



## Article

# Looking for the Mesolithic in the Venetian Plain: first results from the Sile river springs (North-Eastern Italy)

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## Key words

- Mesolithic
- Venetian plain
- lithic scatters
- Sile river
- springs area

## Parole chiave

- Mesolitico
- Pianura veneta
- industrie litiche di superficie
- fiume Sile
- area delle risorgive

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## Summary

During the '80s of the last century the activity of local amateurs led to the identification and collection of several thousand lithic artefacts mostly referred to the Mesolithic in the area of the Sile river springs (Veneto, North-Eastern Italy). Although representing one of the rare evidence of occupation of alluvial plains by Mesolithic groups in the Italian peninsula, for several years such discoveries have been completely forgotten. Starting from 2012 a new research project aimed at the diachronic reconstruction of prehistoric settlement dynamics related to environmental changes has been undertaken over this area. The preliminary data indicate an intense occupation near the springs of the river Sile by the Mesolithic groups during the ancient and middle Holocene, in close connection to the peculiar features of this wetland area which possibly represented the focus of rich biotopes suitable for subsistence.

## Riassunto

Durante gli anni '80 del secolo scorso le attività di ricerca di alcuni appassionati hanno portato all'identificazione e alla raccolta di diverse migliaia di manufatti litici, prevalentemente riferibili al Mesolitico, nell'area delle Sorgenti del Sile (Veneto, Italia nord-orientale). Nonostante nella penisola italiana questi ritrovamenti rappresentino una delle poche evidenze d'occupazione della pianura da parte dei gruppi mesolitici, per molti anni non sono stati adeguatamente considerati e valorizzati. A partire dal 2012 è stato intrapreso un nuovo progetto di ricerca finalizzato alla ricostruzione diacronica delle dinamiche insediative di questa area in connessione all'evoluzione ambientale. I dati preliminari indicano un'intensa occupazione della zona delle sorgenti del Sile durante l'Olocene antico e medio, che può essere connessa alle caratteristiche peculiari di quest'area, probabilmente fulcro di ricchi biotopi favorevoli alle attività di sussistenza dei gruppi preistorici.

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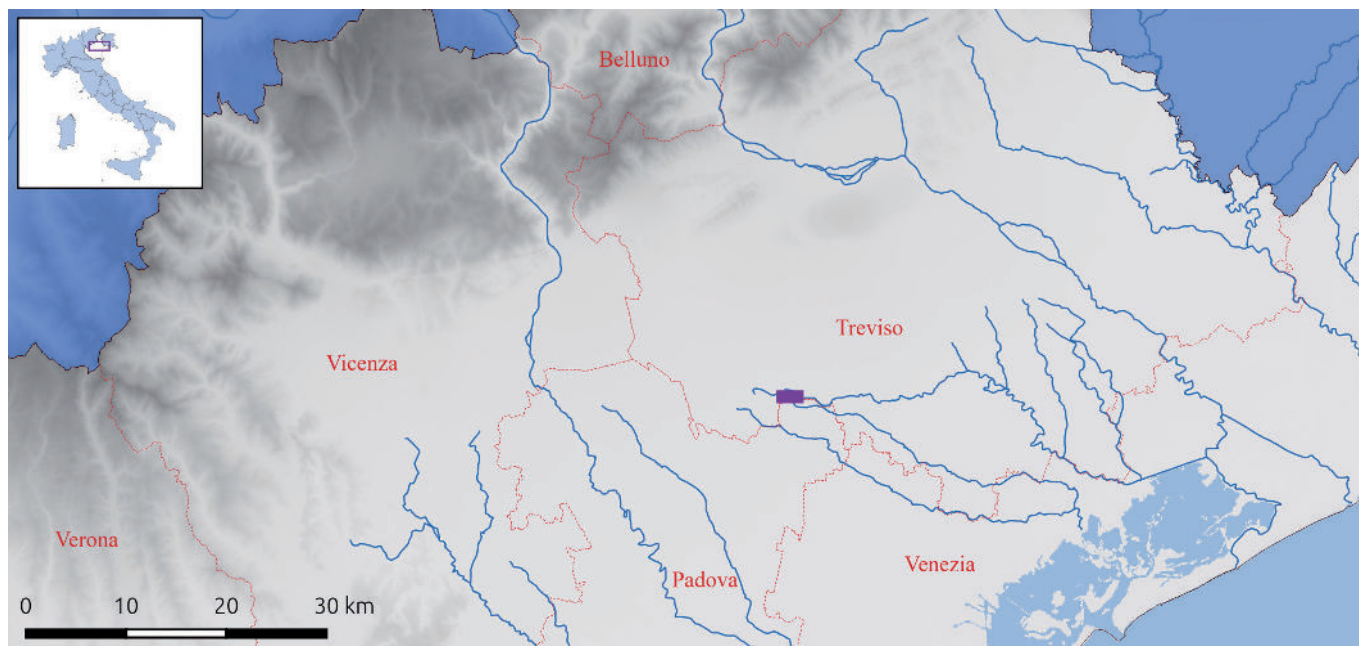


Fig. 1 - Location of the project area. / Localizzazione dell'area delle ricerche.

## Introduction

Since its identification in the early 1970s the Mesolithic of North-Eastern Italy has mostly been related to mountainous environments (Broglia 1971). After the first discoveries in the Adige valley bottom and at the Colbricon lakes, near San Martino di Castrozza, a massive evidence referring to this period was collected during the following decades in Trentino - Alto Adige (Broglia 1992, Dalmeri & Pedrotti 1994, Kompatscher & Hrozny Kompatscher 2007) and the Belluno Dolomites (Alciati *et al.* 2004, Fontana & Pasi 2002, Fontana *et al.* 2009).

In the same years other discoveries were carried out in the Northern Adriatic plain between the lower Piave valley and the Venetian mainland (Paolillo 1988, Broglia & Paolillo 1989, Broglia *et al.* 1987, Gerhardinger 1984, 1984/1985). The attribution of most complexes collected from this area, exclusively represented by surface lithic scatters, to the Castelnovian contributed to the reconstruction of a diachronic settlement model for North-Eastern Italy according to which Sauveterrian groups would have mainly focused on the exploitation of the upland sector of the region while Castelnovian ones would have shifted towards the plain as a consequence of environmental changes occurred during the Atlantic period (Bagolini & Broglia 1985, Broglia & Paolillo 1989, Broglia *et al.* 1987).

In spite of the high potential offered by these sites for the reconstruction of the territorial organization of the last hunter-gatherers, after these first steps the problem of the lowland Mesolithic was rapidly dismissed as well as any academic research activity. Only recently a systematic research project has started in one of the most promising areas of the Venetian plain, that of the Sile river springs between the provinces of Treviso and Padova (Vedelago and Piombino Dese municipalities). Here the presence of a rich Mesolithic record is known since the early 1980s when local amateurs identified and collected thousands of lithic artefacts all along the upper course of the river Sile, possibly favoured by the progressive increase of plough depth during agricultural activities (Gerhardinger 1984). This paper presents the first preliminary results of this project which is focused on the investigation of the role of plain areas for the subsistence of the Mesolithic groups in Northern Italy. The project is articulated into different steps, namely: a) the definition of the palaeo-environmental setting and the geomorphological evolution of the area; b) the systematic collection of the abundant lithic scatters still coming to light from plough fields; c) the opening of trenches aimed

at highlighting possible undamaged *in situ* deposits; d) the diachronic reconstruction of prehistoric settlement dynamics in the area in connection to environmental changes.

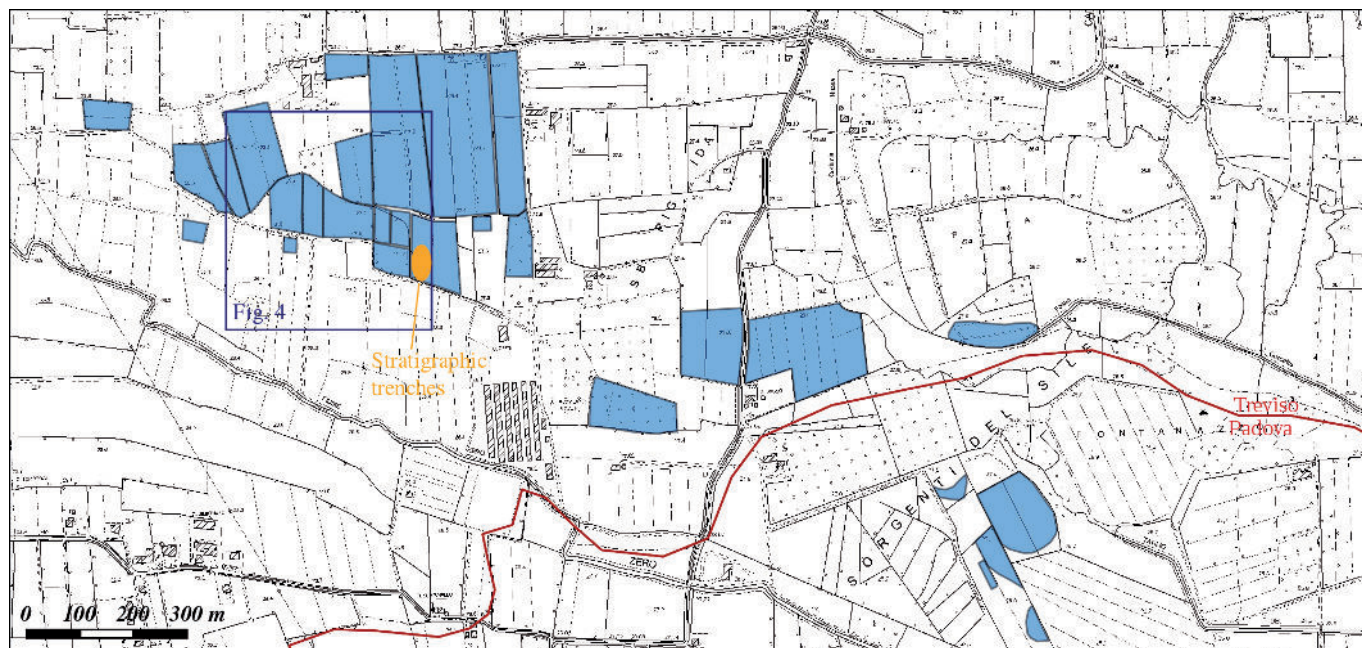
## The Geomorphological Context

The study area is located in the central part of the Venetian plain (North-Eastern Italy) (Fig. 1). The spring line of the river Sile locally marks the transition between the so-called "high" and "low" sectors of the alluvial plain. The former is characterised by coarse, gravel-rich sediments and presents a well-developed soil with reddish argillic horizons. These sediments characterise the southernmost part of the Montebelluna megafan, deposited by the river Piave before the Last Glacial Maximum (LGM) when it used to flow to the west of the Montello Hill (Mozzi 2005, Fontana *et al.* 2008). The latter consists of finer alluvial sediments (sandy channel belts, often forming alluvial ridges, and silty-clay overbank fines) which belong to the megafan of the river Brenta dated to the LGM period. Between the two lies an elongated depressed area where the un-



Fig. 2 - An active spring of the Sile area (photo D. Visentin). / Un fontanile attivo nell'area del Sile (foto D. Visentin)





**Fig. 3** - The project area and position of the stratigraphic trenches. Fields that yielded lithic artefacts are indicated in blue. / L'area oggetto delle ricerche e la posizione dei saggi stratigrafici. Gli appezzamenti che hanno restituito i reperti sono evidenziati in blu.

derground water table is at surface level and numerous springs—the so called *fontanilli* or *fontanazzi*—arise (Fig. 2). In detail, the geomorphology of the spring zone is characterized by the presence of minor swales and alluvial ridges (Mozzi 1990-91, Mozzi 1998). The latter appear as slightly raised sandy areas with moderately well-drained yellowish soils. The outcropping of the water table in the depressions leads to the formation of swampy areas characterized by peat deposition. Land reclamation since the 1950s has dramatically reduced these wetlands, whose former extent can now be traced in the fields as it is highlighted by the presence of dark, organic-rich soils resulting from peat degradation.

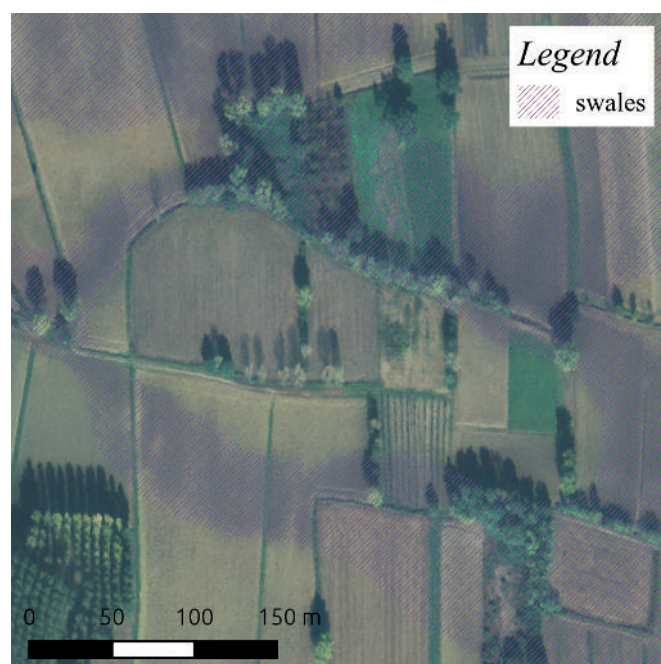
### Preliminary Field Survey Results

Systematic survey campaigns in the spring area of the river Sile started in 2012. The methodology applied consists of mapping this wide area in order to locate all lithic scatters and collecting the artefacts coming to light. From the main *corpus* of sites—discovered in the past years—survey activity is moving to the neighbouring fields, as soon as agricultural practices turn them available for inspection. In the fields where a significant cluster of artefacts is identified, the collection proceeds by applying a 5 meters grid in order to enhance the spatial resolution of the dataset and allow analysis on the distribution of the evidence.

Up to present day the mapping activity is still at a preliminary stage, considering that the area interested by Mesolithic findings exceeds 200 hectares and a great part of it is still to be systematically covered (Fig. 3). Nonetheless it is already possible to identify a clear correspondence between the distribution of lithic scatters and the small sandy ridges attested in the area (Fig. 4) (Mozzi 1990/1991). Being the higher and thus less humid areas, these ridges have probably represented the places chosen for settlement.

At the same time a techno-economical and typological analysis is being carried out on the assemblages collected: a total of more than 6000 artefacts coming from 9 fields (6.3 ha ca.) has been analysed so far. As regards the preservation state, artefacts are generally characterised by thick patinas. On the other hand edge damage due to plough activity is quite varied: some elements appear almost

complete while others are heavily scarred. Among this sample of artefacts 332 cores, 362 retouched blanks and 123 microburins have been recognised attesting a relatively high presence of modified blanks (8% ca.). While the high number of cores could be due to their larger dimensions—that allow an easier identification in the fields—the same cannot be said for tools. Armatures, which are present in the assemblage, may be much underestimated due to their



**Fig. 4** - Aerial photo showing some palaeochannels with peaty infilling that enclose better-drained areas. In the central zone a few thousands Mesolithic artefacts have been collected. / Foto aerea raffigurante alcuni paleocanali con riempimenti torbosi che circondano aree meglio drenate. Nella zona centrale sono state raccolte alcune migliaia di manufatti.



generally small dimensions.

The preliminary typological analysis has allowed a cultural attribution of the assemblages. The Mesolithic evidence—both Sauveterrian and Castelnovian—is undoubtedly the most attested although it is not the only one. In the easternmost part some cores and tools seem to indicate that human occupation of the area began at the end of the Pleistocene (Late Epigravettian). Furthermore other groups of artefacts reflect a more recent prehistoric chronology.

### First Evidence From The Stratigraphic Trenches

Three stratigraphic trenches have been opened in the westernmost sector of the investigated area with the purpose of verifying the sedimentary sequence and identifying possible undamaged *in situ* deposits. The first trench has been dug in correspondence with an area superficially characterised by sandy sediments (Fig. 5). The other two were dug respectively a few meters to the South and to the East of the first trench, where the surface deposits appeared darker and richer in organic substances. The depths of the trenches have varied between 50 and 115 centimetres. A few artefacts have been identified in all the three trenches but only within the ploughed layer (S.U. 1). The underneath layer is represented by silty-sandy to clay-silty sediments, partially pedogenised, deposited by the river Brenta during the LGM. The top of this layer appeared clearly truncated supporting the hypothesis that the archaeological context in this area has been largely destroyed by the mechanical action of the ploughs.

### Concluding Remarks

The wide area of the Sile river springs where the lithic scatters are coming to light represents the richest and most extensive concentration of Mesolithic sites so far known in the Italian peninsula. This intensive occupation of the Sile springs and river banks during the lower and middle Holocene can be related to the presence of rich biotopes suitable for the subsistence of the last hunter-gatherers and attests the occupation of alluvial plain areas by Mesolithic groups.

In spite of the massive evidence coming from surface lithic scatters, this area still lacks stratigraphic data that would be very useful in order to fully explain the reasons that led to the formation of such clusters of human settlement during the first part of the Holocene, as well as the evolution of peopling through time. As from the previously mentioned trenches, it appears that during the last 40 years the western sector of the area, being generally dryer than the eastern one and more fit for agricultural purposes, has been largely affected by human practices and so most of its rich assemblages have probably been damaged. On the other hand the eastern sector, and in particular the area where some springs are still active, could reveal a much more favourable situation. The presence of preserved plots of land has been ascertained during the last field campaign, although the fortunate presence of sites in this area still needs to be verified by systematically digging stratigraphic trenches.

Data from this area constitute a good starting point to re-evaluate the role of lowlands for the settlement and subsistence of Early



**Fig. 5** - Stratigraphic section of one of the trenches opened in the western sector of the investigated area highlighting the ploughed layer cutting the lower LGM deposit (photo D. Visentin). / Sezione stratigrafica di uno dei saggi aperti nel settore occidentale dell'area indagata che mette in evidenza come il livello arativo tagli i sottostanti depositi dell'UMG (foto D. Visentin).

(Sauveterrian) and Late (Castelnovian) Mesolithic groups. These data also pose the question of the relationship, in terms of territorial organisation, with the best known and abundant record documented in the valleys and highlands of the Eastern sector of the Southern Alps and pre-Alps.

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