



# ARCHAEOZOOLOGY OF THE NEAR EAST

## V

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# **PALESTINIAN BUTCHERING PATTERNS: THEIR RELATION TO TRADITIONAL MARKETING OF MEAT**

Carole R. Cope<sup>1</sup>

## **Abstract**

To date, over 10,000 animal bones from the various intertwined cultures of the ancient port city of Caesarea have been analyzed. The excavations by the Combined Caesarea Expeditions are still ongoing. The materials analyzed for this study date from AD 640 to about AD 900, the period in which Islam was establishing itself in Palestine. The pattern of butchery that dates from the early Islamic centuries is striking for the degree to which it differs from the Roman and Byzantine patterns that predate it. It may be that the pattern is related to traditional marketing of meat in urban areas of Palestine. Investigations were conducted using several methodologies ranging from archeological ones that estimate minimum numbers of individuals and relative frequencies to classic zoological tools, such as biometrics and T. Grand dissections that estimate body size, tissue distribution, and meat weights.

## **Résumé**

Jusqu'à ce jour plus de 10,000 restes animaux provenant de diverses cultures intimement liées de l'ancien port de Caesarea ont été analysés. Les fouilles menées par les Expéditions conjointes de Caesarea sont encore en cours. Le matériel analysé pour cette étude date de 640 à environ 900 de notre ère, la période à laquelle l'Islam s'établissait en Palestine. Le schéma de boucherie des premiers siècles de l'islam est remarquable pour sa grande différence avec ceux de la période romaine et byzantine qui précèdent. L'utilisation de plusieurs méthodologies a été nécessaire pour estimer le nombre minimum d'individu ainsi que les fréquences relatives. La biométrie et la dissection selon T. Grand qui permet l'estimation de la taille du corps, de la distribution des tissus et des poids de viande, ont également servi dans les approches méthodologique.

**Key Words:** Caesarea, Cut marks, Muscle stripping, Meat storage, Late Roman-Islamic butchering

**Mots Clés:** Caesarea, Traces de découpes, Dégagement des muscles, Stockage de viande, Boucherie romaine tardive- islamique

## **Introduction**

The site of Caesarea, which lies on the coast of Israel between the modern cities of Haifa and Tel Aviv, was one of the most important ports in the ancient world. The excavations by the Combined Caesarea Expeditions are ongoing but, to date, over 10,000 animal bones from the various intertwined cultures of ancient Caesarea have been studied.

The materials analyzed for this study date from AD 640 to about AD 900, the period in which Islam was establishing itself in Palestine. The pattern of butchery that dates from the early Islamic centuries is striking for the degree it differs from the Roman and Byzantine patterns that predate it. It may be that the pattern is related to traditional marketing of meat in urban areas of Palestine. Investigations were conducted using several methodologies ranging from archeological ones that estimate minimum numbers of individuals and relative frequencies to classic zoological tools, such as biometrics and T. Grand dissections that estimate body size, tissue distribution, and meat weights (Grand 1989).

## **Roman and Byzantine butchery**

The butchering patterns for the Roman and Byzantine layers at Caesarea were characterized by a uniformity that points to a standard technique employed by all professional butchers. The methods varied in only small particulars from one species to another and were probably related to the different problems presented by the dismemberment of a large carcass versus a smaller one. Briefly, the pattern of butchery seen here seems crude when compared with the later Islamic one. Carcasses seem to have been dealt with when lying on their sides. Proximal and distal ends of long bones were hacked through with wide bladed instruments, probably axes or heavy cleavers. Flesh seems to have been removed from the bone by filleting down the

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shafts using other large tools or perhaps the same ones. This does not seem to have been a delicate operation and bone splinters must have been common. In some instances, long bones were nearly whittled away. Carcasses appear to have been quartered regardless of species size. The only difference apparent between the Roman and Byzantine patterns seems to have been the addition of another tool to the kit of the professional butcher during Byzantine times, a fine bladed knife for filleting and meat removal. The described method, while effective, has drawbacks when considered within the context of the climate of the Middle East. Meat butchered in this way must be sold quickly because it spoils rapidly without refrigeration.

In contrast, the Islamic pattern which will be described below, appears refined, hygienic, and well suited to the climate of Palestine before refrigeration. This in no way implies that all Islamic populations in the area butchered in the same way. The Bedouin have always dealt with this chore differently. After skinning and gutting the animal, they divided the carcass longitudinally with an ax and then removed individual sections and limbs for distribution among their women folk (L. Horwitz, personal comm.). But the Bedouin is usually processing his own animals from his own flocks and herds. The pattern described below is an urban one, where the butcher is a middleman selling animals he has not raised to city dwellers. It stands to reason that meat butchered by the owner of a herd for his own use may show a very different pattern than meat butchered by a professional for sale in an urban context.

### **Butchering patterns from Islamic Caesarea**

Faunal remains from Caesarea areas Islamic I6, I4, and CC have cuts and marks interpreted to be the result of Islamic period butchering patterns (Cope 1999). The butchering patterns of Islamic Caesarea are characteristic of a technique in common usage in Palestine for centuries (Senora personal communication, Cope 1999). This archaic technique called "muscle stripping," utilizes the natural division of connective tissues and fascia between muscle groups to facilitate meat removal, it is still used by traditional Palestinian butchers today, although it is becoming increasingly rare. The series of cuts that this particular pattern leaves on bone is different enough from Byzantine and Roman patterns to provide a useful tool for cultural differentiation.

#### *Skinning*

The entrance cuts for carcasses of all species ring the metapodia. However, for Islamic areas metapodia are more deeply ringed, usually completely severing the annular ligament and biting deeply into the underlying bone. Nicks were evident on the medial epicondyles of femora, tibiae, humeri, and scaphoids and cuneiforms indicating that the skin was opened along the inside of each limb in the usual way. Unlike Roman and Byzantine butchery, horn cores of cattle were seldom ringed for skinning while those of ovicaprids usually were. On the other hand, mandibles of all ungulate species usually bore marks that indicated that the skin had been loosened along the line of the jaw. Occipitals in the ovicaprid category were often still articulated with the basicrania while those of Bos and Sus never were in spite of their more robust condition. At the same time, most mandibles of all species exhibited slashes medially to facilitate removal of tongue muscles, hyo-epiglotticus, epiglottis, and hyo-glossus. From these clues I suggest that while the heads of ovicaprids were skinned whole, those of Bos and Sus were often left unskinned.

#### *Dismemberment and meat removal*

Dismemberment and meat removal are considered together for Islamic Caesarea because it appears that these two aspects of the butchering pattern were usually performed at the same time. The skulls of all ungulates had been removed from their appendicular skeleton by cutting the ligamentum nuchae, severing the brachiocephalicus, sternocephalicus, and sternohyoideus muscles. Cuts on the occipital condyles and the cranial end of atlases indicate skulls were then removed at this point. After the skull was removed, the treatment seems to have varied according to species or perhaps size class. Cattle heads probably had the skin loosened along the mandible and the masseter slashed to remove that meat muscle. The mandible could then be pulled aside to take the tongue. Alternately, the high instance of cuts along the ventral jaw line indicates that the tongue was sometimes removed by cutting out the mylohyoideus and removing the tongue from between the dentaries. All occipitals of cattle had been broken away to secure the brain. Taken together, the damage done to the skulls of cattle and pig appeared to be more extensive than that done to

the ovicaprine category. Possibly then, the skull of ovicaprines were usually skinned whole and displayed for sale intact as they often are in the Middle East today.

First, second, and third phalanges were rare for all ungulates. Probably carcasses were partially processed, skinned, gutted, feet removed and then transported into the city for dismemberment and sale.

No species appears to have been quartered prior to meat removal regardless of size class. I suggest that carcasses were displayed for sale skinned and with heads and feet removed but otherwise whole. This is a practical method to retard spoilage and aid the practice of muscle stripping still in common use. Carcasses are suspended by the simple device of placing a steel hook or shank between the metatarsal and suspensory tendons of the hind limbs and hoisting from a beam or ceiling. Traditionally, the customer requests weight, species, and planned usage and the butcher chooses an appropriate section. The tool employed is usually a cleaver or heavy knife capable of severing tendons as well as the distal ends of the bones of the articular skeleton. The scapula usually bore cuts that would sever the trapezius, omo-transversarius, and the origin of the deltoid. With these muscles stripped the lateral tuberosity of the humerus was exposed. Most humeri had deep cuts in this area corresponding to the origins of the biceps and a bit further down for the lateral head of the triceps. Muscles were stripped as the butcher moved down the limb utilizing the fascia between major muscle groups with a minimum of fillet or meat removal marks down the shaft of the bone. The hind limb was treated in a similar fashion with appropriate deviations pertaining to the anatomy of the carcass, i.e. distal femora and proximal tibiae of all species usually displayed heavy cuts or chops that would serve to sever the thick patellar tendon. It is interesting to note that most cut marks of all species tended to cluster around the lateral sides of proximal and distal ends of bones. The lateral sides are those that would normally be exposed to a butcher stripping a suspended carcass. The exceptions tended to be those muscles that are particularly relished, i.e. iliopsoas, major and minor or "fillet mignon." Medial iliac and lumbar vertebrae of all species displayed fillet cuts in this area that would indicate that these prime cuts would have been removed as a unit and cuts on most bones would have been produced by a single rather heavy tool, probably a cleaver. Cuts are deep and V shaped quite wide at the top and narrow at the bottom. Cuts, while repetitious, seldom show any sawing movement.

In sum, the butchering patterns in the Islamic section of Caesarea indicate that carcasses were butchered by suspending them by their hind limbs and cutting the proximal and distal insertions of muscles and stripping them from the bones. This method leaves the muscles beneath still untouched and surrounded by their mysentaries. Carcasses treated in this fashion are kept clean and will stay fresh and palatable for up to a week in temperatures as high as 38 degrees centigrade (O'Connor 1989). This method has obvious hygienic advantages in a hot climate before refrigeration.

## **Food preparation**

This pattern of meat dismemberment and meat removal requires a cooperative effort on the part of the customer and butcher. The butcher has enough knowledge of local cuisine to respond with offering the appropriate group of muscles whether the customer requires meat for a goat stew or a tender portion of lamb for grilling. Some trust in the butcher's knowledge is also implied. On the other hand, the valued customer often has a continuing relationship with one shop where they may be sure of receiving value for their patronage. This system, although disappearing, has long been part of Arab culture (Senora, personal comm.). The meats removed by stripping are best employed by stewing or grilling. Charred bone is extremely rare for all Islamic areas so roasting with the bone was probably equally rare. I suggest that the usual cooking method involved long simmered stews for tough and tendinous portions of *Bos* humeri and femora, as well as the flexor and extensor muscles that surround the radius and ulnae of all ungulates. More tender portions such as the back flexors and the iliopsoas muscles were probably grilled or pounded to make a variety of dishes from meat pastes such as Kain Budu or "Ladies Thighs" (Roden 1968).

## Conclusion

The butchering patterns for the Islamic centuries at Caesarea are far more sophisticated than Roman and Byzantine ones and more suited to the local climate. In addition, the Islamic method reflects the traditional method of marketing meat in the Arab world where the reciprocal relationship between butcher and customer is of prime importance.

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