

MARCO PERESANI(\*) & CRISTIANO NICOSIA (\*\*, \*\*\*)

## COMPARATIVE STUDY OF TWO LATE PLEISTOCENE SEQUENCES WITH PALEOSOLS AND AEOLIAN DEPOSITS AT THE SOUTHERN ALPINE FORELAND

**ABSTRACT:** PERESANI M. & NICOSIA C., *Comparative study of two Late Pleistocene sequences with paleosols and aeolian deposits at the Southern Alpine foreland*. (IT ISSN 0391-9838, 2015).

Two pedostratigraphic sequences located between the Euganean and Berici hills (Veneto region, north-eastern Italy) were investigated. In such sequences, morphogenic and pedogenic processes could be ascribed to the Late Pleistocene climatic evolution, based on pedostratigraphic characteristics and on archaeological finds. The series prove the degradation of the vegetation cover along the local slopes, followed by the truncation of paleosols due to widespread hillwash phenomena. The latter result in the concentration of coarser elements along an erosional surface, with successive displacement due to gelifluction. This process indicates climatic change towards glacial conditions, with an open environment that is characterized also by loess sedimentation.

**KEYWORDS:** Paleosols, Loess, Late Pleistocene, Berici Hills, Euganean Hills, Northern Italy.

**RIASSUNTO:** PERESANI M. & NICOSIA C., *Studio comparativo di due sequenze del Pleistocene Superiore con paleosuoli e depositi eolici nell'avampaese delle Alpi meridionali*. (IT ISSN 0391-9838, 2015).

Due serie pedostratigrafiche sono state analizzate nell'area posta tra le pendici occidentali dei Colli Euganei ed i Colli Berici (Veneto). Le due sequenze documentano eventi morfogenetici e pedogenetici che, sulla base delle caratteristiche pedo-stratigrafiche e del contenuto archeologico, possono essere inquadrati nell'evoluzione climatica del Pleistocene Superiore. Le serie documentano la degradazione delle coperture

vegetazionali dei versanti, la conseguente troncatura dei paleosuoli per dilavamento diffuso ed accumulo di elementi grossolani sulla superficie di erosione, ulteriori processi di geliflusso che delineano una progressiva degradazione del clima in senso glaciale. Gli effetti di quest'ultima sulla riduzione della copertura vegetale si fanno sempre più evidenti fino a raggiungere le condizioni di ambiente aperto correlate anche alla deposizione del loess sui rilievi calcarei.

**TERMINI CHIAVE:** Paleosuoli, Loess, Pleistocene Superiore, Colli Berici, Colli Euganei, Italia settentrionale.

### INTRODUCTION

In the Po plain and in the bordering hill complexes, different archives provide data on Middle and Late Pleistocene climate evolution (Cremaschi, 1987; Amorosi & alii, 2004; Massari & alii, 2004; Fontana & alii, 2014; Ferraro, 2009; Ridente & alii, 2009; Scardia & alii, 2010; Ravazzi & alii, 2012), occasionally with millennial-scale resolution (Monegato & alii, 2007; Pini & alii, 2010). Notwithstanding an increasing amount of contexts studied between the Alpine fringe and the northern Adriatic Sea (Fontana 2006; Fontana & alii, 2008; Pini & alii, 2009; 2010), some areas remain marginally investigated. Among these, we can include the Euganean and Berici hills, two isolated hill complexes that emerge from the Quaternary alluvial sediments deposited by the Bacchiglione, Brenta, Adige and other minor rivers (Zangheri, 1988-89; Mozzi, 2005; Fontana & alii, 2008; Monegato & alii, 2011; Fontana & alii, 2014). Especially in the Euganean hills, the effects of Late Pleistocene climate variability on landforms and slope evolution are still poorly known. These are in fact generally inferred on the basis of supra-regional evidences (Piccoli & alii, 1981), gathered in areas that were not directly affected by glacial advance or by fluvial morphogenesis, such as the central-oriental Alpine fringe. Sedimentary and palaeopedological slope sequences can be of key importance for the definition of the

(\*) Università di Ferrara, Dipartimento di Studi Umanistici, Sezione di Scienze Preistoriche e Antropologiche, Corso Ercole I d'Este 32, I-44100 Ferrara (Italy); marco.peresani@unife.it

(\*\*) Université Libre de Bruxelles, Centre de Recherches en Archéologie et Patrimoine CP 175 - 50, avenue F.D. Roosevelt, B-1050 Bruxelles (Belgium); cristianonicosia@yahoo.it

(\*\*\*) Geoarchaeology & Soil Micromorphology Consultant, Via Cilento 10, I-36100 Vicenza (Italy)

The Soprintendenza per i Beni Archeologici del Veneto is thanked for authorizing the excavations at Monte Versa. The Rotary Club Abano Terme-Montegrotto provided support for this study. The authors are grateful to two anonymous reviewers for constructive suggestions and to E.B. Modrall for revision of the manuscript.