

Tierra del Fuego, its ancient inhabitants, and the collections of skeletal remains in the Museums of Anthropology of Florence and Rome

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ABSTRACT

Tierra del Fuego is the archipelago at the southern tip of South America. When Europeans first reached this region in 1520, it was inhabited by three distinct ethnic groups of indigenous peoples (Selk'nàm, Alakaluf and Yamana), together referred to as Fuegians, now completely extinct. The Italian collections of skeletal remains of these people arrived in Italy in 1883 and 1885 following two separate voyages to Tierra del Fuego led by Giacomo Bove. These two collections are in the anthropological museums of Florence (now Section of Anthropology and Ethnology of the Natural History Museum) and Rome (Museum of Anthropology G. Sergi of the Sapienza University) and have attracted the interest of anthropologists ever since they were acquired. Today, thanks to new technologies (geometric morphometry, genetic analysis using ancient DNA, etc.), the physical remains of these people can be studied in a new light.

Key words:

Tierra del Fuego, Fuegians, skeletal collections, section of Anthropology and Ethnology of the National Museum of Florence, Museum of Anthropology G. Sergi of Rome.

RIASSUNTO

La Terra del Fuoco, i suoi antichi abitanti e le collezioni scheletriche nei Musei di Antropologia di Firenze e Roma.

Viene chiamato Terra del Fuoco l'arcipelago situato all'estremità meridionale del Sud America. Quando gli europei la raggiunsero per la prima volta nel 1520, questa regione era abitata da tre distinti gruppi etnici di popolazioni indigene (Selk'nàm, Alakaluf e Yamana), nel loro complesso definite Fuegini, oggi completamente estinti. Le collezioni italiane di resti scheletrici di queste popolazioni arrivarono in Italia, rispettivamente nel 1883 e 1885, a seguito di due distinti viaggi nella Terra del Fuoco condotti da Giacomo Bove. Esse sono oggi conservate nei musei antropologici di Firenze (oggi Sezione di Antropologia ed Etnologia del Museo di Storia Naturale) e Roma (Museo di Antropologia G. Sergi della Sapienza) e hanno attirato l'interesse degli antropologi fin dalla loro prima acquisizione museale. Oggi, grazie a nuove metodologie di ricerca (morfometria geometrica, analisi genetica impiegando DNA antico, ecc.), esiste la possibilità di studiare sotto nuove prospettive ciò che resta di queste popolazioni.

Parole chiave:

Tierra del Fuego, Fuegini, collezioni scheletriche, Sezione di Antropologia ed Etnologia del Museo di Storia Naturale di Firenze, Museo di Antropologia G. Sergi della Sapienza Università di Roma.

TIERRA DEL FUEGO

From a geographical point of view, the low latitude and its proximity to the Antarctic continent, dramatically influence the climate of the Tierra del Fuego, which is cold for most of the year and has summer temperatures that rarely exceed 20 °C. The low temperature is also caused by the influence of cold sea currents and strong, cold winds that originate in the Sub-polar regions. The survival of now extinct human populations in such a hostile environment was mainly due to the presence of large forests of three species of Antarctic beech (genus *Nothofagus*), which provided large amounts of firewood (Gusinde, 1967).

A brief history of the exploration trips

The current name of Tierra del Fuego (the Land of Fire) was attributed to this region by the Portuguese navigator Fernão de Magalhães (also known as Magellan), who became the first European to reach those lands in 1520. When he sailed through what is now called, in his honor, the Strait of Magellan, he saw the glow of many fires on the numerous islands that make up the archipelago. Unaware that these fires had been lit by the natives who inhabited those islands and whom he had not yet met, he named the region La Tierra de los Fuegos (Gusinde, 1967).

Few regions on earth can boast such a large number

of expeditions in their history as Tierra del Fuego. After the discovery of the New World by the Europeans, the richest European nations at the time (Spain, Portugal, England) wished to find a faster route to the southern regions of Asia (then called East Indies) so as to avoid the circumnavigation of Africa. The discovery in 1513 by Vasco Nuñez de Balboa of a new ocean (subsequently called the Pacific Ocean) led a number of navigators, including Magellan, to believe that the new way to the East Indies was to be found along the coasts of South America. After Carlos V, king of Spain, had given him men and ships, Magellan left from San Lucar on the 20th of September 1519. Sailing along the coast of South America on the 1st of November 1520 he discovered, at the southern edge of the American continent, a route that led him to the Pacific Ocean, which he called the Strait of All Saints and that posterity was to name after him (De Agostini, 1955). The second crossing of the Strait of Magellan was accomplished in 1577 by the English pirate Francis Drake, who took advantage of the discovery of this new route to reach the western shores of South America, i.e. those on the Pacific Ocean, and allowed him to plunder some of the richest colonies recently founded by the Spaniards, including Valparaiso and Lima. A few years later, in order to prevent further incursions by English pirates, the Spanish government commissioned Pietro Sarmiento de Gamboa to set up a number of colonies in Tierra del Fuego that were to serve as a starting point to fortify the coasts along the strait. Reaching the region in 1584, Pietro de Gamboa founded two colonies, which he called Name of Jesus and Of King Felipe II. However, upon returning to the colonies, four years later and after many vicissitudes, Gamboa found that all the settlers had perished of starvation (De Agostini, 1955).

Among the many expeditions organized by the European countries in the sixteenth and seventeenth centuries, particularly worthy of note was the Dutch expedition led by Willem Schouten and Jacob Le Maire in 1615, when an alternative route to the Strait of Magellan, running along the southern islands of the archipelago, was found. The southernmost island of the archipelago was called Cape Horn, in honor of the Dutch city in which the expedition had been organized (Hoorn) (De Agostini, 1955).

In the late eighteenth century, the reasons for ships sailing through these regions partially changed; indeed, while commercial interests continued to play an important role, geographical and scientific studies and observations became more and more frequent. Worthy of note are the explorations undertaken by some famous English navigators. James Cook made two voyages around the world (1768-1771 and 1772-1775). The explorations made



Fig. 1. The geographic distribution of the three groups of populations native to Tierra del Fuego (Gusinde, 1967).



Fig. 2. A group of Yàmana (De Agostini, 1955).

by the selected group of scientists on his ships upon reaching Tierra del Fuego made a major contribution to the geographical description of this region. The voyages made by Parker King (1826-1830) and Robert Fitzroy (1831-1836) were also very important. Charles Darwin, who took part in Fitzroy's voyage as a naturalist, left us an important description of this expedition in his book: *A naturalist's voyage round the world* (1839).

Until then, Tierra del Fuego had been reached by the navigators of many European countries (Spain, Portugal, England, Holland, France, Germany), though no nation had yet claimed its exclusive rights over the region. In 1833, the newly founded Chilean republic claimed the inclusion of Tierra del Fuego within its territory. The voyages of exploration undertaken by Chilean expeditions from 1843 gradually shed light on the contours of the intricate archipelago and completed the hydrographical surveys started mainly by English and Spanish expeditions.

In subsequent years, the Argentinean government also claimed sovereignty over part of those lands, which meant that a commission of experts had to be appointed to define the border between these two countries (De Agostini, 1955). Today, from a political point of view, almost all the islands in the Tierra del Fuego archipelago belong to Chile, with only the eastern part of the Isla Grande (the largest island) falling within Argentinean territory.

Ever since it had been discovered, the Strait of Magellan had represented a route of great importance to commercial vessels sailing between Europe and Asia. However, after 1920, following the opening of the Straits of Panama, the vast majority of commercial shipping started using this new canal, and the route via the southern tip of South America gradually lost importance.

The ancient inhabitants: the Fuegians

When Europeans first reached the islands in 1520, these territories were inhabited by three groups of indigenous people, that were generically defined

Fuegians and differed from both a linguistic and cultural point of view.

The reports of two priest-explorers were very important for understanding the culture of the natives of Tierra del Fuego. The Austrian Martin Gusinde, who lived in this region for a long time and collected a large amount of information in his important book: *Die Feuerland Indianer* (1939), and the Italian Alberto De Agostini, who also spent long periods among those populations and left many unique documents that shed light on the ethnography of these peoples.

The islands in the western part of the archipelago, from Stewart Island to western Patagonia, were populated by Alakalùfs (also known as Halakwulup), Isla Grande was populated by Selknàms (also known as Ona) and, lastly, the southern islands of Tierra del Fuego, between the Beagle Channel and the Hermite Islands group, were inhabited by Yàmana populations (also known as Yahgan or Jagan). The Alakalùfs and Yàmanas were also referred to collectively as Fuegians of the canoes (*Indios canoeros*) or Fuegians of the channels as they used to move between the various islands in canoes built out of large pieces of Berber bark (*Berberis ilicifolia*) held together by whale tendons. The Selknàms, who lived on the mainland, were instead described as walking Fuegians (Gusinde, 1967).

Although they were culturally distinct and usually did not come into contact with each other, these three population groups shared many features. From a morphological point of view, while the average stature of the Selknàms was higher (up to 183 cm) than that of the Alakalùfs and Yàmanas (155-161 cm), all three groups had common physical traits such as brown hair and eyes, a brownish-yellow complexion, a large round face, high cheekbones and slit eyes, which pointed to a strong affinity between them. The lifestyle of the three groups also had many common traits; indeed, as the long and harsh winters prevented any agricultural practice, subsistence was based on a hunting and gathering economy (Gusinde, 1967).



Fig. 3. A group of Alakalùf (De Agostini, 1955).



Fig. 4. A group of natives of Tierra del Fuego staying in a Salesian mission at the beginning of the XX century (De Agostini, 1955).

The most important game for the Selk'nams was guanaco (*Lama guanicoe*), the most widespread South American camelid, whose meat was used for food, while the fur was used for clothing, and the tendons for sewing and the bows. In the northern part of Isla Grande, where the guanaco was rare, hunting of the Magellanic tuco-tuco (*Ctenomys magellanicus*), a large rodent from which meat and fur could be obtained, was very important. The seasonal hunting of ducks, bustards, cormorants, whose eggs were also looted, otters, seals and sea lions also played an important role (Gusinde, 1967).

The Alakalufs and the Yãmanas obtained the vast majority of their resources from the sea. A mussel (*Mytilus chilensis*), which is plentiful throughout most of the year, was very important to the economy of these people. Other resources were fish, shellfish, sea urchins, birds such as penguins, cormorants, great bustards and ducks, and marine mammals such as otters, seals and sea lions. Fuegians of the canoes could often exploit the resources provided by whales that ran aground on the coast (Gusinde, 1967).

The Fuegian vegetable diet was rather poor and consisted mainly of a few species of mushrooms and berries from the Berber bush. All the tools used by these populations, which were sometimes of considerable complexity, such as those used for hunting, were made of stone, wood, bones, shells, skin and tendons of animals. The most important tool used both for hunting and during the conflicts that sometimes erupted between neighbouring groups, was the bow. Given the need to follow the

seasonal movement of animals that could guarantee their livelihood, the residences of Fuegians could not be highly complex and consisted of huts made of poles placed in the ground to form a conical structure that was then covered with fur, leaving an opening for the smoke from the fire, which was always alight. Despite the harsh climate of their environment, Fuegians did not use any type of closed clothing, covering their bodies with a rectangular piece of fur that wrapped the entire body. This fur was either kept closed by means animal tendons or simple held with the left hand (Gusinde, 1967).

As frequently happens within hunter-gatherer peoples, the social structure was very simple and egalitarian, without a leader who represented the authority. The various groups were composed of nomadic families, which were founded on monogamous marriage and united by ties of kinship. The only figure with some authority was the shaman, who embodied the double figure of the healer and that of an intermediary between humans and otherworldly beings (De Agostini, 1955).

The disappearance of Fuegians

For the first 300 years following the discovery of Tierra del Fuego by the Europeans, the contacts between the newcomers and the natives were very sporadic. There are descriptions of the indigenous peoples of the region, though often imaginative and full of prejudices, by the first navigators who reached those lands, such as the one by Juan

Landrillero in 1558. The first descriptions of some reliability as regards the physical and cultural characteristics of these people were those that came after the exploratory voyages of Fitzroy (1831-1836) (De Agostini, 1955).

It is estimated that before they came into contact with Europeans, the Fuegian populations were made up of more than 10,000 individuals, of which 5,000 were Alakalúfs, 3,000 Sèlknams and 2,500 Yámanas (as reviewed by Manzi, 1988). Since the Europeans were not initially interested in colonizing their land, the existence of these populations was not affected to any great extent at first. This situation, however, changed dramatically from about 1840, when Chile first, and then Argentina, formally took control of the islands of Tierra del Fuego. In 1843 the Chilean government sent an expedition whose aim was to establish a new city that would serve as a centre for the economic development of the region. The city (Punta Arenas) was founded on the eastern coast of Brunswick Island, not far from where Pietro Samiento de Gamboa in 1584 had founded the colony Of King Felipe II, and at first served mainly as a penal colony, given that the trade in seal and otter skins, the main activities carried out in the region when the region was first colonized, was not particularly profitable (De Agostini, 1955).

Following the discovery of gold deposits of some importance in the years 1885-1890, many settlers from Chile, as well as others from Europe, reached this region in search of fortune. However, even the quest for gold was a short-lived asset owing to its lack of profitability. As pasture activities proved to be much more profitable in these regions, many settlers increasingly devoted themselves to this practice, which was further boosted by the cattle imported from Europe. This activity, however, seriously hampered the nomadic lifestyle of the Fuegian people, who needed large areas within which they could move freely in order to sustain themselves. Seeing their land and the number of prey available to them decline dramatically, Fuegians were often forced to kill the sheep of the settlers (which they called white guanaco), thereby causing resentment among the European colonialists, who would in turn organize hunting parties of the indigenous people, during which dozens of the latter were killed ruthlessly (De Agostini, 1955).

Owing to the difficult coexistence with European settlers, some Fuegian groups were forced to take refuge in the more mountainous and inhospitable areas, where the chances of survival, given the scarcity of resources, were low. In an attempt to protect the survivors from being persecuted and to convert them to Christianity and a European lifestyle, Salesian missionaries, mainly thanks to the work of Giuseppe Fagnano, set up two missions in Tierra del Fuego, the Mission of San Rafael on

Dawson Island in 1889 and the Mission de la Candelaria in the Rio Grande region in 1893. In these missions, Fuegians could escape the massacres of the settlers, find shelter and food and were taught work activities such as grazing and production of wool fabrics (De Agostini, 1955).

Even so, the demographic decline of the Fuegian populations was so rapid and relentless that in less than two decades after the founding of the missions, Fuegians had almost completely disappeared. The main cause of their disappearance were diseases such as smallpox, tuberculosis, measles, rubella and syphilis, which had all been introduced by Europeans and against which these people had not been able to develop any immunity (Gusinde, 1967). What is left today of these people, adapted to live in extreme environmental conditions, is nothing but a few reports of navigators, naturalists and ethnologists, as well as some ethnographic and skeletal collections kept in a small number of few museums: Punta Arenas, New York, Edinburgh, Paris, Vienna, Florence, and Rome.

THE COLLECTIONS OF FUEGIAN SKELETONS OF FLORENCE AND ROME

Once it became united in 1861, Italy tried to follow the tradition of other European countries by promoting voyages and expeditions in distant and unknown lands. One of these early voyages, whose command was assigned to the Captain of the Italian Royal Navy Giacomo Bove, was organized in 1881 and financially supported by the Argentinean government. The expedition, whose aim was to explore southern Patagonia, Tierra del Fuego and the States Island, set sail on the 3rd of September 1881 from Genoa. After the coast of Argentina and of the islands located in the Strait of Magellan had been explored and important studies concerning the Fuegian populations, the flora, the fauna and the fossils of these regions had been conducted, the voyage ended suddenly when one of the ships sank in the middle of the Beagle Channel. The entire crew was forced to return to Buenos Aires first, where Giacomo Bove received, for his merits as an explorer, a gold medal from the president of the Argentinean republic, then back to Italy. A scientific committee composed of scholars, such as Decio Vinciguerra (zoologist), Carlo Luigi Spegazzini (botanist), Domenico Lovisato (geologist), who had taken part in the expedition, published important reports on fauna, flora, geology, hydrography and meteorology of Patagonia and Tierra del Fuego upon returning to Italy (Bove, 1883).

This first voyage collected a large number of skeletal remains, belonging to 19 natives of the Yámanas group from Tierra del Fuego, to take back to Italy to

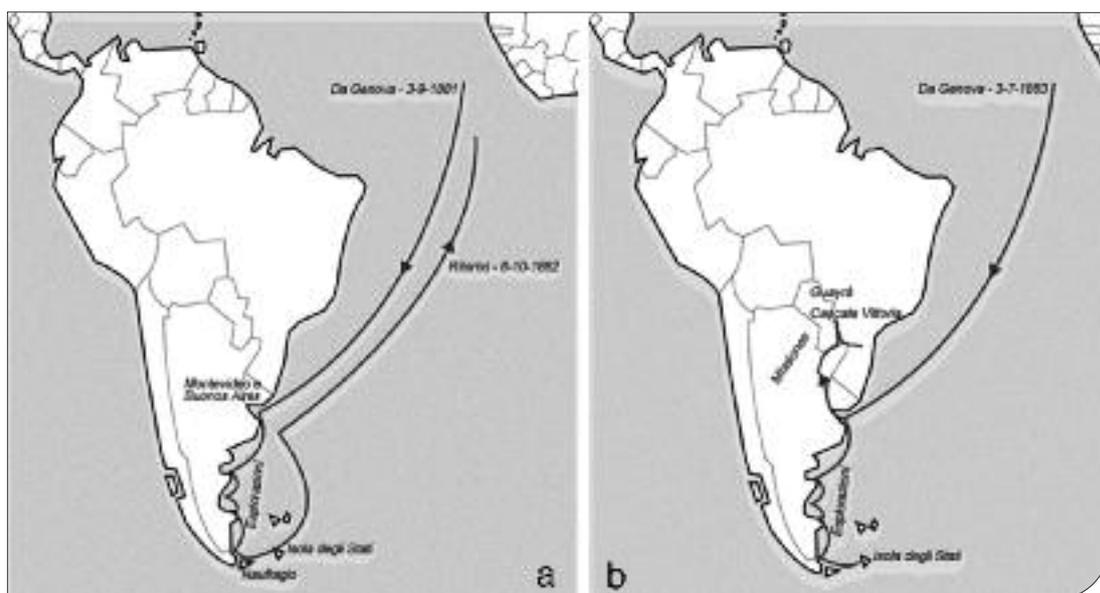


Fig. 5. The routes followed by Giacomo Bove during his first (a) and second (b) exploration trips to South America (from the Giacomo Bove Foundation website: <http://www.giacomobove.it/eng/index.shtml>).

enrich the collections of the National Museum of Anthropology and Ethnology of Florence, founded in 1869 by Paolo Mantegazza. Unfortunately, as this skeletal material did not reach in Italy clearly ordered, the crania, mandibles and other various bones could not be matched each other in order to assemble separate individual skeletons. Despite this limitation, the collection yielded a large amount of important information and is still of great scientific value. The skulls were studied for the first time by means of a craniometric analysis by Paolo Mantegazza and Ettore Regalia (1886). In the recent years, some studies have analysed the dentition (Pinto-Cisternas et al., 1986) and the postcranial remains (Stock, 2006) of this important collection of skeletons.

The aim of the second Italian expedition to South America, which was once again led by Giacomo Bove and left Genoa on the 3rd of July 1883, was to explore the "Misiones", a territory between the Iguazu River to the North, Parana river to the West, Paraguay river to the South and Pepiri-Guazù river to the East, and the southern tip of South America. After exploring the area of the "Misiones" and the Brazilian provinces of Mato Grosso and Guayrà, the crew reached Buenos Aires, from where it departed on the 29th of January 1884 for Tierra del Fuego. Giacomo Bove and his crew then explored the States Island, suggesting to the Argentinean government that a lifeboat station be established and a lighthouse erected there. They came into contact with a number of peoples of Patagonia, subsequently returning to Italy with "25 large boxes of anthropological, ethnographic, zoological and

botanical material" (Bove, 1885).

After this second voyage, 13 other complete skeletons of individuals belonging to Fuegian populations (2 Alakalüfs and 11 Yámanas) were also taken back to Italy. Unlike the Florence collection, this material arrived in Italy with the skulls and rest of the bones clearly ordered. This time, thanks to the intervention of the Italian Minister for Education, they were acquired by the Museum of Anthropology of Rome founded in 1884 by Giuseppe Sergi (Manzi, 1988). The Rome collection of Fuegian skeletons were later enlarged by a further two skeletons, also belonging to Yámana individuals, donated to the museum by Luigi Pigorini who had received them from Dr. Dall'Orto, who resided in Uruguay (Sergi G., 1887-88). The skeletons in the Rome collection were studied for the first time by Giuseppe Sergi (1886-87, 1887-88). When considering the early studies conducted on these skeletal samples, we cannot but notice how Giuseppe Sergi and Paolo Mantegazza, who definitely are esteemed for being the first scientists to introduce physical anthropology (as the Natural History of Man) in Italy, could not avoid being markedly influenced by the cultural atmosphere of that period. In the second half of the nineteenth century, it was widely accepted that humanity should be divided into several "races" (though their number varied from as few as 3 to as many as 200, depending on the scholars) and that they should be ordered according to a hierarchy in which the higher races were to be considered the western European populations and lower ones were to be found in continents far from Europe, with the last

rung of the hierarchy usually reserved for African blacks (Barbujani, 2006). Moreover, according to the prejudices of the time, the inferior races, as well as being characterized by lower intellectual ability, were also considered to be biologically more similar to apes or to the only extinct human species known at the time, the Neanderthals.

As an example of how this cultural climate influenced the anthropological research of the period, we wish to cite a passage from the article by Giuseppe Sergi, published following the study of the skeletons of the Fuegians in the Roman museum collection, entitled: *Antropologia fisica della Fuegia*:

“The race whose physical characteristics we have examined displays, as we have seen, many signs of inferiority, among which must be noted the poor cranial capacity. [...] It was likewise noted, as regards the development, that the difference between the skull of an individual of 16 to 17 years and that of an adult, or between a male and a female individual is very high. Such marked differences are normally found in large apes” (Sergi, 1886-87).

It is also noteworthy that the tendency to divide humanity into distinct races had again led, in the second half of the nineteenth century, to the need to define a very large number of morphological parameters, that could be measured, using appropriate instruments, in both live individuals and skeletal remains, which taken together could serve to classify the supposed human races.

One example of this plethora trend is the study by Paolo Mantegazza and Ettore Regalia on the skeletons of indigenous peoples from Tierra del Fuego in the Florentine museum's collection and described in the article entitled: *Studio sopra una serie di crani fuegini*:

“We may conclude that the skull of Yagan (Yamana) is mesocephalic, metriocephalous, megacephalous, leptorrhine, mesostaphyline, platopic, mesoprosopic and mesognathous” (Mantegazza & Regalia, 1886).

These early studies on the skeletal collections in Rome and Florence have been followed by at least 13 other scientific works in which the various skeletal districts were considered separately, which point to the continuing interest these collections have raised over time. It should be borne in mind that as the study of anthropological thought has developed, we have witnessed a progressive abandonment of the idea that human populations can be divided into races and, consequently, that some human races can be regarded as superior to others. More generally, we can argue that over time typological-based anthropology has been replaced

by a population-based anthropology, which is now considered to more reliably describe the biological characteristics of our species (e.g., Barbujani, 2006; Manzi, 2006; Manzi & Vienna, 2009).

The subsequent works on Fuegian skeletal collections benefited from this new approach. Particularly worthy of note are those on the skeleton of the lower limbs (Genna, 1928, 1930-32), the upper limbs (Jazzetta, 1928), the ribs (Pastore, 1933 and 1934), the astragalus (Sabatini, 1933-34), the sacrum (Della Seta, 1938), the scapula (Tofini, 1954), the vertebrae (Passarello, 1962; Sergi S., 1967), the clavicle (Vallois & De Felice, 1973), non-metric characteristics of the skull (De Stefano & Macchiarelli, 1980-81), the postcranial remains (Stock, 2006), etc.

RESEARCH PERSPECTIVES

The Italian collections of skeletons from Tierra del Fuego are not only of great historical value, but also of considerable anthropological importance. Indeed, unlike many other populations of hunter-gatherers with whom Europeans came into contact over time, Fuegians became extinct before they could be studied in depth. Consequently, many aspects of these populations, such as their possible origins and genealogical relationships with other Native American peoples, or the issues related to their remarkable adaptations against the harsh climate, are still largely unclear. Some of these issues will be investigated in the coming years as recent scientific developments now make it possible to employ new methods to draw a large amount of information from skeletal collections such as those preserved in Florence and Rome.

As we have seen, the first studies conducted on the skeletal collections from Tierra del Fuego were on morphology. Today we have the opportunity to refine considerably this type of approach using much more sophisticated and informative methods such as geometric morphometrics. This approach is based on the detection of coordinates of homologous points on the samples in two or three dimensions and represents a new and powerful tool for the analysis and interpretation of morphological variation of organisms. As with traditional morphometry, these changes are analyzed by multivariate statistical techniques, but with the added benefit of keeping the information on the geometric relationship between points, i.e. on the shape of the specimen studied. These geometric relationships can be viewed in multivariate space, thereby allowing an interpretation based not only on the degree of morphological similarity, but also of developmental and/or adaptive similarity (Bookstein, 1991).

Following the development in the field of molecular

anthropology of investigative methods that offer the possibility of obtaining analyzable DNA from organisms that lived hundreds of thousands of years ago (ancient DNA analysis), it is possible to characterize these populations from the genetic point of view even though they are now extinct. The techniques in this research area are rapidly evolving; indeed, genetic material can now be extracted, and then analyzed, from a wide range of biological remains of varying age and states of preservation, including bones and teeth, which is one of the reasons why these museum specimens have become particularly valuable (Francalacci et al., 2008). Recent methodological advances have been used to overcome most of the problems encountered in past years, such as the possible contamination with exogenous DNA, which is now corrected in sophisticated laboratories, or to problems related to the low number of DNA molecules available in ancient samples, which can be addressed following the invention of DNA Polymerase Chain Reaction (PCR) (Saiki et al., 1985), which can be used to obtain a high number of copies of a fragment of genetic material of interest (Caramelli & Lari, 2004). The results that may be obtained using these methods will not only shed light on the genetic relationship of the ancient peoples of Tierra del Fuego with other Native American populations, but will also help place them within the broader context of the early peopling of the Americas, whose dynamics are not yet fully understood.

Another very significant type of investigation that can be undertaken using skeletal samples is the analysis of the diet of a population. This can be understood by using skeletal remains to examine some chemical elements present in the organic component of hard tissues (collagen). What is used for the reconstruction of the so-called paleodiet is the analysis of the concentration of stable isotopes of specific elements that are ingested with food and contribute to the formation of body tissues. The chemical elements most widely used for this kind of investigation are carbon, by studying the relationship between its two stable isotopes C^{12}/C^{13} , and nitrogen, by studying the relationship between its stable isotopes N^{14}/N^{15} (Schoeninger & DeNiro, 1984). The isotopic ratios of carbon and nitrogen extracted from bone collagen can discriminate between a marine or terrestrial origin of the diet of a particular human group, and can shed light on the trophic level of specific consumers, an aspect that might be interesting as regards people who inhabited islands.

The application of geometric morphometrics, the analysis of ancient DNA and the study of the paleodiet, are but a few examples of the numerous approaches that can now be used to study ancient human populations and that will enable us to gain a



Fig. 6. Detail of the crania from the skeletal collection in the museum of Rome.

better understanding of the human groups of Tierra del Fuego.

As a matter of fact, a number of studies based on geometric morphometrics (González-José et al., 2008), genetic analysis through ancient DNA (Lalueza Fox et al., 1997 García-Bour et al., 2004) and stable isotope investigations (Yesner et al., 2003) have already been performed on Fuegian specimens. However, it should be borne in mind that these studies were based on samples from heterogeneous collections, and were often conducted using a single lab-based approach. By analyzing samples of the skeletal collections from the Rome and Florence collections, it would be possible to apply, for the first time, these three different methods to the same sample. This will provide a clearer framework on populations of extraordinary anthropological interest about whom relatively little is known owing to their untimely death. Although decades have elapsed since their first acquisition, the skeletal collections from Tierra del Fuego in the museums of Florence and Rome do not, by any means, appear to have exhausted their historical and scientific interest.

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