POSSIBLE HUMAN SACRIFICE AT THE ORIGINS OF ROME:
NOVEL SKELETAL EVIDENCES

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SUMMARY

Recent archaeological excavations at the Carcer/Tullianum, in the Roman Forum, allowed the unexpected recovery of human burials associated with the very early foundations of the monument, at the beginning of the iron age. The study of these burials resulted in interesting paleopathological discoveries, concerning the skeleton of a strongly-built male, radiocarbon-dated between 830 and 780 BC. The telltale posture of the skeleton and the presence of a massive perimortem blunt force trauma of the skull shed light on the mode and circumstances of the death of this subject, and are suggestive of ritual sacrifice. The archaeological, mythological and historical backgrounds, combined with the paleopathological evidence, help us to get a glimpse of life and death at the origins of Rome.

Discoveries at the Carcer/Tullianum in the Roman Forum.

The novel findings which are the subject of the present article occurred during recent excavations, that explored the most ancient archaeological levels of the monument known since the Middle

Key words: Ancient Rome - Capitol hill, paleopathology - Human sacrifice - Cranial fracture.
Ages as Carcer Mamertinum (Mamertine prison), in the north-eas
tern sector of the Roman. This very ancient monument, originally
united to the fortification system of the Capitol, has been preserved
almost intact through the centuries. It is composed of two
superimposed structures and, because of its dual nature, is presently
designated Carcer Tullianum. The upper structure, the Carcer, built
as a maximum-security prison for the enemies of the Roman state,
dates in its present form to the IV Century BC, while the extant
lower structure, the Tullianum (from the Latin tullus, i.e., pool of
spring water), originally a vaulted circular reservoir for the water of
a still existing spring, can be dated to the VII Century BC.

The area of the Carcer Tullianum that has been recently
excavated corresponds to the north-eastern perimeter. These
excavations permitted a better understanding of the most ancient
construction phases of the monument and of its early relation with
the Capioline fortress. In fact, stone walls predating the extant
structures, pro-

ably connected with the defensive system of the eastern slope of
the Capitol, were unearthed. In the spring of 2000, while excavating
along the eastern foundations, facing the valley of the Roman
Forum, archaeologists unexpectedly found the skeletal remains of
three individuals, resting in an undisturbed articulated context, with
no grave goods, in a layer of yellowish sandy silts. The burials were
crowded in very limited space, one above the other. No stones or
other heavy weights, which could have deformed or crushed the
bones when still fresh, were associated with the skeletons.

Based on cranial and/or postcranial morphology, the skeletal
subjects were identified as a male, aged between 35 and 45 years at
death, a female, aged between 30 and 35 years, and an adolescent,
aged 14 to 16 years at death. Radiocarbon dating, by AMS-standard
delivery, yielded calibrated C14 ages of 830 to 780 BC for the male,
820 to 770 BC for the female, and 850 to 780 BC for the adolescent.
These dates fall within the early iron age and precede the traditional
chronology of the legendary Romulean foundation of Rome. The
skull of the female, interred in supine position, and of the
adolescent, limited to the elements of the lower limbs (the rest being
lost under the foundations of a medieval wall), did not show any rele-
vant paleopathological changes. In contrast, the male skeleton
(Figure 1 A-B) revealed interesting lesions, which, combined with
postural evidence, shed light on the circumstances of his death.

Evidence of violent death

The male skeleton was lying on its left side with the skull and
cervical spine flexed backward, the bones of the arms and
forearms extended behind the thorax and the elements of the right
hand rested over those of the left hand behind the pelvis (Figure
1 A-B). The in situ position of the skeleton strongly suggested
that the neck had been forced backward, perhaps by ropes tied to
the back or by some rigid support such as a stick placed under the
chin, and that the hands were tightly tied on the back. No
archaeological evidence of ligatures was found in the area of
the wrists and arms. With the exception of the upper half of the right
femur, the skeletal elements of the lower limbs could not be
recovered, since they were lost under the above-mentioned

Figure 1 A-B – Views of the male skeleton in situ, showing backward flexion of the skull and
the bones of the arms and forearms distended behind the thoracic cavity. The skeletal elements
of the lower limbs are lost under the medieval stone wall at the bottom of A. As shown in B, the
skull manifests evidence of the recent damage which occurred at discovery.
the skull, as well as the facial skeleton, were lost at discovery and were not available for reconstruction.

In spite of the recent damage to the basolateral aspect, the left parieto-occipito-temporal portion of the neurocranium retained evidence of a wide gap from an ancient cranial fracture (Figure 2A). This ramifying fracture, which separated the temporo-parietal region from the occipital, followed the temporo-occipital suture from the site of recent damage of the skull to the asterion landmark, and continued along the parieto-occipital suture, for at least 4.2 cm (Figure 2A-C). At the upper end, the fracture line, still ramified, ran just anterior to the parieto-occipital suture. Although the fracture passed through and dissociated suture lines, it is to be differentiated from post mortem bone separation because the occipital squama was pushed inward for about 0.7 cm. Such deformation could have taken place if the lesion had occurred when the cranial bones were still fresh and elastic. The lack of signs of reactive repair on the adjacent bone surfaces (e.g., formation of new woven bone) indicated that the lesion was perimortal, and possibly concomitant with death. The latter is consistent with the macroscopic appearance of a blunt force trauma.

The cranial injury could have been caused by a violent blow, inflicted with a blunt weapon such as a large stone or a club, that hit behind to the fracture line, as suggested by the inward dislocation of the occipital squama. Assuming that the individual who inflicted the blow was right-handed, the left-sided localization of the fracture would imply a face-to-face attack. Unfortunately, the recent damage done to the left lower temporo-occipital region did not permit any assumption with respect to the supposed impact.

Other paleopathological evidences

The other relevant paleopathological lesion concerning the male skeleton regarded the upper lumbar part of the spine, where the body of L1 was crushed on the antero-superior portion of the body of L2, causing a concave deformation of the end plate of L2 (Figure 3B). In addition, there is hyperopacification of the bodies of L1 and L2, attributable to condensation and thickening of the bony trabeculae. Because of the collapse of L1, the thoracic spine is over-curved kyphotically. There is also evidence of scoliosis, with greater loading to the left, as indicated by the disproportion between the right and left apophyseal articular facets. These spinal alterations might be linked with a thickening of the outer surface of the occipital due to supra-osteal bone apposition, probably secondary to chronic stress of the occipito-atlantal ligaments.

In spite of this, the tall stature, estimated at 175-177 cm, not taking into account the kyphotic deformation of the spine, the pronounced muscular insertions, and the overall robustness of the bones point to an individual of remarkable strength.

Lesions of vertebral elements can be due to a variety of pathological causes, including trauma, tuberculosis, pyogenic osteomyelitis, brucellosis, fungal infections, Paget’s disease, malignant tumors, and echinococcosis. In the present case, we are
The evidence of the Tullianum and human sacrifice in early Rome

The site of Rome appears to have been more or less intermittently inhabited since the early Bronze Age (before 1700 BC), and the first stable occupation dates back to the Middle Bronze Age (1700-1350 BC), much earlier than the legendary Romulean foundation, traditionally said to have occurred on April 21st of the year 753 BC\textsuperscript{12}. At the beginnings of the VIII Century BC, around the period of the deaths of the three skeletal subjects of the Tullianum, Rome was a proto-city formed by huts made of wood, mud, and hay, scattered among woods. The earliest stone fortifications defending the Capitol had been already erected\textsuperscript{13} and the burial areas of the then existing villages on the Capitol and on the Palatine were certainly not near the Tullianum\textsuperscript{14}.

The hypothesis that the burials of the Tullianum might be related to human sacrifice and/or penal execution should be considered in relation to historically documented ancient traditions and beliefs. In the early history of Rome, there was no clear distinction between penal death and ritual killing\textsuperscript{15}. According to the testimonial of the ancient authors, the early cults of Saturn, the divine founder of Latium, of Vulcanus, the god of fire (connected with the spirits of the ancestors), of Dites, the infernal god, and of the Dii Manes, the spirits of the ancestors, included the ritual killing of humans\textsuperscript{16}. The cult of the Dii Manes was associated with structures marking the outer limits of the community, such as defensive walls\textsuperscript{17}. Moreover, based on archaeological and topographical evidence, the site of the Tullianum may have been linked with the cult of Saturn\textsuperscript{18}.

It is intriguing that the sacrifice of humans with hands tied to the back is reflected in one of the most ancient sacred festivities of Rome, the Sacrificio Argeorum, dating to the IX century BC\textsuperscript{19}. According to the legend, the Argei were noble Acheans, and, as such strangers, that could have threatened the customs of the community. Upon reaching the site of Rome, they were captured and sacrificed into the Tiber,

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image}
\caption{A-B. View of the first and second lumbar vertebrae (A), with corresponding radiographic image (B), documenting ankylosis, collapse of the anterior part of the body of L1, and concave deformation of the upper posterior part of the body of L2.}
\end{figure}
with hands and feet tied. This legendary event, which might have reflected early contacts with Greeks lost in the exploration of the west coast of Italy, was said to have occurred before the arrival of Hercules, the protector of merchants, symbolizing the Greek civilization, who changed the ritual substituting realistic effigies made of weeds to living human beings. According to a variant of the myth, the Argei were buried at sacred sites, one for each district of Rome. A sacred role of the sacrificed human body and of its tangible relics is also apparent in a variant of the legend concerning the death of Romulus, killed by the senators and butchered in pieces that were buried in each of the districts of Rome.

At the Tullianum the paleopathological evidence and the archaeological data may support the ancient historical sources that suggest an important role of human sacrifice at the origins of Rome.

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Laura Ottini, Luciana Rita Angeletti, et al.

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468

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Articoli/Articles

ALDO CASTELLANI (1874-1971).
UN VIAGGIO SCIENTIFICO LUNGO UN SECOLO

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SUMMARY

ALDO CASTELLANI (1874-1971)
A CENTURY-LONG SCIENTIFIC TRAVEL

Aldo Castellani is an international scientist, well known for his essential contribution to the aetiological researches on sleeping-sickness. During his career, that took him to many parts of the world, he studied a number of tropical diseases and he obtained important results, like the discovery of new therapies and some fundamental laboratory techniques. His academic career lasted about seventy years, during which he increased thanks to his works the scientific knowledge of Italian and foreign universities. Basic in his life is the period in which he headed the Institute of Tropical Medicine at the University of Rome, making important choices for Italian public health; for instance, during the Italian-Ethiopian War he proved to be an “additional weapon” for the Italian Army. He spent the last part of his life travelling, but he remained personal physician to the former Italian king Umberto II, exiled in Cascais and professor in the Tropical Medicine Institute of Lisbon.

The aim of the authors, in homage to Aldo Castellani's memory, is to emend, as far as possible, the occasional errors in the papers dedicated to him.

È molto probabile che i fiamminghi Professor Nicolas Tulp e Dottor Joan Dyeman sarebbero oggi dei carneade qualsiasi se le rispettive lezioni di anatoma non fossero state immortalate dal pennello di Rembrandt. Lo stesso non può dirsi di Aldo Luigi

Key words: Castellani - Sleeping sickness - Tropical medicine teaching

469