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Best practices in heritage
conservation and management
From the world to Pompeii

Le vie dei Mercanti _ XII Forum Internazionale di Studi

Carminc GAMBARDELLA

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Carmine Gambardella (a cura di)

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editing:

Manuela Piscitelli

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Best practices in heritage conservation and management From the world to Pompeii

Le vie dei Mercanti
XII Forum Internazionale di Studi

Aversa | Capri
June 12th- 14th, 2014

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Peer review

Scholars has been invited to submit researches on theoretical and methodological aspects related to Architecture, Industrial Design and Landscape, and show real applications and experiences carried out on this themes.

Based on blind peer review, abstracts has been accepted, conditionally accepted, or rejected.

Authors of accepted and conditionally accepted papers has been invited to submit full papers. These has been again peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

Conference report

238 abstracts received from:

Australia,
Brazil,
China, Colombia, Cuba, Cyprus,
Denmark,
Egypt,
France,
Greece,
Indonesia, Italy,
Japan,
Madagascar, Malta, México,
Portugal,
Russia,
Saudi Arabia, Slovakia, Spain, Sweden,
Turkey,
United Kingdom, U.S.A,
Yemen.

About 400 authors involved.

196 papers published.

Preface

The XII International Forum Le Vie dei Mercanti has the aim of promoting a debate on local and international experiences relating to the themes of the conservation and management of cultural, architectural, archaeological, landscape and environmental heritages. This debate is particularly relevant in Italy, with it not only being responsible to the world for housing the largest number of UNESCO sites but also having a natural and landscape heritage of great variety and beauty in a region characterised by an intrinsic geological fragility. The management of this vast heritage requires both a serious planning of the interventions as well as adequate funding. The same goes for the protection of the landscape, which in the past was systematically devastated within a myopic perspective that did not take into account the enormous amount of damage caused by wild speculation and hydrogeological instability.

Furthermore natural disasters, such as earthquakes, have led to the transformation and loss of environments which reflect local identity no less than the cultural heritage, in addition to economic damage and in terms of human lives.

In order to conserve and manage the heritage, it is necessary to adopt an integrated and resilient approach in which different skills contribute to the development of improvement and restoration projects, carried out through knowledge, sharing of decisions and proactive sharing, taking into account the social and environmental sustainability of interventions that should characterise the design method in all its aspects.

The key issue is the exchange of ideas so as to give life to a *technological humanism*, understood as the union between the cultural vitality that has characterized humanism and the Renaissance, producing excellent results in all fields of knowledge, and the possibilities currently offered by technological innovation to create platforms in order to support this knowledge. Thus, Pompeii, the most famous archaeological site in the world, is taken as the prime example of the need to adopt a virtuous cycle of conservation and management, supported by the dialogue between the different skills that interact by sharing the same technological platform.

The international debate can be an opportunity to share prime examples of the conservation, management and development of the archaeological, architectural, landscape and environmental heritage through the integration of ideas and experiences of specialists working in different disciplines as well as geographical and cultural contexts.

The conference is open to multidisciplinary experiences on one or more of the proposed themes. Scholars are invited to present research on either the theoretical and methodological aspects or concrete applications carried out on these issues.

Carmine Gambardella



XII International Forum

Le Vie dei
Mercanti

BEST PRACTICE IN
HERITAGE
CONSERVATION
MANAGEMENT
FROM THE WORLD TO POMPEII



Aversa / Capri, 12,13,14 June 2014

The Arab-Norman influence in the architecture of Campania in the 11th and 12th centuries

Lamia HADDA

Department of Architecture and Industrial Design "L. Vanvitelli"- Second University of Naples, Aversa (CE), Italy

E-mail: lamia.hadda@laposte.net

Abstract

In general, the theme of the architectural relationships between the two coasts of the Mediterranean has received little attention from historians. The research on the Arab-Norman tradition concerning the historical and architectural heritage in Campania between the 11th and 12th centuries tends to analyse monuments with common architectural and stylistic features. By using a suitable typological analysis of the decorative elements, the research aims to identify the artistic models between Campania and the Islamic Mediterranean. The identification of a common thread that binds the transformation of the diverse types of construction has defined, on this topic, a global overview of the state of the studies on the architecture in Campania, with the specific purpose of identifying the cultural elements of continuity and innovation.

Keywords: *tarsia*, interlaced arches, Norman architecture, Islamic architecture, Campania.

The decision to perform a detailed analysis of the Arab-Norman presence in Campania and its relationship to Islamic architecture came about from research performed by previous academics. In fact, there is a historiographic thread that started at the beginning of the 19th century that identified aghlabide art in Ifriqiya and Fatimid before and after ziride. That Islamic culture is still clearly visible in the architecture and decorative aspects of religious and cultural monuments in Southern Italy today^[1]. Moreover, recently, important strides have been made to bring to light, through appropriate scientific analysis and exploration *in situ*, the remains of the rich monumental heritage left as a legacy by the Arab civilization in Campania^[2].

In this study, which deals in particular with the origins of the Islamic influence in the architecture of Campania in the 11th and 12th centuries, there are many historical elements that the Arab, Berber and Andalusian populations across the Mediterranean have spread, thus giving life to an artistic syncretism of great beauty.

From the 7th century, a new Middle Ages developed along the coast of Italy. It was a Middle Ages that was culturally different from the western Christian and Byzantine one that, thanks to Rome and Greece, had imposed itself throughout the Mediterranean basin and the eastern reaches of the known world. Southern Italy, with its undefended coastline, was a place in which new peoples migrated. Unmistakable architectural traces of these migrations can be found in Sicily, Sardinia, Abruzzo, Southern Lazio, Campania, Puglia, Basilicata and Calabria. The merging and clashing of these diverse cultures generated integration as well as repulsion. Nonetheless, all over the territory, the fragments of this cultural reciprocity are to be found and it is only recently that they have been given due value. Therefore, in many parts of Southern Italy there exists a sentiment for a distant past that has never gone away. It can be seen in the alleyways of the feverish neighbourhoods in some cities, in the frenzy of the street markets, the colours, the faces, in the lexicon and, above all, in the artistic

and architectural knowledge of Medieval monuments found in southern Italy. Of the many points of contact still visible today, this research concentrates on the cultural material of the architecture - perhaps as it brings out the accents of North Africa and Andalusia - which are the objectives of this work.

Furthermore, this argument was considered relevant in that it characterises the similarities and dependencies, and the ties and inflections that sparked these two worlds, even if our knowledge of Arab monuments - those that still have to be compared with their counterparts in Campania - is not yet sufficiently informed. For this reason, this research assumes even greater importance as it sheds light on an evocative and fascinating period in the Medieval architecture of the Mediterranean in the 11th and 12th centuries.

The numerous monuments from the Norman period still present in Campania evoke a sober understanding of space expressed in the stereotomy of the decorative external hanging walls, occasionally interspersed with inlays of tuff and volcanic stone, according to diverse planes. The ornamental motifs, of Islamic origin, are characterised by a series of arches in doubled and tripled recesses, inlaid in decorative shapes and strings woven with two-toned blocks. These architectural styles attest to the skilled artistic craftsmanship espoused, in particular, by the craftsmen of the city of Salerno and the Amalfi Coast – a politically powerful and rich territory for trade that frequently took place throughout the Mediterranean. Numerous remains of *tarsia* have been found in this territory, a technique much in use in the Arab world, though it has not been found elsewhere in Italy. In Salerno, for example, some of the best known examples have been found. These include: the fragment preserved in the Nona chapel of the Archbishop's residence; the rose window of the apse of the Church of San Felice in Fellingine; the large mullioned windows of the Pinto Palace and the arches of the portico that once enclosed the atrium of the Church of St. Benedict; the decorations of the only existing tower of Castel Terracena; the atrium of the eleventh century cathedral of Salerno and later on the hanging walls of the Pernigotti Palaces; and finally the Fruscione and Veniero Palaces in Sorrento and Villa Rufolo in Ravello (13th century).

Tarsia is a decorative technique that consists of cutting different materials of various colours. These coloured pieces are then cemented on the walls of a building with the purpose of creating a continuous pattern of pure and simple fantasy. The resulting effect is created, not by the changing surface of the wall, but through the contrasting chromatic divergence of the various stones. The stone pieces are worked, with the aid of wooden panels or tin drawn to scale, in a rectangular or curved design so as to replicate the motifs and decorative designs. The creative procedures of *tarsia* are different and oftentimes difficult, though offer numerous decorative possibilities. Generally, geometric *tarsia* are characterised by rectangular motifs with the compositions creating geometric effects in the shape of squares, diamonds, rhombuses, cubes, or checkerboards. Typically, the direction is in symmetrical agreement with the axis of the splice, made with little sand and almost entirely of lime in a bright white colouring, thus accentuating the desired decorative effect.

Tarsia was a technique much in vogue in antiquity and was well known as far as Greece where it was referred to as *plákosis* while in ancient Rome the term *incrustatione* was used – from which the Italian word “incrostazione” comes from. In the classical world, *tarsia* was utilized to decorate walls as well as pavements. Pliny the Elder proclaimed that the technique of encrustation was invented in Caria as the walls of the governor's palace, the Mausoleum of Halicarnassus, were decorated in *proconnesium* marble^[3]. The Romans used mainly marble from which the term *incrustatio* derived, being almost a synonym for the expression *incrustatio marmorea*^[4]. This was greatly diffused in Roman architecture and was widely used in the decoration of many buildings in the Imperial period. The buildings in Pompeii would attest to this. The Pompeian examples are clearly attributable to the period before 79 AD, the year of the devastating eruption of Vesuvius. Other examples of architectural decorations done, using the encrustation technique, in antiquity can be found in Campania. For example, in Quarto Flegreo (NA), in the phlegrean fields, there is the ruin of a mausoleum from the second century A.D. where the technique was used on the outer facing wall^[5]; at Santa Maria Capua Vetere (CE), in the north of Campania, stands another mausoleum that is considered to be the antique model of the bell tower in Amalfi^[6].

According to Pliny the Elder, starting from the Julio-Claudian dynasty, another technique was developed: *l'opus interrasile da interrado*. This technique consisted of either making grooves and leaving the pattern or by cutting out the pattern so that the openings form the design and then filling these bottom plates with a warm mixture of marble dust, or thinner sheet of metal in a different material or by using a different quality of marble^[7]. This particular ancient decorative technique was only used on walls given that for the floors the *crustae* (slices), inserted into the recesses and necessarily much thinner, were regarded as being prone to wear.

One of the most obvious differences between *tarsie* in the classical period and that of the medieval period consisted in the fact that it was used sparingly in the classical period. Conversely, in the medieval period it is possible to observe a veritable “cycle” of decorations. Another substantial difference consists in the choice of building in which the inlaid motifs are found in Pompeii; they are

not present on religious buildings. Meanwhile, in the medieval period, they are found mainly on bells and in churches. In some churches, the medieval *tarsia* is used in the centre of a ceramic bowl whose function was to "shine" when the sun shone, thus creating a pleasant chromatic effect. Such decorative details are still visible on the façade of the Veniero Palace in Sorrento (end of the 12th, beginning of the 13th century) – where the circular medallions are closed at the centre with tiled basins, commonly known as Hispanic-Arab, and are characterized by their particular bowled shape. Likewise, similar bowl shapes have been found in Villa Rufolo in Ravello^[8].

There is much research related to the origins of the *tarsia* technique in the medieval period. Some academics think that it has Arabic origins and that it was brought from Sicily to Campania, or that it occurred simultaneously, while others state that the influences that underlie the origins of the use of *tarsia* are of the Campanian-Sicilian type^[9].

The academic Luigi Kalby hypothesized, in his research, that the decorative motif of *tarsia* is of Arabic origin and that this design arrived in Campania from Sicily, particularly at the end of 12th century. He believes that Arab craftsmen were forced to abandon the island after the sudden and rapid collapse of the monarchy, which had been restored by the Normans^[10].

We must note that, in Sicily, many Arab monuments were defunct of multicoloured *tarsia* and that the oldest *tarsia* present in Sicily are those found in the cathedral and cloisters of Monreale, where in 1176 the monastery, attached to the cathedral, became associated with Cava dei Tirreni and the sculptures of the famous cloister bells where master bell craftsmen worked^[11]. In fact, King William sent a letter to the Abbot of Cava in 1176 mentioning the presence of 100 monks from Cava in Monreale.

Certainly, master Arab *tarsia* craftsmen existed in Sicily and skilled carvers are also mentioned as being amongst the Arabs deported to Lucera; though that is not to exclude that in Sicily the taste for such works is linked, indirectly, to Montecassino, which obviously had its inspiration from Salerno. Moreover, we know that in 1081 Duke Ruggero I, in the surroundings of Messina, allocated large sums of money in order to draw skilled bricklayers and craftsmen "*undecumque terrarum artificiosis caementariis conductis*" ^[12]. In Sicily, in addition to the known examples of the Cathedral of Cefalù and Monreale where *tarsia* walls are found, we are also able to cite the Church of St. Peter and Paul in Agrò, the Church of St. Mary in Mili San Pietro and the Church of St. Peter in Itàla (11th–12th centuries).

The importance of the city of Salerno, as the place in which *tarsia* gained particular importance, is documented by the fact that territory of Salerno has the major number of edifices decorated with this technique. In fact, the portico of the Cathedral of Salerno is one of the most notable examples^[13]. The Cathedral of Salerno was made possible thanks to the will of Alfano, the great archbishop who ran the diocese of Salerno, at the time of the arrival of the triumphant Robert Guiscard in 1077. Alfano of Salerno was also profoundly linked to Abbot Desiderius of Montecassino^[14]. The two clerics, despite the distance between their dioceses, continued to meet and, in particular, Alfano continued to be fascinated by the reconstruction that his friend undertook on the summit of Montecassino. Meanwhile, Desiderius, for his part, probably urged Alfano to undertake the same endeavor for his offices in Salerno. Therefore, Abbot Desiderius must have had a direct influence over the new cathedral which was built in the maritime city shortly afterwards; not only due to the influence that his action exerted on his friend the Archbishop, but also for the friendship that bound him with both Robert Guiscard, who's patrimony financed the new building, and his wife, Sikelgaita, who Desiderius happened to be related to.



Fig. 1: Pompeii, Reg. VIII, Ins. IV

Fig. 2: Pompeii, Reg. I, Ins. X



Fig. 3: Salerno, Cathedral of St. Matthew, Bell tower

Fig. 4: Salerno, Cloister at St. Matthew Cathedral, Detail of *tarsia*

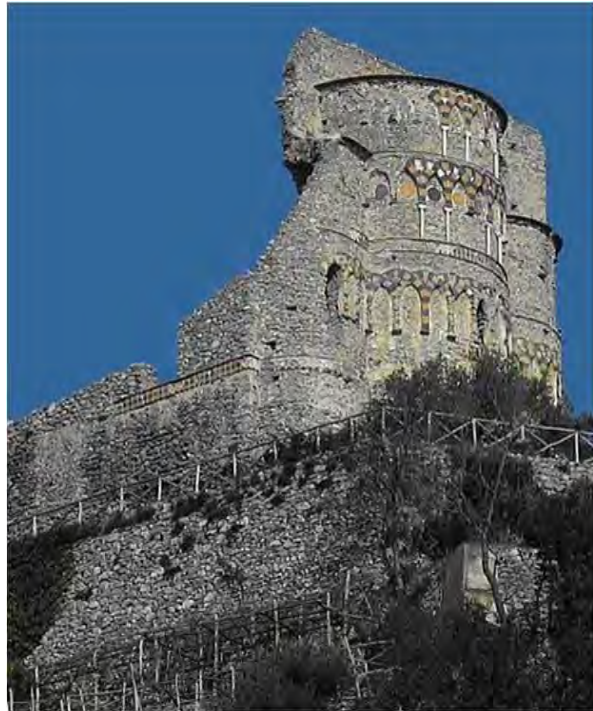


Fig. 5: Ravello, Villa Rufolo, Main gate tower, Underside of the dome

Fig. 6: Pontone of Scala, Church of St. Eustachio, Apse



Fig. 7: Ravello, Cathedral, Bell tower

Desiderius and Alfano were further linked by a predisposition and adherence to the ideals of an eclectic culture - universal, halfway between East and West - that was visualized through works of art, both architectural and figurative, and in terms of both antiquity and innovation^[15].

Numerous artists from all over the Mediterranean participated in the reconstruction of the Abbey of Montecassino. Desiderius devoted himself to the reconstruction, restoration and embellishment of all of those buildings which were in particularly bad condition^[16]. Specialized artisans came, more than likely, from Egypt. They also came from Byzantium, bringing all those technical secrets which recalled the Roman, Greek, Germanic and Arabic heritage, thus bringing the Cassino school of the 9th century to its splendor. This new cultural trend can be seen not only in painting and architecture but also mosaics, enamels and miniatures. Furthermore, the Arab and Byzantine artists who arrived in Montecassino found fertile terrain thanks to the splendid artistic season the abbey experienced in the 9th century. In particular, Abbot Gisulfo created an art form that was highly influenced by Roman antiquity. One must bear in mind that the monastic artists, who lived at the abbey at the time of Abbot Gisulfo, had the possibility to see, better than we can today, the remains of the Roman buildings in Cassino and of all the buildings in the vicinity of the abbey. Moreover, Desiderius had no reservations when it came to repairing the columns of the abbey by making purchases at a Roman antique shop.

The Cathedral of Salerno also plays an important role as it was responsible for influencing many of the Romanesque churches in the surrounding area. For example, the Cathedral of Ravello and Scala, the churches of St. Maria in Gradillo and St. Giovanni del Toro in Ravello, St. Eustachio in Pontone and The Annunciation in Scala, just to mention some of the notable examples whose walls were decorated using *tarsia*.

Only recently have academics agreed unanimously that in Campania, Romanesque builders were inspired by the decorative inlay systems of the Islamic world. Roberto Pane affirms that "it is conceivably possible to visualize a thirteenth-century Salerno; stunningly coloured by the East".

In the Arab-Islamic world such decorations were widely known in the Umayyad Caliphate and afterwards in Ayyubid architecture in Syria and Egypt. In the 8th and 9th centuries, with the arrival of the Umayyads in Iberia, the use of this technique, when applied to decorations with multicoloured segments, became prevalent. There are numerous examples of Arabic buildings, using *tarsia*, above all, in Andalucia: The Great Mosque of Cordoba (789-988). Only from the 10th and 11th centuries do we see North African monuments decorated with multicoloured segments or stone motifs in *tarsia*: the dome of the narthex gallery of the Al-Zaytuna mosque in Tunis (10th-11th centuries).

Furthermore interlaced arches, many of whom were also decorated with *tarsia* motifs, had a strong Arab influence. The idea of reinforcing the arch system through interweaving is most definitely of pre-Islamic origin, while in the West interwoven arches appear frequently in Roman mosaic designs. In Syria, they were already present in the early Christian period and were used to decorate facades, like on the lintel of the church of Behyo (6th century) such as the slab of stone of the church of Qasr al-Hayr al-Gharbi (728-29), where it is possible to see a multi-level architectural structure in which the ground floor consists of a small open archlet formed by intertwined arches.

The creation of the ornamented arches was realised by southern Italian craftsmen using stone material; dark slate; yellowish limestone; terracotta; travertine, sometimes perforated; bricks and, above all, grey and yellow tuff that allowed for various chromatic interplays^[17]. The use of intertwined arches characterised many of the buildings during the Norman period. Such decorations, achieved using fascinating fantasy shapes and geometries, conferred a certain Orientale style on the walls. The decorative elements were usually inserted in the upper parts of the churchly buildings and in the apses area; on the upper crowning of bells and, in general, on the external walls of noble buildings - articulated in complex and lively twists that would incorporate creative effects of light and shade.

The intertwined arches, even if used in the pre-Islamic period, can be placed in North Africa as belonging to the Fatimid culture. There is no doubt that there are many artistic links that have various origins, as decorated intertwined arches are present on many Romanesque monuments in Normandy, England and Norman Sicily; but also in Andalusia and in Islamic North Africa. And, in particular, in the Arab world, there is an accentuated regression of the functional form towards the supremacy of an ever more decorative one.

The flat treatment of the outer surface of the intertwined arches of the drum of the Salernitan bell tower recalls examples in the Algerian Islamic buildings, such as the palace of Ziride in Ashir; the minarets of the mosque of Sid Okba in Biskra (7th century); the mosque of Al Qal'a of Beni Hammad (11th century); the mosque of El-Mechouar in Tlemcen, built at the beginning of the 13th century in the Hammadite and Almohad style; and the Moroccan buildings, such as the Kutubiyya Mosque (1160-1195) and the *Qubba* al Barudiyin (12th century) in Marrakesh. The use of intertwined arches is quite diffuse, above all, in Andalusia, where it is still present in the mosque of Bab al-Mardum in Toledo (999-1000), The Aljafería Palace in Zaragoza (1049) and finally, the Giralda in Seville (1184-1198).

The intertwined arches of the transept and apse of the Cathedral of Cefalù (1145), most clearly Islamic, are the first examples built in Sicily - following those of the bell tower of Salerno (1140), by only a few years. The intertwined arches, with chromatic valences, of the churches of Monreale in

Sicily, St. Eustachio in Pontone of Scala and the Cathedral of Casertavecchia in Campania are all very similar.

It is possible to state that the Campanian models draw their inspiration from Umayyad Spain, this may be postulated from the Andalusian origin of the motifs, intertwined arches and the use of multicoloured *tarsia* - almost certainly reaching Campania through the role played by the city of Amalfi in the Mediterranean. It is no coincidence that the Arab traveller Ibn Hawqal (972) considered Amalfi as being more important than Napoli: its boats were the fastest in the Mediterranean and its territory the most fertile - enjoying the best conditions and being characterised by its richness and opulence^[18].

To summarize, we can state that the routes that intertwined arches and *tarsia* took to penetrate the architecture of Southern Italy were numerous and varied. Primarily, they highlighted the differences that distinguished Arab architecture, with its Sicilian and Andalusian elements, assigning only to the later the artistic components that legitimise the Arabic morphological origin of many architectural elements. Conversely, as for the intertwined arches, they had a simultaneous emergence, at the expense of any temporal clue in Southern Italy, similarly to what happened in England, with the presence of the Normans.

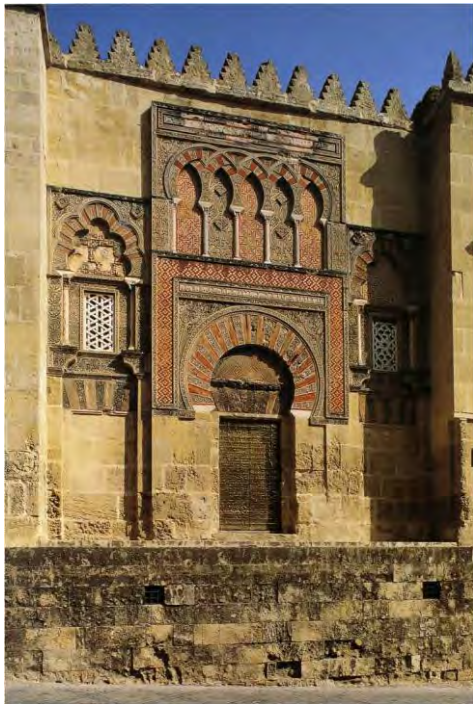


Fig. 8: Cordoba, Gate tower at Great Mosque

Fig. 9: Moroccan, Marrakesh, *Qubba al-Barudiyyin*, Ablution Room



Fig. 10: Tunis, Great Mosque of Al-Zaytuna, Dome of the narthex gallery

Fig. 11: Tunis, Great Mosque of Al-Zaytuna, Underside of the dome of the narthex gallery



Fig. 12: Moroccan, Marrakesh, Kutubiyya Mosque, Minaret
 Fig. 13: Algeria, Constantine, Historical center



Fig. 14: Casertavecchia, Cathedral, Lantern tower

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[¹⁷] Grey tuff like yellow tuff, due to their volcanic origin; belong to the category of pyroclastic rocks which is found in Salerno. Grey tuff has a volcanic origin and is found in the northern part of the plains of Campania and in the Agro-nocerino-sarnese while yellow tuff came from the volcanic eruptions of the Flegrea area: PENTA, Francesco. *I materiali da costruzione dell'Italia meridionale*. Napoli: Fondazione Politecnica del Mezzogiorno, 1935, p. 181-183.

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