations to the square root of 2 produces the "flames of sacrifice." The circle, remember, is the womb of Usas, daughter of the Sun. The Rg Veda is filled with frank sexual humor (which Griffith, being a nineteenth century English gentleman, translated into Latin rather than English) concerning the condition of male and female organs during intercourse.⁹ Since the "Brahmin" $A\flat$ and $G\#$ overlap in the circle, they rather naturally "stretch" the "vagina," our "world-halves." Our

"wedge" even looks something like the Indian plough, "a big thorn-piece of wood or metal," called a sepah, "penis" (Latin cippus, "stake, post").¹⁰ Our whole construction arises from the interplay of "male" and "female" Nicomachean triangles, and the "commas" which arise are a kind of "genital friction." In Indian Erotics Ivo Fiser explores Vedic sexuality, and he reminds us that a verse was conceived asyoni (womb) of the melody that originated from it. "In the act of procreation, the woman is to be looked upon as a place of sacrifice," with her pubic hair as the grass, her skin as the "soma-press," and the labia as "the fire in the middle." The mathematical origins of Vedic sexual imagery appear to have been as neglected as Plato's sexual humor, which is based on the fact that "male" odd numbers "procreate" on each other in a homosexual fantasy. The latter, we suppose, has nothing to do with Plato's convictions about sex.

The overlap between the "Brahmin" Ab and G# is probably related to the lotus position in which the legs are crossed over each other during meditation. The concentration on the single syllable OM must certainly be derived in some way from the lack of unity in the integer approximations to the square root of 2. Hindu mythology seems to have aimed at and achieved a total unity between the physical and the metaphysical, with number theory providing the ground for an absolute certainty of viewpoint.

We have now achieved, I believe, the material we need for another look at the chariot of the gods, "fashioned mentally."