Śrauta Sutra 17: 29, translated by Ikari and Arnold 1983 II: 668–671; cf. Pingree 1981: 3 sq. *ubi alia*). Several details are missing in these texts and were transmitted orally. They are preserved by the Nambudiri Brahmans of Kerala who have maintained, up to the present, three traditions of bird altars: the "Six-Tipped," "the Five-Tipped" and "the Square." For there is an important difference between ancient Greece and India: ancient Greek civilization is no longer a living tradition and there is nothing left of Greek ritual. In India, on the other hand, some of the ancient ritual and geometric knowledge survives (albeit in inaccessible corners) through unbroken chains of transmission as is demonstrated by precisely these oral traditions. The following brief description is based upon the Nambudiri tradition (cf. Staal 1982 and for a complete account: Staal et al. 1983).

In the first Nambudiri tradition, the Bird Altar with Six-Tipped Wings, the first layer looks as in Figure 2:
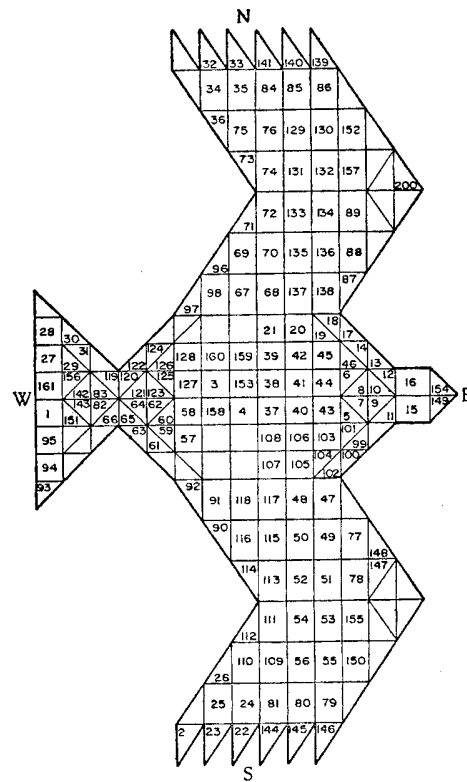

Figure 2. First layer of the Six-Tipped Altar.

In this figure, numbers indicate the (unexplained) order in which the bricks have to be consecrated with mantras (non-numbered bricks may be consecrated in any order).

In this first layer, which has the same configuration as the third and fifth, there are 38 squares, 58 rectangles (of two sizes) and 104 triangles (of two sizes). The second layer, not depicted here, has the same configuration as the fourth with 11 squares, 88 rectangles (of two sizes) and 201 triangles (of six sizes and five shapes). The sizes are constructed from a unit square with side one fifth the size of the Yajamāna or Ritual Patron. Some simple geometrical constructions are needed:
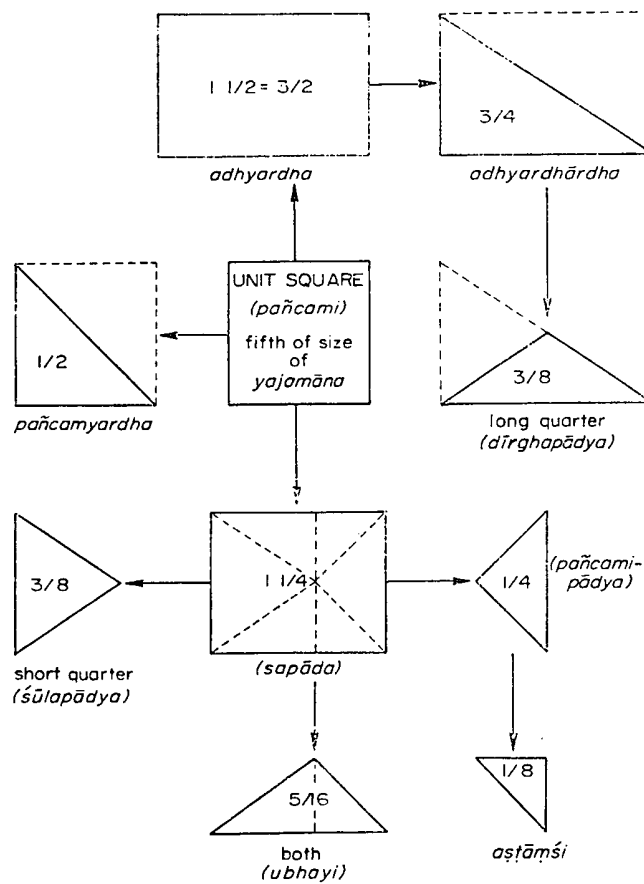

Figure 3. Sizes and shapes of bricks of the Six-Tipped Altar.

In the first, third and fifth layers of the Five-Tipped Bird Altar, there are 61 squares, 136 triangles (of two sizes) and three pentagons (of two sizes and three shapes). The second and fourth layers consist of 72 squares and 128 triangles (of two sizes). The constructions of these from the basic square is accordingly different. In the Square Bird Altar, which seems trivial at first, the construction is different again and not any simpler.

The mathematics of bricks is further constrained by other ritual requirements. The total area of each layer of the altar must be seven-and-a-half times a square *puruṣa*, i.e., a square of which the side is the size of the Yajamāna. Since the Yajamāna was measured in five units to arrive at the unit square of Figure 3, the square puruṣa is 25 times that unit square. The numbers, shapes and areas of the bricks are part of the oral tradition but the computation of the areas is not stated anywhere in clear terms. This is not surprising since the matter is far from obvious: for we should not forget that the Vedic Indians, like their Greek cousins, lacked simple expressions for numbers, whether integers or fractions. All calculation was done geometrically which is more complicated, especially for us, than if it were done in our modern notation. Only by adopting the latter can the number and area of bricks be easily expressed. For the first and third layers of the Six-Tipped Altar, it may be done as follows:

	NUMBER	AREA PER BRICK	AREA
square	38	1	38
1 1/4	2	1.25	2.5
1 1/2	56	1.5	84
1/2	60	0.5	30
3/4	44	0.75	33
TOTAL	200		187.5 = 7 1/2 × 25

The fifth layer is similar but there are 205 bricks, 10 of half thickness. The computation for the second and fourth layers are more complex but basically similar.

None of the evidence from the Agnicayana we have so far considered is in an obvious manner related to Greek geometry. Arrogant ignoramuses will be quick to point out that this "Agni" does not look like the deductive system of Euclid, which is true. The only Indian counterpart to Euclid is the derivational system of Pāṇini's Sanskrit grammar. It is in some