

Volume pubblicato in coedizione con l'Istituto Internazionale di Studi Liguri,
Sezione Finalese



Soprintendenza Archeologia, Belle Arti e Paesaggio
per la città metropolitana di Genova
e le province di Imperia, La Spezia e Savona



**SOCIETÀ PER LA PREISTORIA E PROTOSTORIA
DELLA REGIONE FRIULI-VENEZIA GIULIA**

QUADERNO - 15

PAOLO BIAGI e ELISABETTA STARNINI

**GLI SCAVI ALL'ARMA DELL'AQUILA
(FINALE LIGURE, SAVONA):
LE RICERCHE E I MATERIALI DEGLI
SCAVI DEL NOVECENTO**

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Trieste 2018

**SOCIETÀ PER LA PREISTORIA E PROTOSTORIA
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QUADERNO 15 - 2018

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c/o Museo Civico di Storia Naturale
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REDATTORE

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In copertina: immagine di vaso con decorazione impressa, scavi G.A. Silla (Archivio Fotografico del Museo Archeologico del Finale, Finale Borgo, SV)

In retro-copertina: riproduzione del disegno originale autografo della stratigrafia dell'Arma dell'Aquila tratta dal diario di scavo di C. Richard (Archivio dell'Istituto Internazionale di Studi Liguri, Bordighera, IM)

In ricordo di Virginia “Ginetta” Chiappella, un’archeologa ligure troppo a lungo dimenticata,
nel trentennale della sua morte



*Virginia Chiappella in una fotografia del 1935
(Struppa (GE), 14/06/1905 - Genova, 31/01/1988)*

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SUMMARY

In the last century, the prehistorian Pia Laviosa Zambotti was the first to point out the importance of the discoveries made by Camillo Richard at the Arma dell'Aquila rock-shelter (Finale Ligure, Savona) in 1938 and 1942. This author wrote an entire paragraph of her chapter on the archaeology of the Ligurian caves of her seminal volume entitled "*Le più antiche culture agricole europee*", published in Milan in 1943, on the Arma dell'Aquila discoveries. Also the famous Ligurian archaeologist Luigi Bernabò Brea, mentioned the Neolithic Impressed Wares from the Aquila rock-shelter as first referring context, framing the assemblages recovered from his excavations at the Arene Candide Cave into the general picture of the Mediterranean Neolithic.

However, while other important Ligurian caves were excavated starting from the 1970s, among which are the Arene Candide and Pollera caves, and other less important complexes were reanalysed and studied, the Arma dell'Aquila was almost definitively forgotten. Moreover, its preservation was unfortunately heavily compromised already in the 1940s, despite the fact that it had been formerly protected by an official Italian state act signed by L. Bernabò Brea, because the site was located inside an active Finale Stone quarry.

The study of the site was resumed only in the 1980s. During the same years a long-lasting interdisciplinary work encompassing analysis, revision, restoration, and documentation of the assemblages recovered during the 1940s and the preceding excavations finally took place. The very long enterprise that culminated in the publication of the present volume, was caused by the growing complexity of the questions to be answered during the writing of the different texts, and the increasing number of new scientific methods at disposal. For example we can mention first the radiocarbon method that has greatly improved during the last decades thanks to the introduction first of AMS and later MICADAS counters, and the consequent necessity of obtaining more and more precise results, and second the archaeometric methods of analysis to try to interpret the provenance of raw materials employed for the manufacture of different types of artefacts.

It is important to remark that the publication of the present volume has never been supported by any funds. The researchers' team that we thank for patience, professional work and enthusiasm, has worked on the different assemblages exclusively because of the great interest and scientific importance of the site. From one side the absence of any specific research grant has slowed the publication progress, while from another it has freed each author from any pressing deadline that might have prevented deepening into the problems to solve and develop.

Though the original morphology of the rock-shelter, and the caves that originally constituted the system at present called Arma dell'Aquila, have been completely destroyed and dismantled by progressive Finale Stone quarrying, a few authors, among whom is Federico Hosmer Zambelli, had already suggested that during prehistory the archaeological site was just one large cave. We can also suggest that at least during the early and middle Holocene, the cave never had a deep hypogeal development. In those times it most probably looked like a cavern, facing the Aquila River Valley.

One of the most interesting results achieved by the study of the finds is represented by the identification of an early Upper Palaeolithic occupation of the shelter that took place during the Aurignacian period. This is shown by the presence of a few chipped stone artefacts recovered by C. Richard from his 9th "fireplace" (or 2nd Palaeolithic "fireplace"), uncovered at ca 6 m of depth, and by a radiocarbon date (GrN-17486: 39,900±5100/-3100 BP). The date, obtained at the beginning of this study by traditional method has a high standard deviation. Nevertheless, it shows that the site was first settled during the so-called Proto-Aurignacian, around 40 ky cal BC. The assay fits well into our present knowledge, and a few results obtained from other Ligurian sites, among which are Riparo Mochi and Riparo Bombrini at the Balzi Rossi. It confirms that also the Finalese saw the first peopling of Anatomically Modern Humans that took place most probably during a warm oscillation of the OIS3. The Late Pleistocene sequence of the cave is followed by a sterile layer, which is followed again by another "fireplace" (Richard's 1st Palaeolithic "fireplace") radiocarbon-dated to the beginning of the Epigravettian period around 23-22,000 ky cal BC (GrN-17485: 20,430±480/-450 BP). It shows that another Late Palaeolithic occupation occurred at the cave, most probably around the beginning of the OIS2.

As for other Ligurian caves, we do not have any trace of human frequentation at the Aquila Rock-shelter during the Mesolithic. The thick sterile deposits corresponding to this period, stratified between the Late Palaeolithic Epigravettian occupation and the Early Neolithic Impressed Ware Culture layer, are described by C. Richard as "*a series of many thin levels of marl alternated to others of thin limestone detritus and soil*", which he thought had been deposited by "*hydraulic currents*".

According to the radiocarbon chronology, and the characteristics of the material culture assemblages, the earliest Holocene human presence of Arma dell'Aquila corresponds to the Neolithic occupation that took

place in a rather advanced moment of the Impressed Ware Culture period, attributable to the “*Cardial Neolithic with horizontal zonations*”, otherwise called II Cardial Neolithic. In Liguria, assemblages of this aspect have been recovered from layer 2 of Arma dello Stefanin in the Val Pennavaira, radiocarbon-dated to 6610±60 BP (Bln-3276), as well as from San Sebastiano di Perti in the Finalese, the only Impressed Ware open-air site so far known in Liguria, from which three AMS dates are available that span from 6767±39 BP (OxA-21359) to 6675±33 BP (OxA-19734). Moreover the Impressed Ware pottery assemblage from the Arma dell’Aquila can be compared to those from other famous sites of southern France, among which is Pont de Roque-Haute. Pit 1 of this site has been dated to 6745±70 BP (Lyon-245 (OxA)), a result that can be compared to those obtained from Aquila, and part of the Pendimoun sequence in Provence.

Other important results have been achieved thanks to the taphonomic study and radiocarbon dating of the Neolithic burials. They show that different periods of inhumation took place inside the cave between the early and middle Neolithic. Of major importance is the presence of a small cemetery, at present the oldest so far discovered in the upper Tyrrhenian region, radiocarbon-dated to the last three centuries of the sixth millennium BC. At present its cultural attribution is difficult to assess because of the absence of cultural remains deposited inside the tombs as grave goods. In contrast, other human remains yielded earlier dates corresponding to an Early Neolithic period of settlement. These latter are undoubtedly the only human bones of this period so far discovered in Liguria. In effect, the Arene Candide grave ACT2, formerly ascribed to the Early Neolithic Impressed Ware Culture because of the absence of any cist slab, has been recently radiocarbon-dated to the Late Neolithic.

In this respect it is important to point out that the date 6570±35 BP (KIA-28340) obtained ca ten years ago from the immature individual of burial V excavated by L. Bernabò Brea at the Arene Candide, is not reliable because of its stratigraphic location above burial VI, radiocarbon-dated to 5260±135 BP (GX-16962). The result is most probably due to a post-excavation contamination of the sample. To sum up, the data presented above show that our knowledge regarding the Impressed Ware Culture burial customs and rituals in Liguria is still very poor.

Very interesting information has been obtained from the anthropological and palaeopathological analysis of the human bones. They show quite a high incidence of tuberculosis and pathological alterations due to unhealthy living conditions probably related to the close coexistence of humans and domestic animals, which led to the establishment of a high infective environment for humans.

Regarding the chipped stone assemblages, and the raw material exploited for their manufacture, it is interesting to pinpoint that the Arma dell’Aquila did not yield any obsidian tool. This fact contrasts with the evidence available from other Neolithic sites of Liguria, among which are Cave Pollera, the Arene Candide, and Arma dello Stefanin, from whose sequences a few obsidian artefacts have been recovered. However, we can suggest that the small assemblage of knapped stones retrieved from the Arma dell’Aquila, and the limited area covered by the excavations carried out at the site, are not enough to provide us with a reliable picture of the raw material variety employed by the prehistoric communities who inhabited the shelter throughout the different ages.

At present, due to the limited dataset at our disposal for Liguria, it is difficult to establish with certainty whether the presence of obsidian artefacts from different central Mediterranean sources (Sardinia, Lipari and the Pontine Islands) is to be referred to specific periods of the Neolithic, or they show different procurement routes and sources corresponding to well-defined Neolithic periods. It would be very important to clarify this point in order to understand trajectories and modes of Neolithization in the upper Tyrrhenian Sea.

As reported above, the chipped stone assemblage from the Arma dell’Aquila is numerically very poor as are most of the Holocene lithic complexes yielded by the Ligurian caves. However, as already remarked for the lithics from the Arene Candide Cave, also a few artefacts from Arma dell’Aquila have been obtained from Alpine raw material, most probably of Lessini Hills (Verona) provenance.

Regarding the small polished and ground stone assemblage, we can notice the presence of axes/adzes, some of which of a unique shape, upper and lower querns as well as pestles, which show that different activities were performed in the shelter. The analysis of the raw material employed for the production of the cutting-edged tools shows that they most probably come from beach and river pebbles, and consist of rocks available from a region located just east of the Finalese (Gruppo di Voltri, Sestri-Voltaggio line). It is important to note that the aforementioned eastward trajectory coincides with that indicated by the archaeometric study of some ceramic potsherds, showing a certain degree of mobility and territorial interactions of the Neolithic human groups settled along the coasts of Liguria.

The archaeobotanical analysis regards a small number of anthracological remains, mainly charred pieces of arboreal plants, recovered by C. Richard throughout the entire cave sequence. They provided us with a reasonable view of the vegetation exploited by humans during different periods of habitation.

The faunal remains consist of a rich assemblage from both the Palaeolithic and the Neolithic deposits. Although their study has been partly conditioned by the nature of the deposits from which they have been retrieved, and the complexity of the rock-shelter sequence, we have to note the presence of caprovids since the earliest Neolithic layers (7th and 6th “fireplaces”). Their precise chronology remains to be defined by radiocarbon dating in the future, in order to compare them with our current knowledge regarding the introduction of sheep and goats in Liguria at the beginning of the Neolithic, as well as to contribute to the problem of the occurrence of two different species of sheep (one large and one small) in the region recently defined thanks to morphometric criteria. However, it is interesting to point out that the number of animal bones retrieved from the Neolithic “fireplaces” cannot be compared to that of the potsherds. For examples these latter are more numerous in the 5th “fireplace” which, in contrast, has yielded a lower number of bones if compared with the 7th and 6th “fireplaces”. The remarkable differences between quantity and percentage of animal bones versus ceramic potsherds within the different layers might be related to the different activities and subsistence economy practised by the human groups during the Neolithic periods of occupation of the Arma dell’Aquila.

The study of the malacological remains has confirmed the collection and exploitation of *Spondylus gaederopus* valves for the production of bracelets during the Neolithic in Liguria, adding Arma dell’Aquila as a new locality to the distribution map of the Italian sites, from which artefacts made from this marine bivalve have been found.

Regarding the Middle Neolithic Square-Mouthed Pottery Culture, apart from the aforementioned funerary aspects, the presence of a rich ceramic assemblage shows that the shelter was most probably more intensively settled during this period. The pottery is represented mainly by undecorated sherds with dark or brown, well-polished outer surfaces that represent the entire variety of vessel shapes known for this cultural aspect. Among them are miniature spherical and pipe-vessels, and more mundane vessel shapes for food consumption, among which deep bowls and necked flasks are the most common, with squared or rounded opening, and large storage containers. Pedestalled vessels are absent. A few bottom fragments of large vessels show traces of either red ochre or burnt organic material (food remains?) whose composition would be interesting to analyse with appropriate methods. We have to remark the scarcity of decorated sherds. Among them are a few scratched and incised patterns that do not find matching parallels from any other Ligurian Middle Neolithic site.

Both the radiocarbon dates and the presence of characteristic Square-Mouthed Pottery vessel shapes suggest a diversified and most probably alternated phases of exploitation of the rock-shelter, represented by burial and domestic activities that most probably began since the last centuries of the 7th millennium and continued up to the middle of the 6th millennium BP. The nature of human activity and the characteristics of the material culture remains of these 5/6 centuries of Middle Neolithic exploitation are to be better defined in the future with the help of more radiocarbon dates from well-defined stratified regional contexts.

The radiocarbon dates and the typology of the material culture remains retrieved from the excavations carried out at the Aquila rock-shelter in the 1900s show that habitation was discontinuous and its use diversified through the time, at least in the area where the research was conducted. Here we witness more or less intense periods of settling, funerary utilisation, and probable abandonments, throughout the entire sequence, starting from the Late Palaeolithic to post-medieval times.

We have to remember that the few caves of Liguria from which useful data can be achieved for the reconstruction of the Neolithic peopling of the region show very different stratigraphic sequences that are always incomplete. Moreover they do not necessarily show chronologically comparable and culturally coeval periods of anthropization, and their environmental location is varied. Problems related with internal chronological sequences are evident also at Arma dell’Aquila, where the oldest Neolithic Impressed Ware period is not represented, while it is known from two neighbouring caves, namely the Arene Candide and Pollera. The few data at our disposal show that the territory was first inhabited by Neolithic communities belonging to the “*sillon d’impressions*” Impressed Ware group, otherwise known in France as “*Ligurien*” style. They settled in different sites and environmental locations as they did in the Provence and Languedoc, as we know from the excavations carried out in south France. The results produced by the aforementioned researches favoured the construction of a reliable sequence of the earliest Neolithic events that took place in this part of the north Tyrrhenian region, though our knowledge and comprehension of the problems are still limited by the scarcity and fragmentation of available data.

This problem is even more complex in Liguria where the sites at our disposal from which we can try to build up a reliable sequence of the events are in effect those known already ca 70 years ago, with the exception of San Sebastiano di Perti, the only Early Neolithic open-air site so far discovered in the Finalese, though never excavated.

Arma dell'Aquila fits into the above-described general picture. Though the site was excavated more than 70 years ago, the finds had never been properly studied and the results had never been published in detail. Moreover, the site has been rarely mentioned in the recent literature, with the exception of a few short notes reported mainly from last century's papers. For sure it has never been considered to be the second most important sequence of the Finalese, following that of the more famous Arene Candide Cave. Thanks to the interdisciplinary studies presented in this volume, some of the important problems of the Ligurian Neolithic have been re-discussed and, whenever possible, updated. Among them are 1) questions regarding the variable periods of Neolithic occupation as they are shown by the chronology of the most important archaeological sequences, 2) the spatial distribution of the local peopling and its demographic expansion, 3) the chronology of the oldest Neolithic graveyards and the different ways people were buried, 4) the circulation of the material culture assemblages. Regarding this aspect at present a few data are available from south-western France. This territory shows indeed close similarities with Liguria at least as regards the earliest pottery production, though the details of the eventual relationships are badly known, 5) the living condition and health problems of the earliest Neolithic inhabitants of the upper Tyrrhenian Sea.

Other open problems regard the origin and development of the Square-Mouthed Pottery Culture that characterises the Middle Neolithic period in most of northern Italy. When and where this cultural aspect started to appear and developed, and how long did it last in the territory under study? Unfortunately the data retrieved from Arma dell'Aquila are not sufficient to answer the question and therefore we cannot solve the problem. The ceramic assemblage excavated from the cave undoubtedly belongs to the early phase of development of the culture that the available radiocarbon dates attribute to the first half of the 6th millennium BP.

Just around the middle of the same millennium this aspect is no longer represented at Aquila. The same evidence is known from the Arene Candide and other Ligurian caves. What kind of relationships was entertained with the Po Plain during the first half of the 6th millennium BP? Why pottery decorative patterns that characterise the coarse wares of the early phases of the culture in the Po Valley, namely the linear incised patterns on necked square-mouthed deep vessels, and "*stab and drag*" decorations impressed on the surfaces of deep storage containers, are not present in the Middle Neolithic sequences of the Finalese, apart from just a few potsherds, recovered from the Arene Candide for example? Why "*stab and drag*" ornamented pots are otherwise known from the Alpicella rock-shelter (Varazze, Savona), showing evident, though badly known relationships with the plain that opens north of the Alpine-Appennine watershed? Unfortunately the Arma dell'Aquila finds are unsuited to reply to these questions, though they confirmed a generic homogeneity in the square-mouthed pottery production in comparison to that of the Po Valley during this period of occupation of the site.

The Arma dell'Aquila continued to be settled, though very sporadically, also during the Bronze Ages, as shown by the presence of very few characteristic potsherds. Moreover, the recovery of ceramic fragments attributed to Late Roman and post-Medieval times might be related to pastoral activities or woodland cleaning of the territory around the cave that took place during this long historic period.

(translated by P. Biagi, E. Starnini and B.A. Voytek)