

Id al-Adha

Sacrifice and Henna Traditions



by Catherine Cartwright~Jones

Id al-Adha: The Ecological and Nutritional Impact of the Muslim Feast of Sacrifice, and the Significance of Henna in this Sacrifice

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Catherine Cartwright Jones, 2002

Id al-Adha is the Muslim Feast of Sacrifice, the holiest and grandest festival of the Muslim calendar. The feast falls on the 12th month of the calendar, *Tho El Hija*, the month of the annual pilgrimage to Mecca. The Feast of Sacrifice lasts for four days and commemorates *Ibrahim's* (Abraham's) obedience to God in all things, even to sacrifice his own son Ishmael if such was required. God intervened at the moment of Ibrahim's sacrifice, providing a ram in place of the beloved son so that Ishmael might live.ⁱ The Feast of Sacrifice requires every head of household to sacrifice a goat, sheep, or other domestic ruminant, in memory of Ibrahim's devotion to God if he or she can possibly afford to do soⁱⁱ. A third of the meat is eaten by the sacrificer's family during the Id holiday, a third is given to relatives, and the remaining third is given to the poor. Id al-Adha is one of the two times of the year that every Muslim, no matter how poor, can expect to eat their fill of meat.

The Origins of Id al-Adha Sacrifice and Henna

Henna is an important part of this Id sacrifice, and has been significant in many celebrations since the pre-monotheistic Bronze Age. The Ugaritic Canaanites used henna in association with their ritual associated with spring fertility sacrifices of domestic ruminants, as well as harvest festivals, as noted in the Ugaritic Myth of Baal, in the version of Ilmilku (de Moor, 1971: 85). In this epic myth, young women gather fresh henna leaves when the rainy season ends and the warm seasons begins in late March or early April, when the Pleiades are visible in the early evening western sky. They applied the henna to their hands and feet, as is documented the Ugaritic text and in the Apocrypha, "The Second Book of Adam and Eve" chapter 20 verse 31. During the period from 3000 BCE to 1200 BCE, ceramic pieces from Minos, the Cyclades, Mycenae, and Cyprus depict young women displaying dark red stains on their hands and feet. This fertility festival featured the sacrifice of domestic ruminants for Baal, the rain bringing bull-god (Hooke, 1965: 83) (De Moor, 1971: 85 – 123) from about 3000 B. C. E. This tradition may have been established as early as 7000 B.C. E. in Catal Huyuk, Turkey, where fertility ritual actions were associated with red hands and a bull god marked in red, (Mellaart. 1967), with henna plausibly being the source of the red colorant in practice.

The spring sacrifice was incorporated into Judaism as Abraham's intended sacrifice of Isaac (Maccoby, 1983: 74 - 86). A 6th century CE mosaic on the floor of Beth Alpha synagogue in Galilee shows God hennaed hand reaching forth to stay Abraham's knife (Campbell, 1988: 84). The sacrifice was integrated into Christianity via the crucifixion of Christ (the lamb of god) at Easter (Maccoby, 1983: 97 – 106). A 5th century Coptic Christian tapestry in the Cleveland Museum shows three Easter worshippers, with henna

stains on their raised hands. The tradition came into Islam through Id al-Adha celebrations. According to Islamic tradition, when the Prophet Mohammed sacrificed a ram in remembrance of Ibrahim, he applied henna and kohl to the ram, and to his own hands (Hammoudi, 1993: 186).

The pre-monotheistic agrarian fertility and sacrifice rituals with their accompanying henna traditions spread through the eastern Mediterranean and into North Africa during the Bronze Age. Sacrificial sites have been found in Punic areas of Tunisia, marked by stelae consecrating the sites to Baal. Excavations of these sites have shown containments of immolated child sacrifices, and comparable sacrifices occurred at Carthage and other Punic sites, verified also by Roman writings. (Green, 159 - 182). Westermarck (1917, 464-711), and Hammoudi (1993, 27 – 9) elaborate on the agrarian ritual substitution of a chosen victim for others whose lives are in danger, a sacrifice to appease a wrathful deity and secure favorable conditions and the ritual metaphoric re-enactment of the agricultural death and renewal cycle. Greene point out Punic inscriptions from the 6th century B.C.E. use the word *molchmor*, “the offering of a lamb” to demonstrate that domestic male ruminant animal sacrifice replaced human sacrifice during this period. In Carthage, the substitution of a goat for a child in agrarian ritual sacrifice beginning in the 6th century B.C.E. is corroborated by the change in the bone contents of burial urns of immolated “*Tophets*” at sanctuaries of Baal worship (Green, 1975: 182 - 183).

The annual springtime fertility ritual of goat and sheep sacrifice was performed to secure blessing, and deter drought and famine in the Levant beginning between 3000 B.C.E. and 1200 B.C.E. Rainfall in the region diminished to about 30” per year during that period as human population expanded, creating greater demands on the resource base, particularly on water. (Craigie, 1983: 28). That level of rainfall is adequate for goat forage, though Canaanite farmers were often concerned about having sufficient water resources for the dry season. Reducing the number of male sheep and goats in the spring, specifically as a sacrifice to Baal, the god of rain and fertility (Craigie, 1993: 61 – 6), relieved pressure on pasture and water resources the following summer. North African areas colonized by the Canaanites performed the same ritual actions intended to please the same rain and fertility deity, Baal. This pagan goat sacrifice passed with little change into the monotheistic religions that evolved in the Canaanite indigenous regions. In Amazigh agrarian communities, the Muslim Id al-Adha ritual sacrifice is still accompanied by prayers for rainfall and fertility (Hammoudi, 1993, 23). These were originally springtime rituals, which removed the male domestic ruminants less useful to human nutrition from the ecosystem at the onset of the dry season. In the Jewish and Christian solar calendar, this sacrifice remains placed in the springtime. Islam set the agrarian ritual into a moveable lunar calendar in the mid 7th century, so Id does not necessarily harvest the males in the springtime (Hammoudi, 1993: 28).

Id al-Adha's Anthropological Significance

Id al-Adha is a celebration that has economic, social and ecological functions. Id sacrifice is a sacred obligation in Islam, and is accompanied by prayers, and attending sermons at the mosque. For some who can afford it, the sacrifice precedes pilgrimage rites in Mecca. The sacrifice demonstrates a person's obedience to God in all things. Id sacrifice is also a personal redemption and ritual expiation of mistakes committed in the past yearⁱⁱⁱ. The sacrificed animal's hide is often tanned and dressed for use as a prayer mat (Trimingham, 1959: 80). The hide might be given as a gift, it was not to be sold. The sacrificed animal is believed to serve as a steed carrying the man to heaven at his death (Legey, 1926: 99).

The goat meat and milk industry are concerned with Eid al-Adha as a production and distribution issue. Id al-Adha is the 12th day of Tho El Hija, the last month of the Muslim lunar calendar. Id thus occurs on a different date each year, as the lunar calendar is shorter than the Gregorian calendar. The sacrificial animals must be yearlings at Id, uncastrated and with undocked tails, shipped live and in perfect condition in time for the holiday. The exact date of Id is determined by a careful calculation of the first sighting of the new moon, so farmers must take care to breed and ship the appropriate livestock to market at the correct time (Thonney, 2001).

For the World Bank Bank Technical Paper; "Sheep and Goats in Developing Countries", Id is a function of goat management in third world economic development. The Egyptian Ministry of Agriculture is concerned with Id's effect in the livestock industry, as all the healthiest, most perfect, yearling livestock are harvested. This genetically depletes the herds, as the best males are removed from the gene pool before they can be used as breeding stock (Hoagland, 1988, 776-777).

Westermarck (1917: 464-71) and Hammoudi (1993) interpret Id al-Adha as a continuity of an agrarian fertility ritual, directly descended from the Bronze Age Canaanite religion.

For merchants in Muslim communities, Eid a-Adha is the key economic point of the year, comparable to Christmas in purchasing gifts, apparel and food. Children go through their villages seeking presents of sweets and small amounts of money from neighbors, who expect that their generosity will bring God's favor upon them. (Westermarck, 1926: 110) Id sales are thus a "make or break" period for the year in many economic sectors. Id is celebrated with feasting, entertainment, gifts for friends and family, new clothing and henna adornment.

The Id al-Adha can also be regarded as an efficient and longstanding energy flow regulating mechanism reinforced by henna and related ritual actions. Id optimizes energy capture and flow from forage to domestic ruminants to agrarian and pastoralist people in the North African and desert biomes. Rappaport (1968), in "Pigs for the Ancestors" demonstrated Tsembaga ritual pig sacrifice as an energy flow

homeostat. When domestic pig populations increased to a level that strained local resources, a war was declared and pigs were sacrificed as a part of elaborate rituals to secure the assistance of ancestors in tribal skirmishes. When the pig population was depleted, and the war concluded, very little pig meat was harvested until the next ritual slaughter. Thus the periodic declaration of war and ritual pig slaughter kept the pig population in homeostasis within the ecosystem. Id can be demonstrated to be a similar ritually maintained ecological energy flow mechanism. Id harvests up to half the male domestic ruminant population in Muslim dominated savannah and desert biomes, reserving scarce forage and water for females, who provide six to ten times more high quality protein and calories for human consumption via lactation than the males. This manages the energy flow of people and their domestic ruminants within their habitat towards an optimal goal range so that forage and water resources will not be depleted by herd overpopulation, while maintaining a steady resource of protein for the human population. Id al-Adha rituals satisfy religious and social needs, and they impact nutrition and land use. As with the Tsembaga pig slaughter in “Pigs for the Ancestors” (Rappaport, 1968), sanctification reinforces the importance of Id sacrifice, and separates it from the occasional decision to procure meat for dinner.

The Importance of Id al-Adha Ritual

Henna differentiates Id sacrifice as different from a secular banquet or large holiday meal. Henna paste is made from freshly ground leaves and lemon juice if there is a henna bush with a new growth of leaves in the neighborhood. The paste is applied in patterns on the hands and feet, legs and arms, and occasionally on the face. If there are no henna bushes locally, henna powder is purchased at the market, and mixed with rainwater or lemon juice. Household henna mixes may include black pepper, clove, coffee, tea, orange flower water, rosewater, yogurt, sugar, egg white, frankincense powder, cardamom, and pomegranate syrup. The henna is applied with a kohl pick, small stick or more modern implements such as syringes, bottles, or cones made of rolled plastic. Khamisa patterns, in diamond, cross or x shaped variants are favored for Id patterns in Amazigh Moroccan villages. These simple patterns are preferred for Id, as there is little time to spare during the holiday preparations for elaborate patterning such as would be done on a bride. Henna beautifies the wearers for the festive occasion, as well as averting evil from the sacrifice.

Everyone is adorned with Id henna patterns, including the sacrificial animal, to deter evil spirits from interfering with the spiritual benefits of the sacrifice. At no other time is an animal to be slaughtered for eating marked with henna, kissed on the mouth, and adorned as bride. Prayers, incense, kohl, ritual bathing, and other specific actions are deemed necessary to sanctify this sacrifice, and differentiate it from slaughter. If the ritual actions are not completed correctly, no blessings or expiation of sin are conferred upon the participants. Though Homans argues that ritual has no “practical result on the world” (1941: 172),

Rappaport demonstrates that the performance of ritual can be “part of the behavioral repertoire employed by an aggregate of organisms in adjusting to its environment” (1979: 28).

Prayers and a visit to the mosque satisfy the participant’s metaphysical responsibilities. Meat distribution satisfies the participant’s social responsibilities. Henna is a purifactory and adornment serving a sense of “fitness” as well as dispelling evil spirits who intend to befoul the sacrifice. Harvesting the yearling male domestic ruminant population in favor of the lactating female half, and distributing the meat has a profound and very real impact on the human community’s nutrition and energy flow management within their system. The sacrifice action of Id al-Adha regulates the domestic ruminant population towards a goal range, as does the Tsembaga pig slaughtering (Rappaport 1971:59), though both also have accompanying rituals that serve social and metaphysical purpose. Rappaport also proposes that “sacredness” is a powerful reinforcer for the cybernetic effect of Tsembaga pig population management (1971: 72). Similarly, placement of Id al-Adha sacrifice as a pillar of Islam has kept it a homeostat for domestic ruminant herds at levels optimal for human nutrition and resource maintenance in village and pastoral systems. Henna, gifts for children, and a festive public atmosphere are additional traditional and social factors encouraging participation in Id sacrifice. The pressure to make sacrifice is so strong that a person will do go to any length to purchase a sacrificial animal and thus avoid social embarrassment ((Newton, 1989, p.22). Persons who can afford to do so sacrifice more animals to increase their merit. In Ait Yusi, a dutiful man should provide an animal to be sacrificed for each of his wives as well as for himself.

Id al-Adha ritual actions as observed in rural Amazigh groups between 1860 and 1950.

The Amazigh are a group of indigenous pastoral and agrarian tribes in Morocco, who have been demonstrated to be directly genetic and linguistically related to the Canaanites and the Bronze Age Punic civilization. (Arnaiz-Villena, Martino-Laso, Alonso-Garcia, 2001) Their culture has maintained many of the ritual actions of their ancestors. Westermarck (1926), Briggs (1967), Hammoudi (1993), and Laoust (1921) documented Amazigh Id al-Adha ritual actions between 1860 and 1970. Their traditions are consistent with other Muslim agrarian and pastoral traditions across North Africa and Arabia. Though each village and tribe has variants, the Amazigh ritual elements from these Saharan and Anti-Atlas groups are largely shared. The ritual elements must be strictly observed for the Id sacrifice to be acceptable to God. Failure to perform the ritual actions negates the redemptive, sanctifying effect of the Id sacrifice, and reduces it to a butchery of ordinary meat, with no redemptive potential for the sacrificer. A perfectly observed sacrifice absolves a man of sin, fulfills his obligation to Allah, secures blessings for his household, and establishes him as a respected member of his community. This promise of redemption and higher social standing strongly encourages participation in and maintenance of the ritual action.

Henna application is an important ritual action in Id. Henna supplies “*baraka*”, the quality of blessedness that deters evil from entering and fouling the sanctity of the ritual performance (Briggs: 1960: 96). The holiness of the sacrifice brings benefit, but also attracts evil. Baraka enhances the fitness of the sacrifice and sacrificer, and prevents jealous, destructive influences from interfering. (Westermarck, 1926: 107). The man who intends to make Id sacrifice must first prepare, sanctify and adorn himself in order to gain benefit from the baraka of the sacrificed victim, and to guard himself from supernatural danger during the sacrifice. (Westermarck, 1926: 106 - 7) Hiana, Andjra, and Ait Sadden married men apply a bit of henna on their palms or on the tips of their fingers, or dip their little finger and nail of the right hand into henna in Dukkala.. Ait Yusi and Ait Sadden unmarried men use more henna, applying patterns to their hands (Westermarck 1926: 107 – 8). The men must abstain from sex, as that is polluting (Hammoudi, 1993:113). Men and boys will bathe and have their heads shaved and their nails trimmed, as uncleanness is considered to attract evil. Complete ablutions expiate impurities and sin, and indicate the intention to perform a ritual meeting with God.

Women henna their hands and feet the evening before Id unless they are too busy with household preparations. Women henna their hair, and unmarried girls believe they will lose their hair if they do not henna before the hair of the sacrificed animal is singed off after slaughter. Some dab henna on their navels before the feast so they will not get indigestion. Children of both sexes are hennaed, though the girls may have more henna, and in more elaborate patterns than the boys. Everyone who can afford such wears clean, new, clothing, and may perfume it with rosewater, orange-flower water, or incense to repel *jnun*, malicious spirits (Westermarck, 1926: 107 – 8).

Id henna is applied to domestic animals as well as to the human family. The Hiaiana, Ait Yusi and Ait Nder henna their horses and other animals. They henna the horses’ foreheads, and any white spots on their bodies. Sheep, cattle, goats, mules, cows, are hennaed to enhance their beauty and luck for the coming year. The At Ubahti put henna on one animal of each species, even dogs and cats. Ait Uusi Greyhounds have henna applied to their foreheads, the Hiaina and Ait Sadden greyhounds also have their chests and feet hennaed. If a family has animals too numerous to henna, they simply sprinkle them with a mixture of henna and water. (Westermarck, 1926: 8)

Dwellings are also marked with henna for Id. Tent dwellers in Dukkala and Ait Sadden will henna the ridgepole of their tent, and the Ait Sadden henna the pole supporting the roof of their house (Westermarck, 1926: 108).

On the eve of the feast, women will paint their eyes with kohl and darken their lips and teeth with walnut root. The scribe who conducts Id services will apply kohl to his eyes, as will the men. Kohl is regarded as a purifactory and beautifying cosmetic, capable of repelling the evil eye.

The sacrificial animal must be of the appropriate species and sex. It is purified, sanctified and adorned with henna and kohl. Goats and sheep are the preferred sacrifice in most regions, though camels, bulls, and water buffalo are also permitted. The most desirable sacrifice is a yearling male, with perfect horns and teeth, uncastrated, with a fat tail if it is a sheep. It will be set apart from the flock months ahead of time, and brought into the house, where it is treated as a family member. It is kept clean, treated with affection and respect, and played with as a sibling by the family children (Hammoudi, 1993: 114).

Women adorn the sacrificial animal as if it were a bride. They apply henna to its head, kohl to its eyes, and walnut root to its mouth in preparation for the sacrifice. The henna and kohl deter the malicious and polluting *jnun*, and enhance the attractiveness and fitness of the sacrifice. Mohammed is said to have preferred rams with black rings around their eyes, as they resembled a bride's kohled eyes (Westermarck 1926: 116). These ritual elements set the sacrificial animal well apart from an ordinary source of meat that does not require cosmetic improvement before slaughter.

The preparation for ritual sacrifice differs from ordinary butchery. The knife must be consecrated. Each sacrificer takes his knife with him to the religious services the morning of Id, and the knives are put together on the ground. The Ait Sadden thrust their knives into the stone cairn marking the *msalla*, the village place of worship. The Ait Nder dip their knives into the blood of the first sheep killed at the *msalla* by the *fqi*, the village religious leader. Smoldering incense is carried around the sacrificial animal three times to deter malevolent spirits. The victim is turned towards the east, and the sacrificer says a "*Bishmilla*", "in the name of God, God is most Great" (Westermarck 1926: 116 - 9). The villagers may then also make sacrifice near the *msalla*, or make sacrifice in front of their homes.

The head of each household prays, turns the animal towards Mecca, and then prays aloud. The women kiss the animal on the mouth. A platter of henna, barley, salt, and walnut bark is presented to the victim, and some is put into his mouth. The prayer "I give thee food in this world, Thou wilt give me food in the other" is offered. Others pray, "oh God, grant us your pardon and bestow a good year upon us" or "Oh God give us rain." (Laouste, 1926: 99, 100) A mouthful of the henna mixture is put into the mouth of the animal, and it is forced to swallow. The sacrificial knife is to cut the throat with a single stroke, just behind the uvula, as the henna passed from the mouth. (Hammoudi, 1993: 116)

People rush forth to collect the gushing blood, regarding sacrificial blood as having magical properties. It is rubbed on the hands and feet to deter chapping. It is smeared on stomachs to avoid indigestion. A silver bracelet laid into the blood is believed to make a family prosperous. The sacrificial blood is considered to dispel *jnun*, and is dried and kept to cure patients struck by malicious *jnun*. Household lintels may be smeared with the blood (Westermarck 1923: 122 – 3) (Hammoudi, 1993: 118). In contrast, blood from

secular slaughter and all other spillage is considered dangerous, polluting, and must be avoided at all costs, and be carefully discarded. Sacred blood is cleansing, and people endeavor to make contact with it. The ground where the sacred blood falls is sprinkled with salt to drive away demons (Hammoudi 1993: 118).

The sacrificial meat is divided into three parts: one for family, one for relatives, and one part for the poor. All the meat must be consumed within three days. All who partake of the meat are considered to share in the supernatural benefit of its holiness, and consumption is ritualized. Butchery must be undertaken with care. The first part of the animal to be eaten is the liver, considered to be the seat of deepest love. People must use their fingers to pull the meat from the bones, not their teeth. Knives must not be used to cut the meat, as it is an offense to the victim of a knife. The Ait Waryager children are not allowed to eat the throat as the knife pierced it. These boys should not share eating the same eye, or they will quarrel. The gall bladder of the animal is hung in the house, as it has great "*baraka*" and as such is a powerful deterrent of malevolent spirits (Westermarck, 1923, 120 – 3). The skull and intact bones are carefully kept away from cats and dogs. These ritual actions mark this as a sanctified, martyred victim, bestowing grace and blessings on all who partake of it. It is not an ordinary meat carcass.

Henna and the other Id al-Adha actions of sanctification and purification ensure that annual harvesting and sharing of male domestic ruminants will continue. Rappaport argued that the ritual quality of Tsembaga pig sacrifice ensured maintenance of their energy flow homeostat. Rural Amazigh ritual elements of Id al-Adha changed little in 100 years, between the earliest investigations by Westermarck and the most recent by Hammoudi, (1993:51). Both authors present evidence demonstrating similar domestic ruminant sacrifice fertility rituals existed 4000 years ago. One of the few changes Hammoudi noticed was that by the 1980's, some adolescent boys educated in the Lycee', who wished to demonstrate that they distained "backwards traditions", attempted to prevent women from hennaing and ornamenting the sacrificial animals, so the ritual elements may indeed remain stable over generations in rural communities (1993: 53). Town populations do not enact such elaborate rituals, with explicit prayers for rain and fertile fields as the rural Amazigh, (Brown, 1976: 93), but each Muslim head of household is still obligated to make the sacrifice, wherever his household may be.

The Id al-Adha Impact on Nutrition

At nomadic, rural, town or urban level, Id al-Adha has a major impact on nutrition in the Muslim community. The equal distribution of meat to family, relatives, and the poor is a religious obligation. If the ideal 100-pound, 1 year old male goat or ram is sacrificed (Rauf, 2000), 50 pounds of meat is made available for distribution to this group. Each goat provides 32,544 calories, 688 grams fat, and 6150 grams of high quality protein (USDA handbook #8, Table #1, 1989). If one of ten members of a rural community sacrifices a full grown animal, each member of that community will receive as their portion about 5 pounds of meat. For rural families, the Id portion is most of the meat they eat in a year. Many heads of households

sacrifice one animal for each wife, and others sacrifice as many animals as they can possibly afford. The poor will crowd at the entrance to a wealthy man's house, waiting for the abundance of meat to be handed out (Yehia, 2002). This is one time of year that the poor have an overabundance of meat, when they otherwise have none.

Briggs recorded tribal diet and nutrition in the Saharan Amazigh populations between 1929 and 1933. Most rural people had meat to eat only twice a year, once at Id al-Adha, and one other time at the feast following Ramadan, or at a circumcision or wedding feast (Briggs, 1960: 237- 40). The urban middle class might have meat at three meals a week. He calculated the average Saharan village diet was about 2,500 calories per person, 1,485 of which came from dates and 527 of which were from cereals. The two pints of milk consumed daily, peanuts, and occasional eggs, were their most consistent sources of high quality protein (Briggs, 1960:239). Those who could afford to keep goats consumed their milk both fresh and sour, as well as butter and cheese. Hedgehogs, lizards and locusts were protein sources when nothing else was available. Hammoudi records that in the 1980's only well-to-do Amazigh villagers had meat, though still not more than once a week (1993:35). Without the obligatory meat distribution of Id al-Adha, only the wealthy could afford to consume meat, and the poor would have none. Since half the male goat and sheep population is slaughtered for Id al-Adha, half of the available meat resource is shared evenly across the population rather than being consumed only by the wealthy. Thus, one effect of the ritual action is to redistribute meat protein resources more evenly through the population.

Briggs reported malnutrition among the Amazigh during his investigations there. The nomads suffered from protein deficiency because they were reluctant to kill their animals apart from Id sacrifice, as their herd was their capital investment. Villagers had little meat, as they did not have the resources to maintain stock. He observed symptoms consistent with kwashiorkor in recently weaned infants, and noted that this was the highest period of mortality in nomadic children (Briggs, 1960: 255 – 7). The Id slaughter, and dispersion of meat through the population was a reliable, though brief, annual respite from chronic protein deficiency.

Only male ruminants are considered suitable sacrifice, and this further manages energy flow within the system towards the optimal benefit for the human group. Lactating female ruminants are more efficient converters of plant material to consumable protein than males. The males can be slaughtered once to convert them to consumable protein, but the females can produce consumable milk for repeatable lactation periods of over 300 days each. This not only results in a greater total of calories and protein produced, but it is produced in small, sustained, useable quantities that do not present storage difficulties. The 50 pounds of goat meat must be eaten within 3 days. A doe can be milked, at a production curve from 8 liters per day diminishing gradually to one liter per day over a period of 300 days. This is a convenient amount for a family to consume daily, particularly when there is no possibility of refrigerated storage. A doe's

production is estimated to be 1500 – 1700 pounds of milk during her lactation period, totaling 4200,000 calories and 30,720 grams of protein (Agricultural Handbook #8-1, ARS). Thus, a living lactating doe can provide over 10 times as many calories, and 5 times as much protein, at a more useable rate, than the slaughtered male. The male can provide the calories only once in his life, but the female will have two lactation periods every three years, as well as providing new kids. Therefore, ritually sacrificing the males rather than the milk-producing females maximizes calories and protein available for human use. In metaphysical terms, the male is sacrificed or martyred, for the redemption of the community. In nutrition management terms, the male is sacrificed to optimize the community's protein acquisition. In land management terms, the herd is reduced to prevent overgrazing, and the reduction is made in favor of the most productive members of the herd.

Only domesticated ruminants are specified as acceptable sacrifice, excluding all other potential meat animals. Rumen microbes convert abundant carbohydrate material resources from non-protein nitrogen into the highest quality protein, and synthesize all their own water-soluble vitamins. Thus ruminants can convert cellulosic materials into a useable source of energy for human consumption (The World Bank Technical Paper, 1983: 10 – 14). These animals are the optimum bridge between carbohydrate resources and human nutritional requirements, and their husbandry is specifically encouraged by Id al-Adha. Sacrificing other species of meat animals would not have the beneficial aspect of favoring lactating domestic ruminants, whose protein and calorie production is the most efficient and most useful to the human population. It is difficult or impossible to recover milk from non-domestic female ruminants, such as gazelles or antelope. All other mammals lactate, but their milk production is not recoverable in quantity as is from domestic ruminants. Sacrificing the “lamb of god” manages resources such that humans can benefit from the female's milk production as well as the meat harvested from the yearling male. There is an Amazigh spring fertility festival where male cats are ritually sacrificed and eaten (Briggs, 1960: 25). However, sacrificing and ritually eating a male “cat of God” provides only a pound of meat at most, and little secondary nutritional benefit to human group. The milk of a domestic female feline is not recoverable for human consumption in any significant quantity. The specific preference of goats and sheep for Id al-Adha sacrifice secures for the human population the maximum recovery of energy flow through the consumption of domestic male yearling ruminants and the utilization of the females' lactation products.

Goats are a favored Id al-Adha sacrifice, and are an excellent management strategy., but other domestic ruminants are acceptable sacrifice. Sheep are in many communities the most desirable sacrifice, but their milk production is not as prolific as goats. A Middle Eastern Awassi sheep will have a lactation period of 260 days, producing 550 pounds of milk as opposed to a goat lactating for over 300 days in a tropical environment and producing 2200 pounds of milk. Sheep must have water to drink at least every fourth day (Briggs: 1960: 28) so they are excluded from the more arid regions where goats can still thrive. The removal of male sheep would have a lesser impact on the energy flow within the system in regards to

favoring lactating females, but would have a grater impact than goats in water conservation. Camels are sacrificed in regions too arid to support even goats. Their milk is favored over goat milk, and will produce 6 to 10 quarts a day on average of heavy, sweet milk through their lactation cycle. (Briggs, 1960: 19). A harvested male camel provides more calories through meat than a goat, and the lactation benefits are substantial, so nutritional energy flow is optimized through that slaughter. However, camels are highly valued as a capital investment, as a potential labor source, and their reproduction rate is lower than goats, so their slaughter is avoided. The economic energy flow is less optimized through camel harvest than goats. Yearling bulls may be sacrificed, and it is considered prestigious to do so. The meat yield is so great from a bull that 7 men are allowed to share in its sacrificeⁱⁱ. Cows are prolific producers of milk, however cattle require more water, higher capital investment, and are thus less accessible to the poor (The World Bank, 1983: 23). Cattle ownership confers greater prestige upon a farmer, and herd population recovery time is longer, so owners are reluctant to slaughter them.

Goats are the most economically accessible species to a landless peasant, as well as bringing the greatest and most appropriate financial return. Goats are the least expensive domestic ruminant for purchase, and have the highest reproductive rates. Third world economic studies comparing sheep husbandry to goat husbandry show net profits to be 2 to 10 times that of sheep. In Niger, goats were calculated to be 2 to 3 times more productive than sheep, 4 times more productive than cattle, and 5 times more productive than camels. Even time spent in millet production is estimated to return only .6 kg of food per man hour as opposed to 1.7 k food produced per man hour of goat care (The World Bank, 1983, 69: 71). Thus, Id al-Adha ritual action on goats not only optimizes nutrition resources available to the human group, it optimizes economic and labor productivity.

Id al-Adha Impact on the Ecosystem

Half the male goat and sheep population of a region is harvested for Id al-Adha sacrifice. Sheep require a gallon of water per day (Ensminger, 1969: 711). Goats require two quarts of water per day. This herd reduction reduces the water requirements of the herd by $\frac{1}{4}$ in one day, making that resource available to the more productive female goats as well as humans. Water and pasturage is very limited in North Africa and Arabia; in many areas precipitation is less than 250mm annually. Those resources must be carefully managed for populations to survive. Allotting pasturage and water only it to the most productive animals optimizes energy flow. Pasturage consumed by a male animal beyond one year of age is a wasted energy resource. At that point, as much pasturage has been consumed as can be recovered as meat. Further consumption of pasturage only maintains the animal at the same size. The preferred age of the Id sacrifice is one year, the optimal age for recovering meat created by the fodder consumption. The average Saharan extended family flock in 1930 consisted of 25 camels, 15 sheep, and 50 goats (Briggs, 1960: 222). If the Id sacrifice removes 4 sheep and 12 goats from this flock, 10 gallons of water and 96 pounds of pasturage per day are freed for use by humans and the more productive female goats (Richards, 1921: 188). The

remaining male goats and sheep would largely be suckling kids and lambs under a year of age. If the area's water and pasturage resources could only support the post sacrifice flock of 72, permitting those 16 animals to live would endanger the whole group. The Id sacrificial action then manages water resource utilization towards an optimal goal level by removing the less productive users, and the nomadic flocks are indeed managed at over 70% female, with the male 30% mostly under one year of age (The World Bank, 1983: 16). Goats quickly recover their numbers from this harvest, as the does average a 180% reproductive rate at each kidding, and kid twice every three years (Dey, 1996). Unchecked goatherd population growth could quickly outstrip limited resources, and contribute to ecological degradation and desertification in arid biomes.

For smallholders, harvesting the yearling males from a flock for Id al-Adha conserves resources and optimizes productivity as well as reducing the labor and expense of caring for the flock. In areas with scant rainfall, a goat requires 800 hectares pasturage (Richards, 1921: 183). Smallholders generally have no more than 5 hectares. Therefore, in a village setting, goats must be carefully managed to prevent them from becoming a local nuisance, eating household gardens, flowers and fruit trees. Children and the elderly tend these goats, leading them to graze crop interstices, roadsides, creek banks, and rough, steep, unusable areas. When goats are penned, children and the elderly bring them crop residue, weeds, and household waste as well as water (The world Bank, 1983: 18). This optimizes utilization of the family labor pool by involving the inexperienced and infirm. Still, feeding and tending a male goat rather than a lactating female goat is not the most efficient labor expenditure. Each goat requires about 6 pounds of fodder per day. The time and effort spent bringing fodder to a lactating doe can return five to ten times more protein and calories than fodder brought to an adult male. Time and resources recover more energy when spent on lactating females. Therefore, the impact of Id al-Adha sacrifice is different for the village smallholder than the herder, but the harvesting of male domestic ruminants in favor of the lactating females still acts to optimize the energy flow within the village system.

Contemporary Urban Aspect: Id Energy Flow in the Industrialized Landscape

Though Id al-Adha ritual action has been practiced annually in North African villages and pastures for over 2500 years, the ritual is now enacted in contemporary urban landscapes. Id is an Islamic religious function, and now many Muslims live in crowded cities. In Cairo, perfect yearling male sheep and goats are sought in the countryside and brought to the cities in taxicabs. They are lovingly cared for in parking decks, balconies and rooftops, fawned over, adorned and kissed by the children who regard them as playmates until the day of sacrifice (Jehl, 1999). They occasionally meet with disaster in the city, leaping to their death from these balconies, ramming mirrors in the entryways of buildings, or butting their owners over the edge of the apartment roof. They are still adorned with henna and kohl, and sacrificed with ritual prayers in the space before the sacrificer's home, even if that space is a busy street in front of an apartment block. Unfortunately, some of these animals tear away from unpracticed sacrificers and dash through city streets,

and when caught are beaten and stoned to death (BBC World News: 2001). Crowded cities have few sanitary and convenient places to dispose of blood, feces and offal following the sacrifice, and streets may smell of rotting flesh when sacrificial remains are shoved into drains and sewers. The Id sacrifice and ritual action, long established and highly adaptive in village or pastoral life, has become maladaptive and lamented by government agencies, newspapers and television in the industrialized world.

Some halal slaughterhouses attempt to accommodate Id ritual action for the city dwellers, such as Harvest Farms near Austin, Texas. There, a Muslim head of household can purchase and ritually slaughter a sheep or goat in an environment designed and zoned for safe, sanitary, and efficient carcass handling, for about \$150 (Rauf, 2001). The German government suspends slaughter safety and zoning regulations for a day to permit the sacrifice (The Muslim News, 2001), the Turkish government sets up special sacrifice facilities for city dwellers. Increasingly, city dwellers suffice with frozen lamb or goat imported from New Zealand and purchased at a supermarket. These actions still benefit the nutrition of the human group, as the meat must be distributed to the poor through the network of the community and mosque, but the lactation benefits of the females may be completely lost if the meat is imported from a distant agribusiness corporation. Thus, implementing compromises of ritual action and tradition in the industrialized urban landscape negates much of the Id's optimizing effect on energy flow.

Id al-Adha: Religious Observance and Ritual Action Optimize Energy Flow

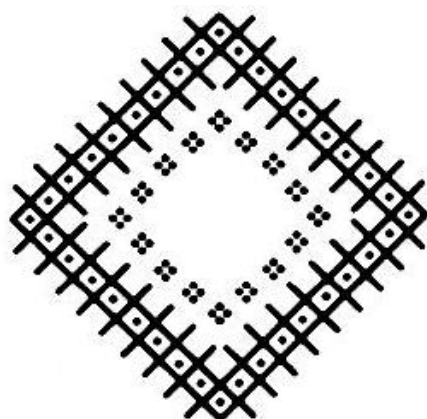
The Id ritual action of yearling male domestic ruminant sacrifice to secure fertility and well-being for the human group and the ecosystem can be demonstrated to have the effect of optimizing energy flow for the human populations in North Africa. The religious obligation of Id sacrifice ensures that the optimizing effect is maintained, as do henna and other ritual actions and festivities. The specific choice of goats offers the greatest energy flow optimization for people in village and pastoral systems, with sheep being nearly as effective. The sacrifice's effect on energy flow is highly adaptive in both village and pastoral systems, though when introduced into industrialized urban systems, energy flow optimization is reduced, and urban public sacrifice can become maladaptive. The henna, purifactory, festive, and religious ritual actions Id al-Adha ritual actions have no effect on optimizing energy flow within the village and pastoral systems of North Africa. However, the aspects of purification, redemption, social standing and obligation do raise the level of compliance so that religious law, henna, and other ritual actions maintain energy flow optimization.

Patterns to Deter the Evil Eye from Amazigh Villages between 1870 and 1930

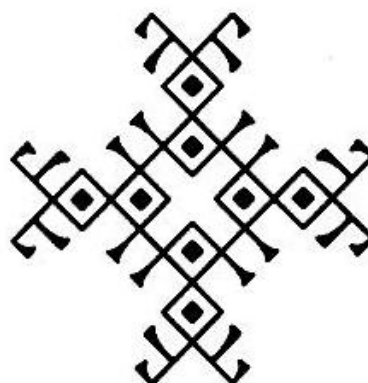
People hennaed these and similar patterns on the palms of men, women and children at Id al-Adha. These patterns protected the sacrifice and all participants from malevolent spirits. Prior to 1950, the patterns were usually applied with a stick. Since 1970, a blunted syringe has become the most popular Moroccan henna application tool. Id patterns were simpler than bridal patterns because women were busy with holiday preparations and had little time to apply and care for henna.

Ait Ouaouzguite Patterns

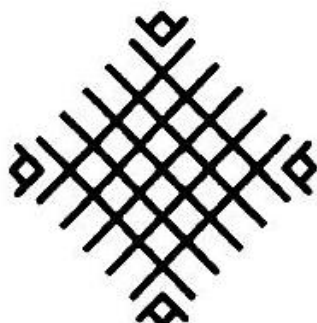




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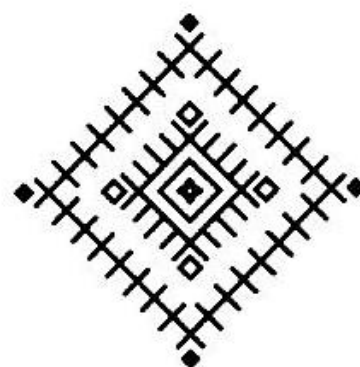
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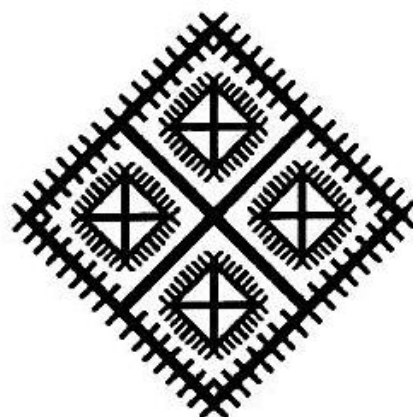
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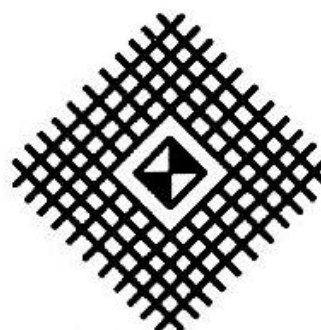
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Beni M'Tir



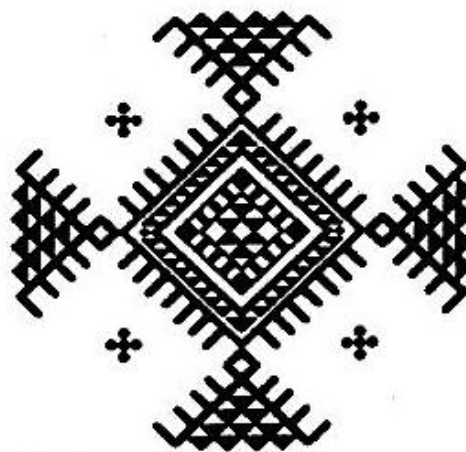
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Beni M'Tir



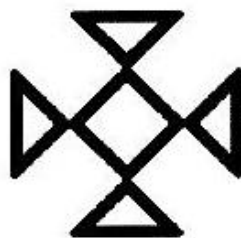
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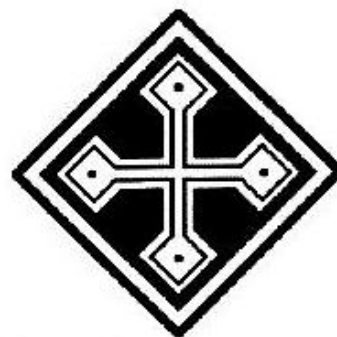
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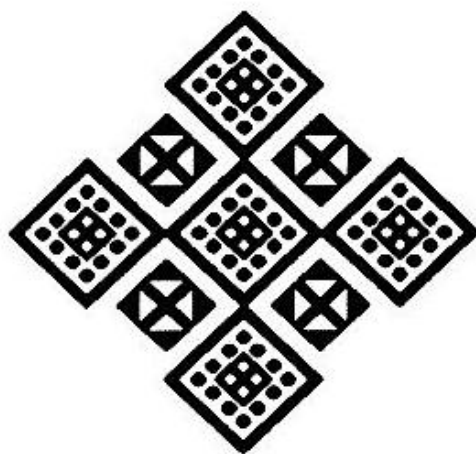
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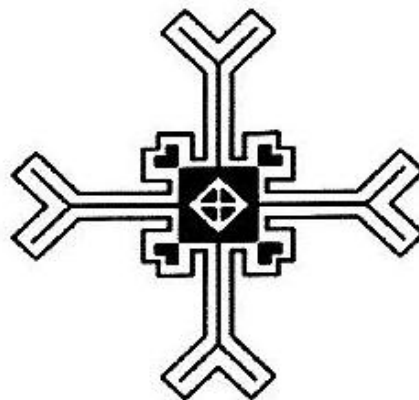
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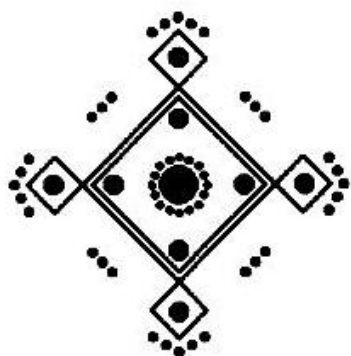
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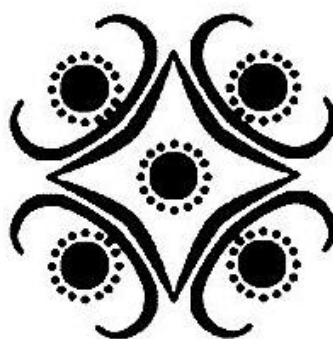
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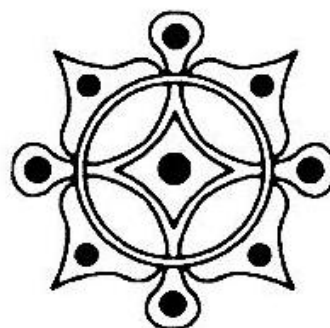
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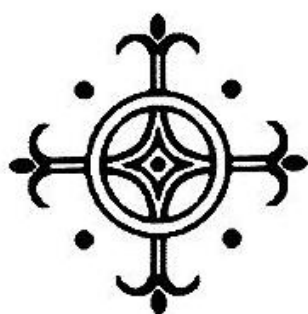
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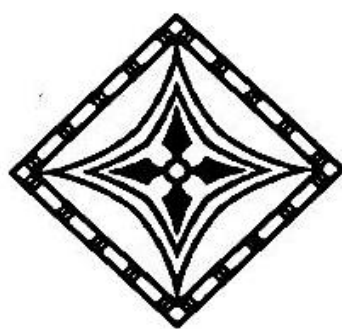
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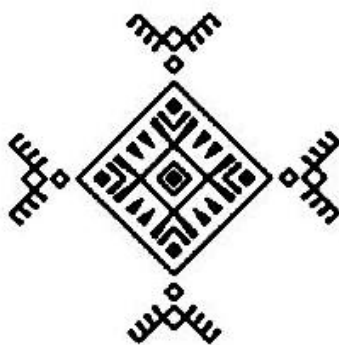
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Ait Kourban



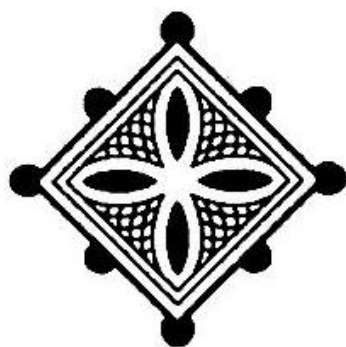
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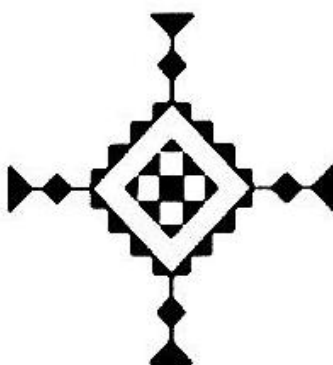
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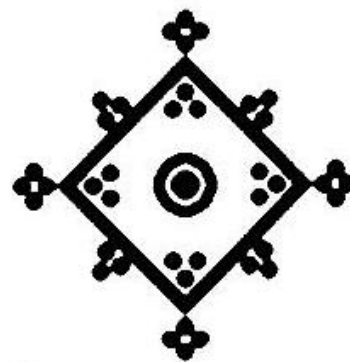
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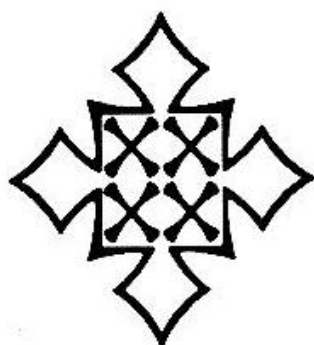
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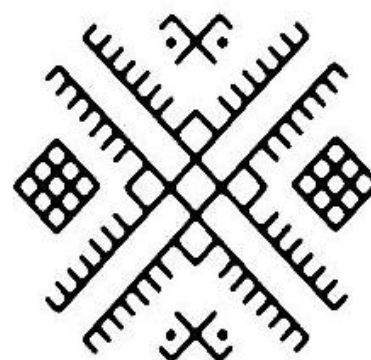
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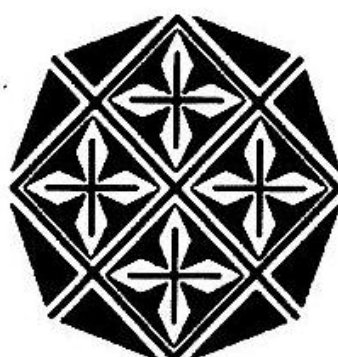
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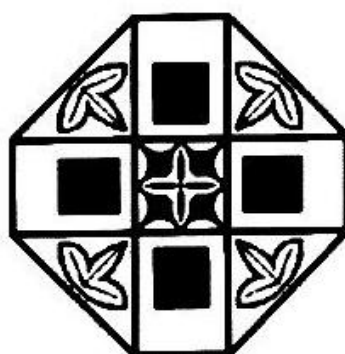
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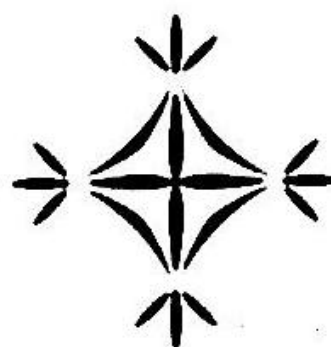
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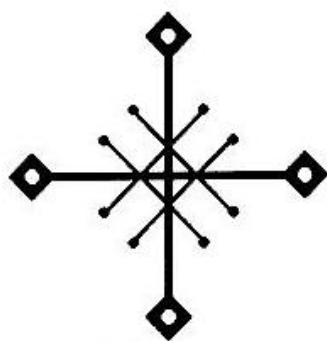
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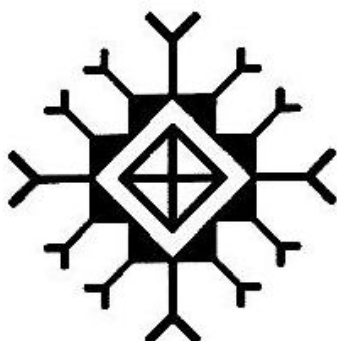
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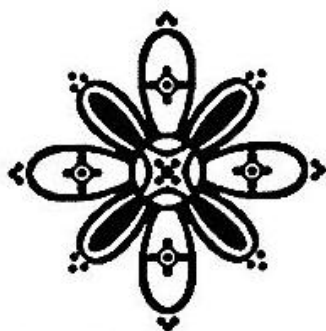
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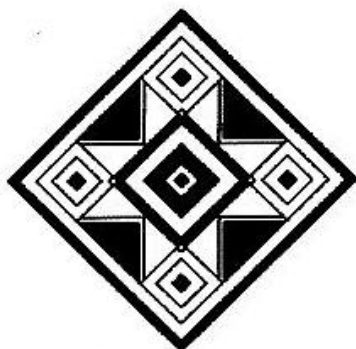
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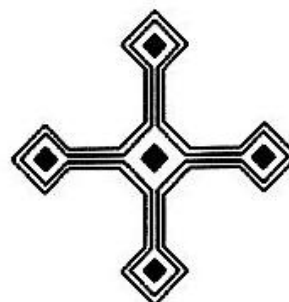
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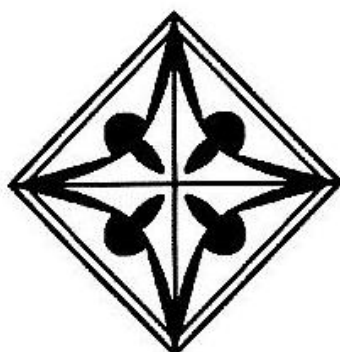
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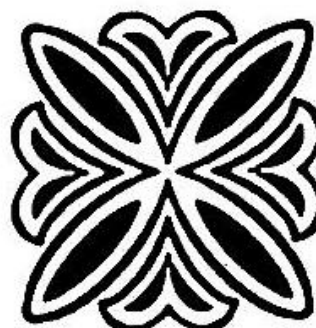
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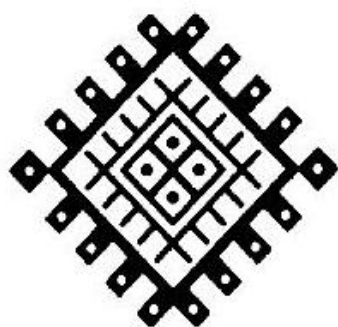
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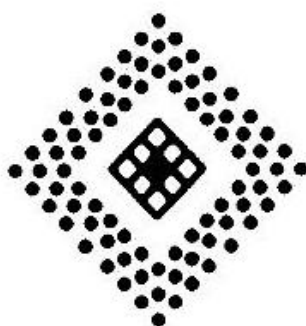
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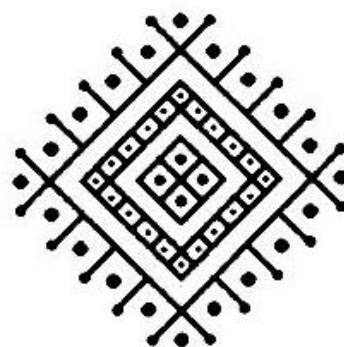
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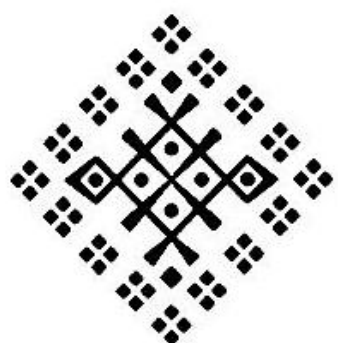
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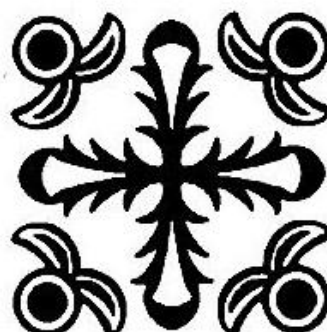
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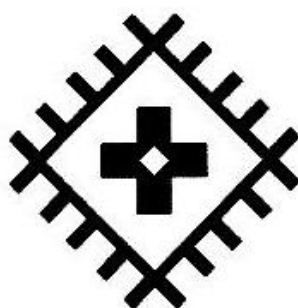
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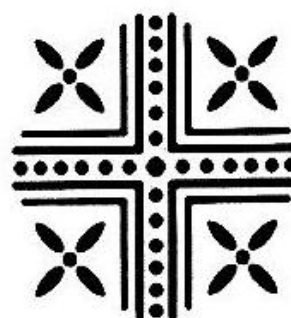
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ⁱ According to the Koran, Ibrahim had a dream in which he was told to sacrifice to God his most valued possession. He sacrificed his favorite goat and his favorite sheep but the dream reoccurred. He realized the dream meant that he must his son, Ishmael. Ishmael was willing, and said his father must do as Allah commanded. Ibrahim blindfolded himself and sacrificed his son, but a voice from heaven told him to look down. He saw that God had substituted a ram at the moment of sacrifice, and that Ishmael was alive. The Milky Way is believed to be the path that the ram traveled from heaven to take Ishmael's place in the sacrifice.

ⁱⁱ Elements of Sacrificial Slaughter, as outlined by Islam:

Sacrificial slaughter on Eid al-Adha is a strongly recommended tradition. It reflects the fact that the Muslim being a committed, obedient servant of Allah is always ready to sacrifice anything, even his life, in Allah's way. Eid sacrifice is an imitation and remembrance of the great sacrifice that Prophet Ibrahim submitted to God by attempting to sacrifice his own son, Ishmael, to fulfill the command of Allah Almighty.

The following are the essentials of sacrifice:

- 1) Allah's name (Bismillahi Allahu Akbar) must be said while slaughtering.
- 2) The sacrifice cannot be slaughtered before Eid prayer. It should be done immediately after prayers or in the three days after Eid.
- 3) The Sacrifice can be a goat, sheep, cow, bull, buffalo, or camel of either sex. Pregnant female animals should not be slaughtered. Seven persons can share in the last named four animals.
- 4) The meat of the slaughtered animal should be divided into three parts. It is essential to give one third as gift to the poor and the needy. One third should be given to friends and relatives and one third kept to oneself.

5) For one who intends to make the sacrificial slaughter, it is sunnah not to shave his hair or clip his nails after Dhul Hajj moon is sighted, until the time of the slaughter (Sahih Muslim)

The Muslim Students' Association of the United States and Canada

http://www.usc.edu/dept/MSA/fundeamentals/pillaars/prayer/Eid-Prayers_1.html

iii The Quran says with regard to the Eid al-Adha sacrificed animals”

“Not their flesh, nor their blood, reaches God, but what reaches him is your righteousness and doing of duty.” 22:37)

Hazrat Mirza Ghulam Ahmad explained this by saying that the true sacrifice is not of the animal which is being slaughtered, but of the animal desires of the person doing the sacrifice.

“Lessons of the Pilgrimage and ‘Id al-Adha” The Light and Islamic Review, January – February 1992; p. 4

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