

Bulletin of the Geological Society of Norfolk

No. 46 (1996)

Published 1998

CONTENTS

	Page
Editorial	1
West, R.G.	
A possible Late Pleistocene mass movement in fenland with an associated medieval settlement: Burystead Farm, Sutton, Cambridgeshire.	3
Fish, P.R., Carr, S.J., Rose, J., Hamblin, R.J.O., and Eissmann, L.	
A Periglacial composite-wedge cast from the Trimmingham area, north Norfolk, England.	11
Boomer, I.	
The relationship between meiofauna (ostracoda, foraminifera) and tidal levels in modern intertidal environments of north Norfolk: a tool for palaeoenvironmental reconstruction.	17
Funnell, B.M. and Boomer, I.	
Microbiofacies tidal-level and age deduction in Holocene saltmarsh deposits on the north Norfolk coast.	31

The Geological Society of Norfolk exists to promote the study and understanding of geology in East Anglia, and holds meetings throughout the year.



Click here, to order printed copy of the Bulletin.
Please, specify the issue or year required.

Back copies of the Bulletin cost £3.50 each (members); £10.00 each (non-members).

For membership details consult our web site <http://www.norfolkgeology.co.uk>

**A POSSIBLE LATE PLEISTOCENE MASS MOVEMENT IN FENLAND
WITH AN ASSOCIATED MEDIEVAL SETTLEMENT: BURYSTEAD FARM,
SUTTON, CAMBRIDGESHIRE**

R.G .West

Godwin Institute of Quaternary Research, Department of Plant Sciences,
University of Cambridge, Downing Street, Cambridge, CB2 3EA, UK.

ABSTRACT

A bulge on the slope forming the western edge of the Isle of Ely is interpreted as a result of a Late Devensian mass movement of Jurassic clays. It is associated with a long history of (human) medieval settlement, with a farmstead, chapel and moated site.



**A PERIGLACIAL COMPOSITE-WEDGE CAST
FROM THE TRIMINGHAM AREA,
NORTH NORFOLK, ENGLAND**

*P.R. Fish*¹, *S.J. Carr*², *J. Rose*², *R.J.O. Hamblin*³, and *L. Eissmann*⁴

¹ Earth and Environmental Science Research Unit,
University of Brighton, Mithras House, Lewes Road, Brighton, BN2 4AT, UK.

² Department of Geography, Royal Holloway,
University of London, Egham, Surrey, TW20 0EX, UK.

³ British Geological Survey,
Nicker Hill, Keyworth, Nottingham, NG12 5GG, UK.

⁴ Institute of Geophysics and Geology,
University of Leipzig, Talstrasse 35, D - 04103 Leipzig, Germany.

ABSTRACT

A periglacial composite-wedge cast is described from Trimingham, north Norfolk, in deposits of the Cromer Forest Bed Formation, beneath Anglian glaciogenic sediments. The form and composition is taken to indicate that the feature formed in a periglacial climate, by a process of thermal contraction, deposition of wind-blown sand and snow, and subsequent ground-ice melt. The observation indicates that not all wedges observed in these sediments are water-escape structures as proposed by Worsley, (1996) and confirms the existence of permafrost during the deposition of the Cromer Forest Bed Formation.

**THE RELATIONSHIP BETWEEN MEIOFAUNA (OSTRACODA, FORAMINIFERA)
AND TIDAL LEVELS IN MODERN INTERTIDAL ENVIRONMENTS OF
NORTH NORFOLK: A TOOL FOR
PALAEOENVIRONMENTAL RECONSTRUCTION.**

Ian Boomer

School of Environmental Sciences,
University of East Anglia, Norwich, NR4 7TJ, UK.

ABSTRACT

The relationship between the elevation of inter-tidal environments and floral and faunal distribution has been studied in a number of organisms. Two groups in particular (Ostracoda and Foraminifera) are particularly notable since they produce carapaces or tests which generally fossilise, thus providing an environmental record within the sediment. These two groups belong to the meiofauna (generally between 100 and 2000µm long) and as such are often recorded in high numbers from relatively small volumes of sediment. This makes them particularly useful for statistical analysis. As with other groups, species distributions are dependent upon elevation which reflects tidal inundation over the lunar cycle. By studying the relationship between ostracod and foraminiferal distribution on modern saltmarshes and intertidal flats it is possible to reconstruct past changes in sea-level by detailing the fossil assemblages in sedimentary cores. This paper outlines the faunal scheme used as part of a multidisciplinary study on the Holocene evolution of the north Norfolk coast.



MICROBIOFACIES TIDAL-LEVEL AND AGE DEDUCTION IN HOLOCENE SALTMARSH DEPOSITS ON THE NORTH NORFOLK COAST

B.M. Funnell and I. Boomer

School of Environmental Sciences,
University of East Anglia, Norwich NR4 7TJ, UK.

ABSTRACT

Saltmarshes develop in close relationship to tidal-levels. Along the North Norfolk Coast, judged mainly on the basis of range relative to Ordnance Datum (OD), uppermost saltmarshes appear to range between Highest Astronomical Tide levels (HAT) and a mean between HAT and Mean High Water Spring (MHWS) levels (HAT-MHWS); upper saltmarshes between the HAT-MHWS mean and a mean between MHWS and Mean High Water (MHW) levels (MHWS-MHW); and lower saltmarshes between the MHWS-MHW mean and MHW levels. Since HAT, MHWS, and MHW tidal-levels are systematically related to OD, and also to Mean Sea Level (MSL), in a vertical sense, present and past MSL levels can be deduced from the occurrence of different types of saltmarsh (defined by microfauna).

Post-glacial changes in MSL affecting both the North Sea and the North Norfolk Coast have been modelled by Lambeck, (1995), producing contour (isobase) maps relating to MSL along the North Norfolk Coast at 8000 and 7000 BP (years before 1950 AD). By comparison with the modelled history of sea-level rise in Fenland since 7000 BP the likely progress of MSL rise along the North Norfolk Coast since 7000 BP can be calculated.

Then, by: (a) deducing the tidal-level at which saltmarsh deposits in boreholes on the North Norfolk Coast were formed, and (b) using the Holocene time at which that tidal-level would have corresponded to the OD/MSL depth at which those deposits are now found, a provisional age relative to BP can be assigned.