

# The Mummies in the Church of Santa Maria delle Grazie, Calascio: A New Site in the Inner Abruzzo Region, Central Italy

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## ABSTRACT

*The inner Abruzzo region, corresponding to the province of L'Aquila, is a land of mountains and highlands in central Italy. Its environmental conditions greatly foster spontaneous mummification, and the area is well known for the human mummies found in the last decades. We present a newly discovered collection of mummified remains in the village of Calascio, located 1,210 meters above the sea level, near Gran Sasso Mountain. Here, the Franciscan convent of Santa Maria delle Grazie was built in 1594. The preliminary survey of a crypt in the conventual church allowed us to observe wooden coffins with at least seven mummified bodies still in their clothes, and several bony remains. Most likely, the mummies date back to the second half of the 19th century, and belonged to laypersons. Preservation was certainly due to the cold dry environment of the crypt. The recovery of the entire series will take place through speleological techniques according to stratigraphic relationships, in order to trace a bioanthropological profile of this small community members.*

**Key words:** mummies, bioanthropology, paleopathology, Calascio, Abruzzo region, central Italy

## Introduction

The inner Abruzzo region, corresponding to the historical province of Aquila (today, L'Aquila), is a land of mountains and highlands with a cold, dry climate (Figure 1a–b). Its environmental conditions are extremely favorable for spontaneous mummification, and the area is well known for the human mummies found in the last decades<sup>1–2</sup>. Natural mummies dating back from 16<sup>th</sup> to 20<sup>th</sup> century were found in L'Aquila, Goriano Valli, Navelli, Popoli, and Casentino<sup>1–6</sup>. Unfortunately, these series were not always entirely recovered, and some examples are currently displayed out of context, very far from their original area. Here we present a newly discovered collection of mummies recently found in the inner Abruzzo region, namely in the village of Calascio (Figure 1c).

## The Mummies of Calascio

Calascio is a municipality and village beside the Gran Sasso Mountain (2,912 m above the sea level) in the province of L'Aquila<sup>7</sup>. Within its district is the castle of Rocca

Calascio, a well-known mountain top fortress located 1,460 meters above sea level and representing the highest fortress in the Apennine Mountains (Figure 2). In 1985, the film *Ladyhawke* was shot here. The village was listed as a possession of the Benedictine monks of San Vincenzo al Volturno Abbey in a document by the Frankish emperor Louis the Pious, dating back to 816. The fortress was built as a simple watchtower around the year 1000 and subsequently grew in importance and size, belonging to the Barony of Carapelle (14<sup>th</sup> century), to the Piccolomini (15<sup>th</sup> century), and the Medici families (16<sup>th</sup> century).

The whole area became under the control of the wealthy owners of the herding industry, involved in transhumance pastoralism, due to its strategic position on the route to the winter pastures of Apulia (southern Italy) and the summer ones at Campo Imperatore, the most extensive highland close to the Gran Sasso. The coexistence of the two villages (Calascio and Rocca Calascio) ended in 1703, when Rocca was heavily damaged by a major earthquake, and most of the population moved to the lower Calascio.

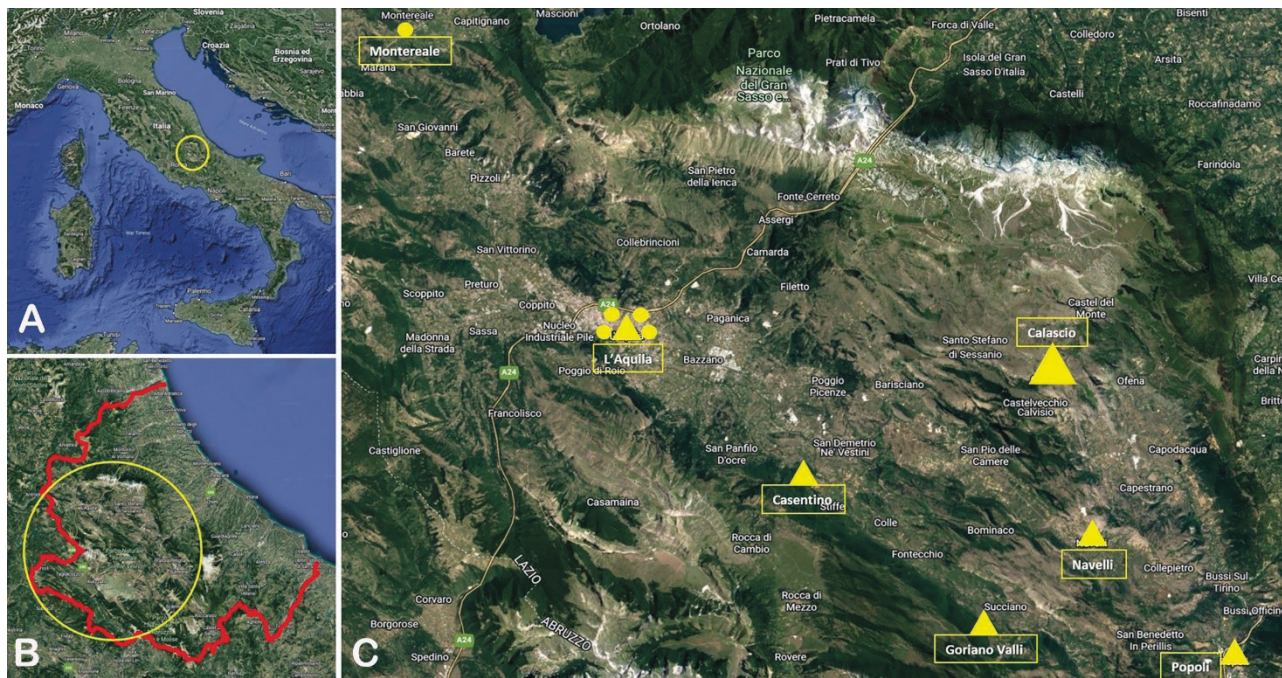


Fig. 1. a) Position of the inner Abruzzo region in the Italian peninsula. b) Inner Abruzzo region (yellow circle) and Abruzzo region (red line). c) Collection of mummies (triangles) and single mummified bodies (dots) in the inner Abruzzo region. Maps data: ©2022 Google, TerraMetrics.

The convent of Santa Maria delle Grazie (also known as San Francesco) was built in Calascio by the Franciscan friars in 1594 (Figure 2). The conventual church holds some exquisite Renaissance paintings, and its floor is strewn with ten manholes. After opening the first man-hole on the right side near the entrance, we found an access to a crypt. Visual investigation of the crypt allowed us to observe at least six wooden coffins lying on two different layers overlapped. Four of them had the lids removed, revealing well-preserved mummified bodies still in their clothes (Figure 3a). A seventh incomplete mum-

mified body was visible near the opening (Figure 3b), as well as several bony remains were scattered throughout the whole burial, in what appears to be an older stratigraphic unit (SU), witness of a previous phase of use.

Due to the low level of the ceiling vaults, the crypt was explored only on the surface, taking pictures by a photography technique commonly used in speleology. Reporting photographs were achieved by placing strategic lighting points (LED lights) that showed the mummified bodies' context and details. The positioning of the lights was carried out, taking care not to alter the environment, as it



Fig. 2. Calascio and its hamlet Rocca Calascio. Red arrow: the church of Santa Maria delle Grazie.



*Fig. 3.a) The crypt with wooden coffins arranged in two layers and (top right) sparse bony remains. b) The incomplete mummy near the opening (hypogeous photography by Luca Castellani).*

was found. In addition to the documentation, these images will permit the definition and design of the extraction activities of the mummies. After a detailed decision involving several experts from different sectors, the best extraction techniques will be defined. Overall, this subsequent activity will take place through speleological techniques, taking into account the stratigraphic relationships typical of archaeological science, to make the exhumation of the mummified bodies less invasive as possible.

The burial methods, the orographic and topographical aspect of the site, bring the site of Santa Maria delle Grazie closer to other Italian realities, where the entire population lived in past centuries was recovered. Possibly, the mummified bodies date back to the second half of the 19th century, and belonged to laypersons. Mummification was certainly due to the cold dry environment of the crypt.

The recovery of the entire series will take place in order to piece together the different features of life and death in this small community members. Complete investigations of bodies and clothes will follow, in order to trace a bioanthropological profile of the subjects, and to assess the daily life of these individuals. Anthropometric and paleopathological analyses will be performed by a conservative approach through visual inspection, computed tomography scanning, and videoendoscopy. When needed, a minimal sampling of body tissues will be performed to allow histopathology, paleonutritional, and ancient DNA analyses. Finally, a permanent exhibition of the mummies along with the scientific results obtained is planned on site in Calascio.

## The Mummies in the Inner Abruzzo Region

Since 1997, a systematic study of human mummified human remains was begun in the inner Abruzzo region, in order to create a map of the paleopathological material<sup>1</sup>. After 25 years, the list of mummified bodies found in this particular area can be updated (Table 1). Six main collections of natural mummies and five natural or artificially preserved bodies of Christian Saints and Blessed were itemized. Mummy series date back from 16<sup>th</sup> to 20<sup>th</sup> centuries, whereas individual bodies are from 15<sup>th</sup> to 16<sup>th</sup> centuries.

The natural mummies of the Castello Cinquecentesco in L'Aquila include four individuals (2 women, 2 sub-adults) dating back to 16<sup>th</sup>–17<sup>th</sup> centuries. They are a minimal portion of a larger collection (about one hundred bodies) found in 1902 in a chapel beneath the castle and later reburied in the cemetery by order of the Archbishop<sup>1,2</sup>. They were summarily studied and are currently displayed in the University Museum of Chieti, even though they are currently the legal property of the National Museum of Abruzzo (MUNDA) in L'Aquila.

In 1980, partially mummified and skeletonized human remains were accidentally discovered in the crypts beneath the church of San Sebastiano in Navelli. Due to the lack of funding and interest by the local organizations and authorities, the recovery was started only in 2001, yielding the remains of 206 individuals (minimal number) as well as mummified animals<sup>1–3</sup>. Unfortunately, the preliminary intervention had no follow-up, and we currently ignore the fate of the remains.

The natural mummies of five 19<sup>th</sup> century individuals were found in the friary of San Giorgio degli Osservanti (18<sup>th</sup> century) in the village of Goriano Valli (municipality of Tione degli Abruzzi). These extremely well-preserved natural mummies, were thoroughly investigated by computed tomography and autopsy approach, demonstrating several soft tissues diseases<sup>4</sup>.

The series from the church of the Santissima Trinità in Popoli (since 1927 included in Pescara province, but formerly belonged to Aquila) includes at least 8 mummified or skeletonized bodies dating back from 1734 to 1845, buried in a crypt<sup>5</sup>. A preliminary investigation of these mummies took place in 2001 and was documented by the National Geographic Society in their educational television program, "The Mummy Road Show". A thorough examination of one mummy was recently completed<sup>9,10</sup>. Unfortunately, the other bodies were left uninvestigated inside the crypt.

Forty mummified bodies (out of 104 total individuals) were discovered in Casentino (municipality of S. Eusanio Forconese, L'Aquila) in 2009. Bodies were noted after the partial collapse of the church floor due to the major earthquake that stroke the area on April 6<sup>th</sup>. At that time, local authorities had greater problems to face off, and the mummies were recovered and transported to Chieti, where four of them are currently displayed in the University Museum<sup>6</sup>. As in the already mentioned case

of the mummies from L'Aquila, Castello Cinquecentesco, the choice to exhibit the bodies in Chieti was “based on the consolidated experience of the local anthropology section, on the scientific and research relevance of the remains, and on the evaluation of their communicative value towards the public”<sup>6</sup>. Trying to overlook their self-attributed role as experts, the exhibition of these mummies very far from their original location and out of their original context represents an opinion that cannot be shared.

Along with these collections of individuals, the remains of some remarkable historical figures are also preserved in the province of L'Aquila. The body of San Bernardino da Siena, a leading figure of the Franciscan Observance reformation movement, is a fascinating example of an artificial mummy dating back to 1444<sup>11</sup>. To our knowledge, an “unofficial” inspection of Bernardino's mummy was performed in 2009, but the results are still unpublished. Also, the body of the Blessed Andrea da Montereale, on the north-western border of the region, was embalmed shortly after (1479)<sup>12</sup>. Spontaneous-enhanced mummification with lime was also established in the case of the Blessed Jean Bassand (1445)<sup>13,14</sup>. Finally, the natural mummies belonged to the Blessed Antonia da Firenze (dead 1472)<sup>11</sup> and the Blessed Vincenzo da Aquila (1430–1504)<sup>15</sup> are held in the city's outskirts.

## Conclusions

Due to the rich heritage of natural mummies, the inner Abruzzo region is considered an area of great bioanthro-

pological and paleopathological interest. Unfortunately, previously discovered mummified remains were not always thoroughly investigated, and the value of these cultural assets was not properly increased. The new mummy series in Calascio shows relevant analogies with similar series discovered in this area and those in the Apennine regions of Emilia-Romagna, Marche, Umbria, and Lazio<sup>16–17</sup>. The presence of at least seven mummified subjects and a potentially larger sample of bodies in the additional unopened manholes makes this setting extremely interesting.

It is well known that the living conditions of ordinary people in past centuries represent a rare opportunity to investigate. Usually, there is a relative abundance of socially selected burials, whereas a heterogeneous sample, certainly representative of a community and diachronically distributed, is hard to find. The spontaneous mummification of the individuals gives a further element of exceptionality and makes the site a peculiar example of a collective cemetery for an isolated community, which could open an extraordinary possibility of anthropological and biocultural knowledge<sup>18–20</sup>.

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## REFERENCES

1. VENTURA L, LEOCATA P, MANCINELLI D, MIRANDA G, VENTURA T, *Antropol Port*, 19 (2002) 145. doi: 10.14195/2182-7982\_19\_12. — 2. VENTURA L, MIRANDA G, MERCURIO C, CIOCCA F, FORNACIARI G, *Med Secoli*, 18 (2006) 875. — 3. VENTURA L, MIRANDA G, VENTURA T, FORNACIARI G, *J Biol Res*, 80 (2005) 357. — 4. VENTURA L, CIOCCA F, MIRANDA G, FORNACIARI G, *Le mummie naturali di Goriano Valli (L'Aquila)*. In: DI FABRIZIO A (Ed): *Mummie, un archivio biologico* (Fondazione Cassa di Risparmio, Chieti, 2006). — 5. VENTURA L, LEOCATA P, BECKETT R, CONLOGUE G, SINDICI G, CALABRESE A, DI GIANDOMENICO V, FORNACIARI G, *Antropol Port*, 19 (2002) 151. doi: 10.14195/2182-7982\_19\_13 — 6. D'ANASTASIO R, CILLI J, VICIANO J, TRAGNONE G, CAPASSO L, MONZA F, *Museologia Scientifica Memorie*, 21 (2020) 38. — 7. COMUNE DI CALASCIO. Provincia dell'Aquila. Storia del Comune, <http://www.comune.calascio.aq.it/>. — 8. WIKIPEDIA, Calascio. <https://en.wikipedia.org/wiki/Calascio>. — 9. VENTURA L, FORNACIARI G, CALABRESE A, ARRIZZA L, FORNACIARI A, *Med Histor*, 4 (2020) 29. — 10. VENTURA L, ARRIZZA L, QUARESIMA R, CAPULLI M, *Pathologica*, 114 (2022) 339. doi: 10.32074/1591-951X-260. — 11. VENTURA L, *Patho-*

12. VENTURA L, TRAVERSARI M, SABATININ, CILLI E, TELERA G, RIPANI M, *Med Histor*, 6 (2022) e2022016. — 13. VENTURA L, GAETA R, *Med Hypotheses*, 144 (2020) 110003. doi: 10.1016/j.mehy.2020.110003. — 14. VENTURA L, BRUNO F, BARILE A, MASCIOCCHI C, *Int J Osteoarchaeol*, 31 (2021) 1276. doi: 10.1002/OA.3019. — 15. VENTURA L, IOANNUCCI M, TUDICO G, RAFFAELE A, MASCIOCCHI C, *Virchows Arch*, 475 (2019) OFP-09-003. — 16. PETRELLA E, PICIUCCHI S, FELETTI F, BARONE D, PIRACCINI A, MINGHETTI C, GRUPPIONI G, POLETTI V, BERTOCCO M, TRAVERSARI M, *PLoS One*, 11 (2016) 1. doi: 10.1371/journal.pone.0154349. — 17. FIGUS C, TRAVERSARI M, SCALISE LM, OXILIA G, VAZZANA A, BUTI L, SORRENTINO R, GRUPPIONI G, BENAZZI S, *J Archaeol Sci, Reports* 14 (2017) 382. doi: 10.1016/j.jasrep.2017.06.023. — 18. TRAVERSARI M, FIGUS C, PETRELLA E, PICIUCCHI S, VAZZANA A, CILLI E, SARAGONI L, BENAZZI S, *Med Histor*, 3 (2019) 39. — 19. TRAVERSARI M, FELETTI F, VAZZANA A, GRUPPIONI G, FRELAT MA, *BMSAP*, 28 (2016) 202. doi: 10.1007/s13219-015-0140-7. — 20. TRAVERSARI M, DA VIA S, PETRELLA E, FEENEY RNM, BENAZZI S, *Int J Paleopathol*, 30 (2020) 110. doi: 10.1016/j.ijpp.2020.03.003.

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## **MUMIJE U CRKVI SANTA MARIA DELLE GRAZIE, CALASCIO: NOVO NALAZIŠTE U REGIJI ABRUZZO, SREDIŠNJA ITALIJA**

### **SAŽETAK**

Unutrašnjost regije Abruzzo, koja odgovara pokrajini L'Aquila, planinsko je područje u središnjoj Italiji. Njegovi ekološki uvjeti uvelike potiču spontanu mumifikaciju, a područje je dobro poznato po ljudskim mumijama pronađenim u posljednjim desetljećima. Predstavljamo novootkrivenu zbirku mumificiranih ostataka u selu Calascio, smještenom na 1210 metara nadmorske visine, u blizini planine Gran Sasso. Tu je 1594. godine sagrađen franjevački samostan Santa Maria delle Grazie. Preliminarno istraživanje kripe u samostanskoj crkvi omogućilo nam je pregled drvenih lijesova s najmanje sedam mumificiranih tijela još uvijek u odjeći i nekoliko koštanih ostataka. Mumije najvjerojatnije potječu iz druge polovice 19. stoljeća, a pripadale su laicima. Njihova očuvanost je posljedica hladnog i suhog okoliša kripe. Prikupljanje cijele serije odvijat će se speleološkim tehnikama u skladu sa stratigrafskim odnosima, kako bi se pratio bioantropološki profil pripadnika ove male zajednice.

