Giving a perspective on forensic anthropology in Italy is, to say the least, difficult owing to the fact that academic and professional aspects are confused. However, there is a bright side: after years of painstaking insistence pathologists, magistrates, and judges are beginning to understand and appreciate the discipline and its expertise. In addition, the recognition of contributions that forensic anthropology can make to examinations of the living is steadily increasing (for example, facial identification), creating more demand for anthropologists within forensic contexts. Although forensic anthropology in the Italian setting can still be considered as “developing,” the medicolegal culture is slowly changing, and ever more often descriptions of forensic scenarios include the words *anthropology* and *archaeology.* This chapter provides a brief history of forensic anthropology in Italy and illustrates the present status through examples of operative cases concerning several fields of application.

**Forensic Anthropology in Italy: History, Politics, and Academics**

Forensic anthropology in Italy was first applied almost two decades ago, with the work of two major Italian Universities: Bari in the south and, shortly after, Milan in the north. These two academic centers started to undertake research and to publish in areas concerning sexing, ageing, personal identification, and other related issues. This activity not only contemplated academic matters but also included the task of enlightening magistrates, judges, and institutional investigating bodies regarding the potential benefits that could be obtained through the study of skeletal remains. The University of Milan went on to create what has now become the Laboratorio di Antropologia ed Odontologia Forense (LABANOF), an internal center based in the Institute of Legal Medicine within the State University of Milan. LABANOF promotes research in the fields of forensic anthropology and odontology, teaching, and professional activity. There are 13 university departments of Legal Medicine in Italy that offer postgraduate training in forensic pathology and 11 universities that offer undergraduate training in physical anthropology. However, the University of Milan is currently the only institution that offers postgraduate training in forensic anthropology in the form of a Masters course (MSc) or a *Corso di Perfezionamento* (a course of 50 hours that includes both theoretical and practical teaching). Since the academic year 2008/2009 LABANOF–University of Milan, the University of Bologna, and the University of Pisa have
collaborated in developing a Masters course in bioarchaeology, palaeopathology, and forensic anthropology. To date, the MSc represents the most comprehensive opportunity for learning osteology, palaeopathology, and forensic anthropology in Italy. Finally, since 2012 the University of Milan has organised an annual summer school in anthropology for students of arts, natural sciences, medicine, and trainees in legal medicine, which is held in Pontestura, in the nearby region of Piedmont. It offers students a one-week intensive course in practical osteology and forensic anthropology.

No undergraduate courses in forensic anthropology are currently offered in Italy. Many forensic pathology and physical anthropology professors occasionally include lectures regarding forensic anthropology in their pathology or anthropology course. However, proper training is practically non-existent. This is true for two main reasons: first, because forensic anthropology is a relatively new applied discipline and, second, no one really knows whether the forensic anthropologist should come from an anthropological background or that of pathology. This question has been considered in a recently published textbook on forensic anthropology and pathology:

What is a forensic anthropologist? Particularly across Europe, this is a very delicate issue, and it may concern experience and training more than specific academic qualifications, at least at the moment. In Anglo-Saxon countries, namely the U.S. and the U.K., the forensic anthropologist at least falls into a defined category, i.e., that of he/she who practices forensic anthropology, this being “the application of physical anthropology to the forensic context.”

(Cunha & Cattaneo 2006)

Compared to forensic anthropology in the United States, in Europe the subject is lacking in organisation as far as training is concerned. One of the obstacles that must be overcome in Europe is cultural. In many European countries there is a distinct division between experts who work in a forensic context—namely, forensic pathologists and those who work in the anthropological context, mainly anthropologists working on archaeological material. For example, the scientific and forensic community have come to realise that there is a void when human remains are found in a forensic scenario: most forensic pathologists do not have anthropological or osteological expertise, and classical anthropologists may not be used to working with human remains still bearing residual soft tissue or that have been recovered from a modern crime scene. In addition to ethnographers, cultural anthropologists, and geneticists who work on human variation, physical anthropologists have always included practitioners, considered to be experts in human osteology. Thus the anthropologist’s contribution to anything coming from a forensic context traditionally deals with the estimation of ancestry, sexing, ageing, and stature; in other words, similar assessments to those undertaken by the anthropologist when studying skeletal remains of ancient populations.

However, traditional anthropology is not sufficient for the forensic context. Forensic anthropologists must also deal with questions regarding identification and manner of death, which have both legal and social implications. The anthropologist and pathologist both have to deal with the human body in toto; the more soft tissue is still attached, the more it is within the domain of the pathologist; the more skeletonised, decomposed or burnt, the more it falls into the domain of the anthropologist.

One could go as far as to say that forensic anthropology is a field that works in parallel with forensic pathology. In other words, just as the pathologist deals with the human cadaver from the crime scene in order to establish time and cause of death, the anthropologist, when nothing remains of a victim but bones, must deal with the search for and correct retrieval of the skeleton
Perspectives from Italy

(turning to disciplines such as forensic archaeology) and with such issues as victim identification and the detection of signs ascribable to trauma that may lead to establishing the cause and manner of death.

While forensic anthropologists typically deal with the dead, practitioners are increasingly requested to handle the identification and ageing of living individuals. In the past few years specialists have applied notions of anthropology and associated disciplines to ageing juvenile perpetrators (Cameriere et al. 2012), identifying bank robbers taped on video surveillance systems (De Angelis, Cattaneo, & Grandi 2007; De Angelis et al. 2009), and establishing whether presumed victims of pedopornography are or are not under age (Cattaneo 2007; Cummaudo et al. 2014).1

Returning to the Italian scenario, one notes a frequent problem: cases involving human remains are dealt with by forensic pathologists, who have no training in forensic anthropology. However, regardless of who should apply forensic anthropology, the main issue lies in the fact that the discipline be taught, either to pathologists or anthropologists, so that human remains can be examined in the best possible manner. At the moment, in Italy a pathologist has better chances than an anthropologist of working as a forensic anthropologist—because, by tradition, magistrates give cases to pathologists who subsequently choose and create a team of experts (which may include geneticists, toxicologists, entomologists, ballistic experts, and so on). Frequently the pathologist feels suitably qualified to do the forensic anthropology. However, properly trained anthropologists may one day be attributed expert witness status.

If training and lack of expert pathologists and anthropologists are still issues, research in forensic anthropology in Italy is present even though sporadic. If we look at the literature regarding this discipline on a national basis, we see only three textbooks on forensic anthropology: Lo Studio dei Resti Umani: Testo Atlante di Antropologia ed Odontologia Forense (Cattaneo & Grandi 2004), Elementi di Antropologia Forense: Dalle Indagini di Sopralluogo agli Accertamenti di Laboratorio (Marella 2003), Principi di Patologia e Antropologia Forensi (Arcudi & Marella 2006), and a small booklet on forensic odontology, Identificazione in Odontologia Forense (Cameriere 2003). In the last 10 years, Italian articles dealing with forensic anthropology have been published in international journals; a search on PubMed with “Italy” in association with “forensic anthropology” in every field revealed approximately 100 articles, 93% of which were published in the last 10 years. Such figures register the increasing interest of Italian forensic experts toward the discipline. The content of the articles included both biological profile and trauma: 13% dealt with assessment of lesions, 19% with generic identification, and 8% with personal identification and estimation of postmortem interval. In addition, the number of articles concerning the living is increasing, with 15% concerning age estimation and 7% regarding facial identification. Forensic archaeology, however, is less popular among scholars, which leads to a limited involvement of archaeologists in both operative forensic scenarios and related academic activities.

Although the discipline of anthropology in Italy may appear still to be merely in a phase of development, some elements of interest on behalf of the public can be noted, as shown by the creation of a reference collection of skeletal remains. Thanks to collaboration with the municipality of Milan, the largest known skeletal collection in Italy has been assembled counting some 1,600 skeletons of known individuals who died between the 1990s and 2010.

As far as scientific groups and associations are concerned, Italy has only one group dedicated to forensic anthropology—the Gruppo Italiano di Antropologia ed Odontologia Forense (GIAOF). Established in 1996, unfortunately this group has over the years become mainly interested in aspects regarding the medicolegal malpractice of forensic odontology, subsequently drifting away from forensic anthropology. The Gruppo Italiano di Patologi Forensi (GIPF) sometimes organises events related to forensic anthropology but consists mainly of pathologists, whereas
the Associazione Antropologi Italiani (AAI) is striving to create a forensic anthropology section but lacks ties to the forensic environment. Therefore, at present, the Forensic Anthropology Society of Europe (FASE) is the only organisation that includes Italian forensic anthropologists and forensic pathologists with an interest in forensic anthropology. In 2014 FASE started its certification campaign.

**Forensic Archaeology in Italy**

Although a lot less practised and still in its early infancy with respect to forensic anthropology, one of the disciplines that is becoming more visible in the Italian scenario is forensic archaeology. Only in recent years has the importance of an archaeological approach to forensic cases been considered by pathologists and magistrates alike. In the case of the search and recovery of buried human remains, currently initial activities are typically organised by unskilled personnel with no experience of excavation or the necessary knowledge of subterranean environments and interactions that can take place within a grave. Rough attempts at recovering remains without specific tools or know-how, causing consequential damage to bones and the loss of information—regarding not only human remains but also the grave as a wider context—are common. Also, whereas a trained forensic archaeologist will understand the implications of almost intangible traces recorded within a grave and can recognise the necessity to integrate other specific forensic specialists into a recovery operation, unskilled police officers armed with picks and shovels along with the abuse of excavating machinery can be devastating to a crime scene or even an entire investigation. Thanks to a few high-profile cases, search, excavation, and the recovery of human remains in a forensic context have gained growing attention and have begun to be requested by investigating authorities.

In a similar way public interest in archaeology and archaeological research in the forensic field has also increased. This interest resulted in one of the largest Natural Parks in Italy (Parco del Ticino) allowing scholars and Universities in Northern Italy to use a portion of its territory for experiments regarding victim decomposition and various techniques implemented in the search for clandestine burials, all of which involved the implementation of pig carcasses that had deceased through causes unrelated to any of the experimental projects. In recent years collaboration with the national park has allowed many researchers to test various search and excavation methods (geophysics, in particular ground penetrating radar and electric resistivity), victim recovery techniques, and cadaver dog training. Additional activities include forensic botany, forensic soil science, and forensic entomology (Figure 3.1).

**Forensic Anthropology and Archaeology in Practice**

In looking at the international scenario, one notes that in Italy there is an urgent need for the practice of forensic anthropology. It is impossible to have a clear picture of the activity in all Italian medicolegal institutes; for example, the number of requests made to the University of Milano on an annual basis should be considered to be representative of the size of the problem.

Milano is a city with a population of around 1.5 million. The medicolegal institute performs around 800 autopsies every year, and there are, on average, 50 cadavers requiring personal identification and, in general, anthropological attention. Approximately 10 cases require the construction of a biological profile through sexing, ageing, stature, ancestry estimations, and sometimes facial reconstruction. In all the cases mentioned here forensic anthropology is crucial, if not the only discipline that could have been sensibly implemented. The other cases involving remains
that are skeletonised, burnt, or in an advanced state of decomposition arrive with a suspected identity. Identity is typically confirmed, in approximately one-third of the cases, through DNA analysis, whereas the other two-thirds are achieved through anthropological and odontological investigation (Cattaneo & Grandi 2005).

In many of these cases, where soft tissue is scarce forensic anthropology is also fundamental in the verification of the presence of traumatic lesions to bone. In addition, every year there are on average two to three requests involving crime scene activities that require forensic anthropology and archaeology expertise in the operational search and recovery of human remains. Increasingly, anthropological expertise is also requested for identifying the living captured in images taken from video surveillance systems; on average, there are about eight cases every year. Although forensic anthropology is not implemented on a daily basis in the typical Italian medicolegal scenario, it is quite frequently requested.

Thus forensic anthropology in Italy still needs to be developed both professionally and academically. However, the situation is slowly changing as illustrated by the four operative case reports that follow. These cases highlight the essential role that forensic anthropology and archaeology play in investigative contexts and the extent to which it is beginning to be recognised by magistrates, investigating authorities, and pathologists.

**Emblematic Cases: Forensic Anthropology**

**Case 1**

In the summer of 2001 human remains were found in the cellar of an abandoned building in a town near the outskirts of Milan. The body was completely skeletonised, still dressed, and surrounded by rubbish, with its feet bound in chains attached to a wall. Crime scene investigators collected most of the bones, along with many animal bones, initially considered to be human; the relevant finds then underwent full anthropological, odontological, and genetic investigation. First a biological profile of the deceased was established according to standard sexing and ageing methods; estimation of ancestry, height, and dental status were also undertaken (Ubelaker 1999). The biological profile subsequently led to a possible identity. Antemortem data relating to a young North-African male who had gone missing and postmortem data belonging to the skeleton were compared, with particular attention to the victim’s dental status. Finally, craniofacial superimposition and genetic analysis were carried out (Yoshino et al. 2001). Trauma analysis was also undertaken in order to establish postmortem, perimortem, and antemortem trauma. This
was done by macroscopic and stereomicroscopic observation of the bone lesions and radiological analysis. Age assessment of antemortem trauma was also attempted.

Results showed that the skeleton belonged to a 35- to 44-year old male of Caucasian (Mediterranean) origin approximately 1.69 m tall whose two central superior incisors had been lost long before the time of death. Craniofacial superimposition, along with consistent antemortem and postmortem data concerning the missing incisors (the man had a removable prosthetic appliance that corresponded to the two upper incisors) indicated a high probability of identification (Figure 3.2). The identification of the individual was later confirmed by genetic analysis. However, as is often the case with illegal immigrants, genetic antemortem or parental material was not available.

This case highlights the importance of anthropological and odontological methods for the purpose of identification, particularly in those cases in which DNA analysis is not practicable.

Trauma analysis (see Cunha & Pinheiro, Chapter 23 this volume; Loe, Chapter 24; and Nawrocki, Chapter 25) showed signs of sharp force perimortem trauma to the blade of the left scapula along with antemortem trauma probably resulting from blunt-force injury to the left scapula and the right fibula. The radiographic and macroscopic study of the initial osseous remodelling of the antemortem trauma, still at the stage of “periostitis” (Figure 3.3), indicated that these lesions had probably been produced from 15 to 30 days before death. The highly qualified forensic pathologist who had previously studied the skeleton had not noticed the periosteal reaction, a detail that if missed would have led to a loss of important information. Hence, the intervention of a forensic anthropologist in the case resulted in conclusive findings that may otherwise have been ignored. The indications described confirmed a witness’s report, which stated that the victim had initially been hit with a blunt object and then chained to the wall. Anthropological evidence further showed that the victim survived these blows but after a period roughly between 15 and 30 days was stabbed and died shortly after. The case report demonstrated to both magistrates and investigators the importance of an anthropological approach to forensic investigation, not only regarding the subject of victim identification but also in the matter of bone-trauma interpretation.

Figure 3.2 Craniofacial superimposition

Figure 3.3 Detail of the right scapula, supraspinal portion, showing a recent fracture with initial healing and woven bone
Case 2

In October 2013 in woodlands in the province of Sondrio, in Northern Italy, a charred body was found in a car that had been severely damaged by fire. The recovery was carried out in accordance with anthropological protocols by dividing the vehicle into sectors and sieving each one in the search for minute human remains (Porta et al. 2013) (Figure 3.4).

The car was identified, which in turn led to the development of a hypothesis about the identification of the deceased. The vehicle was traced to a man who notoriously had suicidal tendencies and had previously been admitted to psychiatric institutions. The autopsy highlighted the lack of extremities of the upper and lower limbs and the advanced charring of the unidentifiable corpse.

The anthropological analysis of bones and bone fragments recovered during the crime scene investigation did not provide information suggesting a possible traumatic cause of death. Toxicological analyses on the residual soft tissues sampled during autopsy, indicated a 71% concentration of carboxyhemoglobin. The toxicological results, the anthropological analysis of bones, and the circumstantial data were concordant with the hypothesis of suicide through asphyxiation and poisoning from motor vehicle exhaust fumes. As a result of the suicide attempt the car caught fire, consequently charring the body.

The main issue in this case report concerns victim identification; the odontological analysis revealed a number of dental restorations that were considered to be useful for identity confirmation. The dentist of the deceased was located in order to obtain antemortem dental records for comparison with postmortem data. Unfortunately, the dental practitioner admitted to not having preserved any clinical records, a common problem in reference to identification in many jurisdictions (for example, Blau et al. 2006). Genetic identification could not be performed owing to the absence of close relatives able to provide reference DNA material for profile comparison (Figure 3.5).

All the available clinical information was then recovered in order to find elements that may have helped in providing either positive or negative confirmation of identity; a clinical record reported that 23 years before his death, the subject had been the victim of a car accident and was affected by a fracture of the distal part of the left femur with detachment of multiple fragments and fracture of the right wrist. He also underwent a surgical operation of osteosynthesis—that is, for several months he had a metallic device applied to the left femur. In 2005 the individual had a radiological examination that verified signs of arthrosis on both the hip joints and deformation of the femoral heads.
Only the pathological alteration of the femoral heads was of use in ascertaining the identity of the body, since bones from the right wrist had not been recovered. The distortion of the limbs due to the pugilistic position, typical in burnt remains, prevented the possibility of performing a conventional X-ray examination for comparison. Therefore, both femora were removed from the body, completely skeletonised, and cleaned from residual soft tissue; the two bone specimens then underwent a 3D acquisition (Vivid 910, Konica Minolta, Osaka, Japan), acquiring a software generated 3D model of the bones to superimpose on the original antemortem X-ray images. The superimposition highlighted a perfect concordance between the general morphology of the recovered femora and the antemortem radiological documentation (Figure 3.6). A more precise comparison was performed with the aim of recording all the points of congruence from both an anatomical and pathological point of view, between the post and antemortem X-rays; the full correspondence between the two profiles allowed forensic operators to confirm the identity of the charred body (Figure 3.7).

This case is a perfect example of the potential of forensic osteology to identify unknown decedents when other information such as odontological or genetic data is not available. In
addition it demonstrates the importance of advanced technologies in improving procedures of comparison when conventional methods are not applicable.

**Emblematic Cases: Forensic Archaeology**

**Case 1**

In 1998 a mafia affiliate confessed to a magistrate that 10 years earlier a man had been murdered and buried in the woods on the outskirts of Milan. The magistrate proceeded in the recovery of the remains that were buried at a depth of approximately 1 m, employing non-expert personnel armed with picks and shovels. The end result was that the skeleton was severely damaged and was identified with great difficulty. This activity also complicated the distinction between peri- and postmortem lesions to the skeleton (Figure 3.8).

In Italy it used to be quite rare that archaeological methods were used in the recovery of skeletal remains or that the anthropological analyses of a skeleton was requested in order to create a biological profile that could be conveyed to the media (newspapers and television) for possible recognition of a victim’s identification by readers or viewers. Following the experience of the mafia case mentioned here, magistrates began to acknowledge the value of expert forensic archaeological recovery and anthropological analysis. This acknowledgement was exemplified in a case that occurred in 2001.

On October 5, in a woodland area on the outskirts of a small town near Milan, a group of children playing in the vicinity of a primary school noticed a single boot emerging from the ground and, in kicking it, exposed a partly buried tibia and fibula. Investigating authorities immediately isolated the area and called the Institute of Legal Medicine in Milan. A team of forensic pathologists, anthropologists, archaeologists, and botanists arrived immediately at the

![Figure 3.8](image-url) Damage, including fractures and commingling of the single skeletal elements, caused by a gross excavation methodology. The lack of a controlled recovery led to loss of information on identity, position of burial, postmortem interval, and trauma.
Cristina Cattaneo, Daniele Gibelli, and Dominic Salsarola

burial site, and the forensic archaeological recovery was performed. Over the late afternoon and night the skeletal remains were uncovered through stratigraphical excavation. The excavation was geared to precisely separating the edges, sides, and bottom of the burial from the backfill, in such a way as to respect the integrity of the burial while at the same time being certain of not adding post-mortem lesions or modifying already existing lesions to the skeleton. The respect of the integrity of grave and victim applied to both biological and cultural elements that could have been internal to the burial. A stratigraphic approach to the recovery also assured the separation of elements preserved within the clandestine burial considered to be pertinent to the crime scene from unrelated elements in the surrounding soil (Figure 3.9). The rigorous archaeological excavation allowed for the nondestructive recovery and the correct topographic recording of both skeletal and cultural elements (synthetic clothes, earrings, accessories, and so on) while a strict botanic sampling strategy, in particular the recording and recovery of roots crossing the femur and the auditory meatus of the cranium, proved to be essential to the determination of the post-mortem interval.

After recovery the skeleton was cleaned and reassembled in the laboratory, where classical anthropological studies were performed (Ubelaker 1999): estimation of ancestry (see Sauer, Wankmiller, & Hefner, Chapter 18 this volume); sexing (Rowbotham, Chapter 19); ageing (Rogers, Chapter 20, and Crowder, Heinrich, & Dominguez, Chapter 21), height (Willey, Chapter 22), assessment of pathologies (Cunha & Pinheiro, Chapter 23); and dental status (Clement, Chapter 29). The anthropological analysis led to the construction of a biological profile consistent with a young (20–25-year-old) white female, approximately 1.60 m in height and possibly of Balkan origin. Finally a plaster model was cast from the recovered cranium, on which facial reconstruction was performed. Given the peculiar dentition (a large diastema between the two central upper incisors

Figure 3.9 The skeleton was recovered using archaeological methods. One can see the difference between the case in Figure 3.1 and this case. It was possible to recover every bone and personal effect, determine postmortem interval (PMI), and interpret skeletal lesions as perimortem trauma.
and the absence of the lateral upper incisors), laboratory personnel decided to reconstruct the face in a “smiling” pose to highlight the almost singular dental conformation.

A replica of the dentition was made in white resin for the teeth and pink plasticine for the gums. Since tufts of hair of a brownish colour and of medium length were found near the cranial vault during excavation, several possible hairstyles were also prepared for the final reconstruction. The facial reconstruction also took into consideration three earrings that were recorded in their original position during excavation. Thanks to the precise topographical recording of these accessories it appeared evident that the jewellery was not applied in a traditional manner, but all three objects were worn in the right ear at the same time, in particular two small yellow metal flowers in the right helix and one white metal ring in the right lobe. This detail, in association with forensic-anthropological and forensic-odontological data proved to be of the utmost importance in the identification of the victim. Furthermore, analyses of tree roots and clothing placed the time of death between 1995 and 1998; macroscopic and microscopic analysis of the costal margins revealed a cut mark with “green fracture” characteristics on the lower margin of the tenth left rib. Thus, at this stage, biological profile, time of death, and probable cause of death had been revealed. The final image of the victim’s face was then passed on to national newspapers and to Italian state television (RAI) (Figure 3.10).

The images of the facial reconstruction of the victim were transmitted on a popular television program that concerns cases involving missing persons. During and following the program several calls were made to the producers of which one in particular caught the interest of the investigating authorities. Information from the call led to the victim being positively identified and the subsequent prosecution of members of a prostitution ring who were accused of her murder. Specifically the caller recognised the victim because of her peculiar dental conformation. This identification was heavily reinforced, if not confirmed, by the caller owing to the particular arrangement in which the earrings were worn. Thanks to archaeological recovery and recording, forensic anthropologists were able to apply the earrings correctly to the reconstruction. It was later discovered that the jewellery was not worn in this particular manner by chance, but the specific conformation functioned as a “mark of property” of women involved with the prostitution ring.

This case, to our knowledge, is the first in Italy in which investigating authorities requested and allowed forensic pathologists, anthropologists, archaeologists, and botanists to deal with buried skeletal remains from the moment of their discovery. This manner of forensic investigation led to the

![Figure 3.10 Various phases of facial reconstruction that followed the anthropological analysis of the skeleton](image-url)
determination of postmortem interval, the construction of an accurate biological profile, identification of the victim, and diagnosis of the possible cause and manner of death. This process stresses how important it is for skeletal remains to be recovered by specialists in order to preserve the integrity of a clandestine burial through the use of stratigraphic excavation and botanical sampling strategies. In conclusion, this case proved to magistrates and investigating bodies the important advantages that forensic anthropologists and archaeologists can bring to a crime scene. With organised and respectful collaboration between specialists, investigating authorities, and the media, it is possible to deal accurately and in the proper manner with the retrieval of human remains, perhaps solving or contributing to the resolution of what may have initially appeared to be a hopeless case.

Case 2

In January 1998 two adolescents, a male and a female, disappeared. After the confession of one of their suspected murderers, their skeletonised corpses were found in May of 2004 in woodlands near the town of Varese in Northern Italy. The perpetrator belonged to a group that was later baptised by the media Le Bestie di Satana (“Satán’s Beasts”) because of their involvement in Satanism and the use of heavy narcotics. The witness indicated a deposition site, stating that he and another member of the group were responsible for the excavation of the clandestine grave but that he, at least, was not present during the murder, which took place directly at the burial site during the function of a satanic ritual. Both victims were reported to have sustained various sharp force lesions with two different knives; the male victim was also allegedly hit in the face with a mallet and sustained a sharp force lesion to the neck.

The indications of the witness led to an area of approximately 53 m² of woodland in a national park (Parco del Ticino). In the initial phase of the search for the exact location of the grave, five cadaver dogs investigated the area one by one. The dogs demonstrated interest in certain portions without, however, actually indicating a precise location. The second phase of the search strategy took into account the absolute necessity of either confirming the search area as being that of the burial site or its definite elimination from the search. The area was therefore investigated directly by means of the mechanical removal of topsoil to a depth of approximately 20 cm, with the subsequent investigation of the underlying substrata. This operation revealed homogeneous, natural deposits that bore no signs of disturbance. The area was consequently eliminated beyond doubt from the search, and the inspection was interrupted. After approximately one week the witness suggested that he may have been confused during his first visit to the area and led the search operators to a different, nearby portion of the woods. In this case the strategy involved an initial cadaver dog campaign followed by a surface survey and finally the removal of topsoil with the objective of investigating the area’s substrata. Following the negative cadaver dog search of the new area and during the field survey, the head of a pick axe and a knife sheath were located in heavy undergrowth. These objects were considered to be important indicators of the possible vicinity of the clandestine burial. The topsoil of the surrounding area was removed with the help of a small mechanical excavator and, following archaeological cleaning of the immediate subsurface with trowels, a disturbance in the natural sedimentary deposits was recognised. Excavation of the grave lasted for the duration of a whole day and carried on into the night, when the two victims were finally recovered. The grave measured 1.90 m by 0.90 m, presenting a depth of 1.90 m. During the excavation various objects were found and recorded in their original positions; these included two pairs of latex medical gloves, document holders with personal effects still inside and legible, and, at approximately 60 cm depth, the blade of a shovel with part of a snapped wooden shaft still in place. The shovel handle undoubtedly snapped during what was probably the hurried backfill of the grave. At a depth of approximately 1.6 m from the surface two skeletonised corpses (male
and female) began to emerge (Figure 3.11). The first corpse (A) was positioned in the central portion of the pit, curled into an almost foetal position and lay transversally across the bottom of the grave. The cranium of corpse A was covered by the right arm of corpse B that lay below victim A and had been deposited along the bottom of the burial. The anthropological analysis confirmed the preliminary data gathered on site, identifying corpse A as being female and corpse B as being male. It was further established that corpse A was Caucasoid, aged between 17 and 22 years, 1.54–1.60 m tall, whereas B was Caucasoid, aged between 15 and 18 years, and 1.71–1.77 m tall.

In addition, the study of the female corpse (A) highlighted the presence of several bone calluses in the left humerus, left radius, left fibula, and a metallic nail in the left femur, compatible with lesions suffered intra vitam owing to a road accident. Analysis of the male corpse (B) showed several dental misalignments and incomplete eruption, congruent to the odontological profile of the missing male. Identification of the two adolescents was later confirmed through DNA analysis.

Corpse A showed several sharp force lesions on the spinous process of the 8th and 9th thoracic vertebra, the body of the 2nd and 3rd thoracic vertebra, on the 3rd and 8th right rib, on the distal extremity of the right clavicle, in the subspinous region of the right scapula, and on the distal extremity of the left ulna. The analysis also showed the amputation of the proximal extremity of the 5th right metacarpal bone, suggesting defence lesions. The minimum number of injuries sustained by victim A amounted to 11 (Figure 3.12).

Corpse B presented a fracture of the superior dental arch, of the right mandibular branch, and a linear notch in the bone surface with smooth edges on the right mandibular condyle; several sharp
force lesions to the left humerus, to the left 4th, 5th, 6th, 7th, and 11th ribs, to the right 11th and 12th rib, and to the 2nd and 3rd lumbar vertebrae; and the amputation of the 5th right metacarpal bone was noted and interpreted as a defence lesion. In total the number of sharp force blows sustained was at least 12 plus the observation of one blunt-force trauma to the jaw (Figure 3.13).

The anthropological and archaeological data were consistent with the details contained in confessions released by the witness. However, during the investigative phases that followed the recovery and the arrest of all the participants in the homicide, the archaeological data regarding details of the chain of the events were confronted with the different versions produced by the accused. As often happens in cases in which there are more than one perpetrator, different levels of responsibility regarding the crime emerged with one participant accusing others of being the material perpetrators and perhaps diminishing his or her role in the event. As a result of the comparison between the data gathered and the declarations made, the witness was finally convicted, along with eight other members of the group, not only of the occultation of the bodies but also of their murder. This case shows how different professional figures can cooperate to improve the quality and quantity of data that can be obtained from skeletonised bodies and the context in which they have been preserved; in detail, an accurate and precise recovery of the two bodies, based on an archaeological approach, enabled anthropologists to perform a complete analysis of the remains with successful identification and assessment of bone lesion. This approach also aided investigators in the reconstruction of the chain of events regarding both the homicide and the burial of the victims.

Conclusion

Owing to the assistance that anthropology and archaeology have been able to provide in the resolution of the cases discussed here and others, in Italy these disciplines are slowly developing both academically and practically. In Milan, where their value has been strongly demonstrated in the courts and by the media, judges and magistrates are slowly coming to realise the importance of their application, both on the crime scene and in the laboratory. This activity has also had reverberations in other parts of Italy, and skeletal cases are slowly receiving proper attention and treatment. However, much work still needs to be done.

In fact, it is not only magistrates, judges, and investigating authorities that need to be “enlightened” but also, if not especially, forensic pathologists. They are the main players in the investigation of human remains, and when human remains are found, a pathologist is almost certainly called in and it is he/she who advises the magistrate on what should be done and which experts to involve. As stated, the pathologist is and should necessarily be called in where human remains are involved. In fact, according to Italian law the pathologist is the only specialist who can certify both death and the
cause of death. However, they are rarely competent in anthropology or archaeology. The reason for this lack resides in the fact that pathologists are not necessarily trained in osteology, and it is therefore of fundamental importance that a forensic anthropologist be consulted in cases involving skeletonised or partly skeletonised remains—which inevitably leads us to the delicate question of the lack of trained personnel (owing to the lack of structured training courses, a problem that is slowly reaching a solution) and the unavoidable appearance of “self-made” anthropologists on the forensic scene. The situation of unqualified personnel trying to make their way in this new discipline is a well-known problem. It is for this reason that teaching and certification are the next important goals of achievement in the sector. This need applies not only to Italian forensic anthropology and archaeology but also to both subjects on a European scale.

**Note**

1 The need for a European association that addresses these types of questions resulted in the establishment of the Forensic Anthropology Society of Europe (FASE). The main goals of FASE, a subsection of IALM, are education, harmonisation, and certification, along with the promotion of research (see Delabarbe & Baccino, Chapter 4 this volume; Cattaneo & Baccino 2002; Baccino 2005).

**References**


Daubert v. Merrell Dow Pharmaceuticals, Supreme Court of the United States. 1993. 113 S.Ct. 2786.


