

The Holocene pollen record in the Villaviciosa Estuary (Asturias, North Spain)

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Abstract

New data are provided on the history of Holocene vegetation based on pollen records from a coastal sequence on the Cantabrian coast. A core with a continuous record corresponding to a complex sequence reflecting upward shallowing was studied, and two ¹⁴C dates of 6180 ± 40 (7030 cal.) yr BP and 2610 ± 70 (2775 cal.) yr BP were obtained. The pollen study highlights the development in the area of an oak forest with *Corylus*, the presence of an interesting thermophilous floral assemblage and alder forests that spread around 3000 years ago. The latter appears to be related to the availability of large areas of territory close to the Villaviciosa Estuary main channel and to a high phreatic zone. It is interpreted as a response to autocyclic sedimentary discontinuity (channel displacement) rather than as an episode of sea-level fall.

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1. Introduction

The north of the Iberian Peninsula is a relatively well-known territory with regard to Holocene vegetation history. The data, obtained mainly from peat bogs in mountain areas, has been subjected to many recent reviews (Peñalba, 1994; Ramil Rego et al., 1998a). The authors of these studies, however, highlight the scant information available from coastal and sub-coastal sites, which has frequently been extrapolated from non-coastal areas.

Most of the studies on coastal sediments and Late Glacial development of the vegetation on the Cantabrian coast are based on very incomplete outcrops.

Alonso and Pagés (2000) studied some stream deposits in Cabalar, dated to 2900 ± 70 (3050 cal.)¹ yr BP and a 1-m thick peat bog in Barreiros, dated to 4050 ± 70 (4607 cal.) yr BP, both close to the locality of Foz (Fig. 1). In San Vicente de la Barquera and Oyambre (Cantabria), peats occur with a maximum thickness of 3.5 m. They were subjected to pollen analysis and the basal levels dated at 5850 to 4770 yr BP by Mary et al. (1975) and Mary (1983, 1990). Subsequently, Alonso and Garzón (1995) and Garzón et al. (1996), dated the basal level of the Oyambre peat at 6120 yr BP. Cearreta et al. (1997) studied a peat bog in Noja (Cantabria) which was dated from 4070 to 3080 yr BP, and Altuna et al. (1993) and Cearreta et al. (1997) studied a beach-

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¹ If not saying the contrary, all dates stated in the text are uncalibrated radiocarbon years before present.

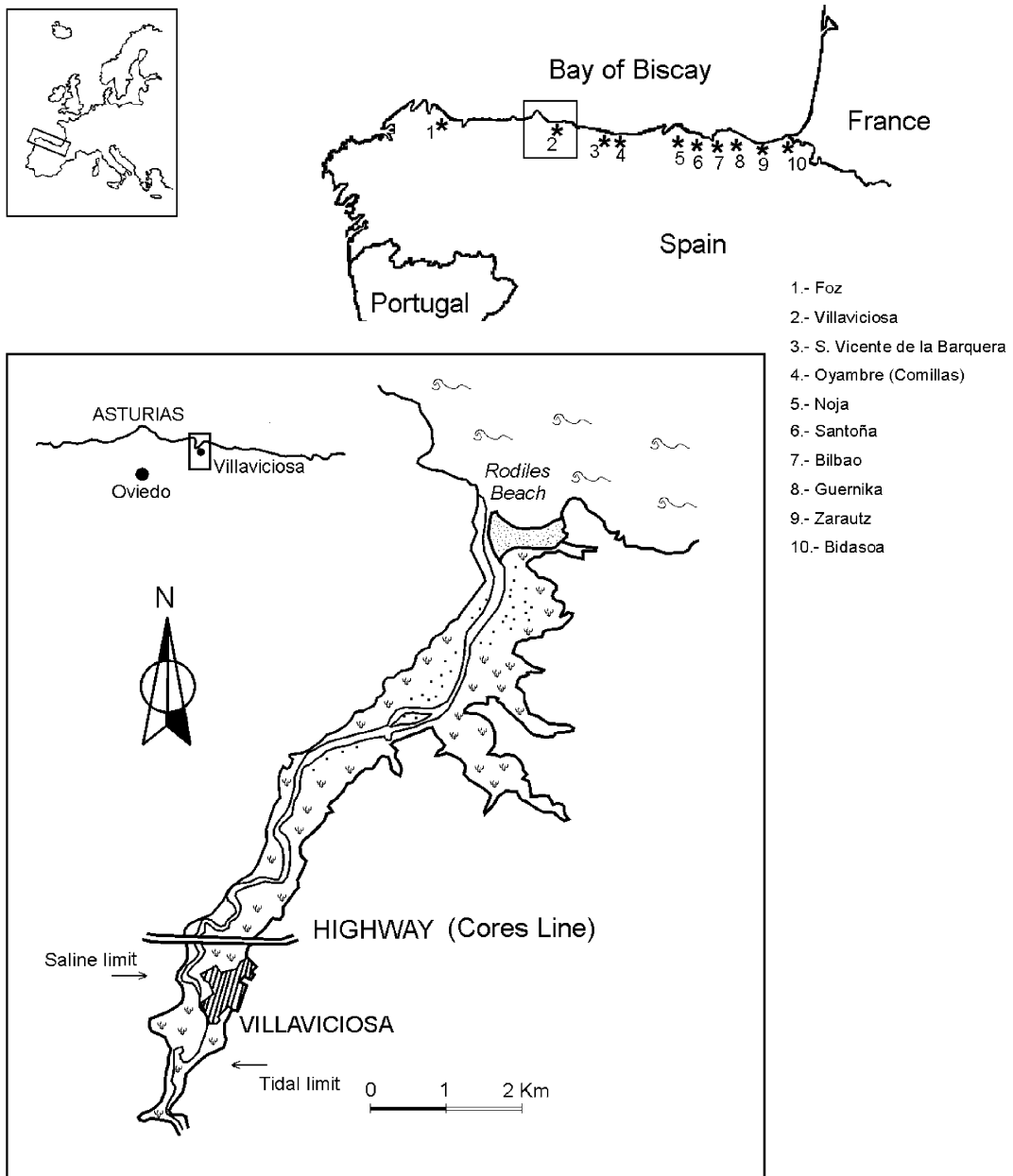


Fig. 1. Location of Villaviciosa Estuary in the northern coast of Spain (Asturias) and situation of cores.

dune complex and marsh sediments in Zarauz, dated at 5810 to 4920 yr BP. The Zarauz sediments were studied for pollen in both papers.

The most complete record of Holocene environments on the northern coast of the Iberian Peninsula can be found in sequences infilling the estuaries (Santoña, Bilbao, Gernika and Bidasoa), obtained by means of mechanical cores. Cearreta (1992, 1993, 1994, 1999), Cearreta and Murray (1996) and Cearreta et al. (1997) conducted a sediment and palaeoenvironmental

analysis of these cores, detecting the existence of two episodic increases in sea level during the Holocene, one dated around 8000 yr BP and the other around 3000 yr BP. Finally, Pascual et al. (1998) studied the upper part of the Gernika Estuary infilling, interpreting another transgressive impulse at 3500 uncal. yr BP. Sánchez Goñi (1996) undertook a pollen study in the Bidasoa Estuary and identified two transgressive–regressive cycles: one dating from 6000 BP to 4500 yr BP, and the second around 2700 yr BP.

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