

PRELIMINARY REPORT: RESEARCH PROJECT ON SMALL MAMMALS FROM U.K. LOWER PLEISTOCENE SEDIMENTS

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INTRODUCTION

In 1976, during a research fellowship at Utrecht University, I had the opportunity to examine the extensive collections from the Tegelen Clay. This stimulated an interest in the British material of roughly similar age from the Icenian (Norwich and Weybourne) Crag, shelly inshore marine sands outcropping in Norfolk and Suffolk.

This material included the type specimens of *Mimomys newtoni* and *Mimomys reidi* but was scattered in various collections, poorly figured, and hardly described.

Further material was being collected by research groups and private collectors, and much work was being done on the stratigraphy and vegetational history of the deposits.

In 1978 I therefore began a review of the small mammal remains (mainly voles) from the Lower Pleistocene deposits of East Anglia. In this work I enjoyed the collaboration of Dr. A.J. Stuart and Mr. P.G. Cambridge. Most available material has now been studied. Due to pressure of other work, this project has continued for several years. It is now possible to note several conclusions in summary form in advance of detailed publications which are in preparation.

The main conclusion of our study is that we have been able to recognise different microvertebrate faunas from different levels and localities in the U.K. Lower Pleistocene.

FAUNAS

A summary of the fauna from each locality is given in the table. At least two, and probably three, types of fauna can be recognised. The faunas differ not only in the species present, but also in the level of evolution of the taxa.

Some of the localities have been extensively studied in respect of other lines of research (lithostratigraphy, pollen, molluscs, foraminifera etc.). Bramerton is the type locality of the Bramertonian stage of the U.K. Lower Pleistocene (FUNNELL *et al.*, 1979), and Easton Bavents is the type locality of the Baventian stage of the U.K. Lower Pleistocene (FUNNELL & WEST, 1962).

At the present stage of study the stratigraphic conclusions are as follows:

- a) The fauna from Bramerton (Blake's Pit, Lower Shell Bed) represents the oldest assemblage from the Icenian Crag localities. Faunas from Thorpe/Norwich and Bulcamp are similar in composition.
- b) The faunas from Covehithe and Easton Bavents differ from the Bramerton assemblage and are probably later.
- c) The faunas from West Runton (crag underlying later, Cromerian, deposits), East Runton, and other Norfolk coastal deposits formerly called Weybourne Crag, and assigned by WEST (1980) to the Pre-Pastonian and Pastonian stages differ from the two previous groups and are later.

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This suggests a sequence of U.K. stages thus:

Pastonian	(temperate)
-- ? --	
Pre-Pastonian	(cold)
-- ? --	
Baventian	(cold)
-- ? --	
Bramertonian	(temperate)
-- ? --	
Antian	(temperate)

Comments:

- Up to now, the Bramertonian stage was placed *after* the Baventian.
- It is regarded as possible that the Baventian and Pre-Pastonian represent (different stadials of) the same cold stage (??Eburonian).
- The U.K. sequence is grossly incomplete compared with that of the Netherlands. Some additions, deletions and mutations can be expected as knowledge increases.

RELATION TO CONTINENTAL EUROPEAN FAUNAS

The faunas from the Netherlands Lower Pleistocene are currently under study. The following preliminary comments can be made:

- The micromammal faunas of the Lower Pleistocene crags (Bramertonian, Baventian, Pre-Pastonian) of the U.K. correspond to faunas from the Tiglian and possibly the Eburonian of the Netherlands.
- The Bramerton fauna corresponds to those from the earlier part of the Tiglian C.

The succession of faunas from the U.K. corresponds closely to that observed in Austria in material from superimposed loess sediments (RABEDER, 1981).

CONCLUSIONS

This study has contributed to our knowledge of several fossil taxa, and in addition, a biostratigraphic basis for the distinction of some Lower Pleistocene deposits has been established for the first time. The evolutionary changes (in crown height etc.) allow us to express this distinction in re-

lative age. The author is confident that it will be possible to correlate U.K. and Netherlands Lower Pleistocene deposits in more detail on this basis within the next few years.

FURTHER COLLECTION

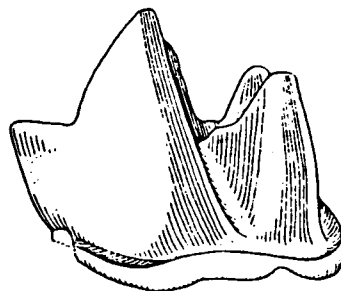
Since small mammals are potentially of great biostratigraphic interest, the author urges those involved in studying Pleistocene sediments to collect by sieving (to 1 mm.) all vertebrate material. Such remains appear to be regularly present in freshwater sediments provided these are not decalcified and not oxidised. Material from boreholes and localities where other lines of evidence are investigated (lithostratigraphy, vegetation, molluscs) is especially useful.

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LOCALITIES	FAUNA TYPE	<i>Mimomys pliocenicus</i>	<i>Mimomys rex</i>	<i>Mimomys neidi</i>	<i>Mimomys newtoni</i>	<i>Mimomys altenburgensis</i>	<i>Mimomys pitumyoides</i>	<i>Mimomys blanci</i>	<i>Mimomys sp.</i>	<i>Clethrionomys</i>	<i>Microtus</i>	<i>Muridae</i>	<i>Micromys</i>	<i>Soricidae</i>	<i>Desmana</i>
West Runton Crag	A	X		X	X		X	X							
East Runton	A	X		X	X		X	X							
Overstrand Sidestrand	A	X					X			X					
Trimingham	A			X											
Beccles		X													
Caistor by Norwich		X													
Ditchlingham Lode Bungay								X							
Weybourne		X		X				X	X			X		X	X
Holton		X													
Sizewell		X		X											
Thorpe Aldringham		X		X											
Wangford		X													
Yarn Hill		X													
Easton Bavents	B	X		X				X							
Covehithe	B	X		X	X		X				X				
Kyson		X													
Bramerton	C	X	X	X	X	X									
Thorpe/Norwich	C	X		X	X	X									
Bulcamp	C	X		X	X	X							X		X
Debenham Crag											X				

SAMENVATTING

In 1978 begon de auteur aan een review van de kleine zoogdieren uit het Onderpleistoceen van East Anglia. Hij komt tot een aantal biostratigrafische conclusies, op grond waarvan een gewijzigde stratigrafie wordt voorgesteld. Het Bramertonian wordt in deze opvatting *onder* het Baventian geplaatst. De auteur beschouwt de Bramerton-fauna als de oudste van de fauna's uit East Anglia en geeft verder aan dat de kleine-zoogdierfauna's van de Crag (Bramertonian, Baventian en Pre-Pastonian) overeenkomen met Tiglien- en mogelijk Eburonien-fauna's uit Nederland. De Bramerton-fauna correspondeert met die van het vroege Tiglien C.