

THESIS ABSTRACT

Sedimentological, palaeogeographical and stratigraphical aspects of the Middle Pleistocene geology of the Peterborough area, eastern England

Harry E. Langford

*Geography Dept, Anglia Polytechnic University
sagemO3644@talk21.com*

A sedimentological study of Middle Pleistocene deposits in the Peterborough area has been undertaken in order to determine their genesis, and to develop palaeogeographical and stratigraphical models. The deposits were divided into two categories on the basis of published descriptions - (1) Anglian chalk-rich diamictons, which locally may overlies deep sequences of lacustrine muds, sands, diamictic muds and matrix-supported diamictons, and (2) post-Anglian sand and gravel bodies forming fluvial terrace aggradations.

The Anglian sequences are interpreted to have been deposited subaqueously in a lake that at times may have covered the present-day area of the Fen Basin. Contrary to prevailing models of Anglian glaciation, there is no unequivocal evidence for glacial overriding of the Peterborough area from the northeast, and the timing and origin of the breaching of the Chalk escarpment at The Wash remains equivocal. Triassic-rich phases suggest that the easterly limit of ice advancing from a westerly direction during this stage was closer to Peterborough than prevailing models suggest, although it appears to have remained to the west of Peterborough.

Sequences in post-Anglian deposits suggest major Middle Pleistocene reorganization of fluvial networks in the Fen Basin. Southerly directed meltwater flow from a post-Anglian, but pre-Devensian, ice sheet to the north of the Fen Basin deposited a fluvial sequence to the north of Uffington and formed the Southorpe dry valley. Formation of an alluvial fan at the southern end of the dry valley impounded waters of the former River Nene to create a lake at Elton. The origin of some of the River Nene 3rd and 2nd terraces, and some of the incised bedrock meanders, can be explained by the presence of the lake at Elton and by flow through the Southorpe dry valley. Formation of the River Welland during this phase diverted flow from the Southorpe dry valley.

Stratigraphical interpretation of fluvial sequences at King's Dyke and Sutton Cross, based on age-estimates from the former, suggests that the major drainage reorganization occurred during Oxygen Isotope Stage 8.

