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**THE NATURE AND ORIGIN OF THE STIFFKEY MEALS,  
NORTH NORFOLK COAST**

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**ABSTRACT**

*Along the coast of north Norfolk there are a number of approximately coast-parallel sand and gravel ridges (or Meals) most of which protect the saltmarshes behind them from direct tidal inundation. They are particularly well developed at Stiffkey but are also known at Morston and Thornham. At Stiffkey Marsh they mark the boundary between the modern upper and lower saltmarshes. As part of a recent investigation into the Holocene (last 10,000 years) history of this coastline, a brief examination of the sediments which constitute the Stiffkey Meals and their relationship to the saltmarsh is made. The Meals only extend to about a metre below the modern marsh surface, indicating that they were formed relatively recently. They are composed of distinct layers of gravel, pebbles and sand, sediments which are generally found in much higher energy (more seaward) settings today. Immediately seaward of the Meals, fine-grained saltmarsh muds and silts to a depth of at least 5 metres occur, with a thin (0.5 metre) sand and gravel layer at less than 1 metre depth. This thin layer, records the transport of coarse material across the previous saltmarsh surface during what was a relatively short lived 'barrier emplacement' event approximately 1000 years ago. The mechanism behind the emplacement of the Meals may have been related to climatic deterioration or to sudden changes in the rate of relative sea-level rise along this coast.*

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**'PRE-GLACIAL' QUATERNARY SEDIMENTS FROM TRIMINGHAM, NORTH  
NORFOLK, ENGLAND.**

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**ABSTRACT**

*Pre-glacial sands and gravels are described from coastal exposures at Trimingham, near Cromer, north Norfolk and divided on the basis of sedimentary structures, particle size distribution, clast lithological content, pollen analysis and palaeocurrent directions into six sedimentary facies. The deposits are interpreted as having formed in a shallow marine environment by tidal current flow, with significant fluctuations in water depth and changes of current direction. Indicator lithologies show sediment sources to the coastal system both from the ancestral river Thames and from an as yet uncharted 'Northern' river. Pollen preserved in fine grained organic sediments in the lower part of the section, and ice-wedge casts from the upper part of the section suggest that the environment changed from a temperate-climate coastal zone fringed with alder-carr backswamp, to a permafrost environment with thermal-contraction patterned-ground. The temperate deposits formed during the Cromerian Stage and the permafrost structures as part of the early Anglian Barham Soil.*

