

# High Lodge: Excavations By G. De G. Sieveking, 1962-8 And J. Cook, 1988

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## Geology and geomorphology of the Palaeolithic site at High Lodge, Mildenhall, Suffolk, England

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**SUMMARY:** The geology of the High Lodge site at Mildenhall is described and re-interpreted as a sequence of deposits related to a doline formed in the underlying Chalk. Doline development in the area is considered in detail. Lacustrine sediments filling the depression contain a Palaeolithic industry and pollen assemblages that indicate contemporaneous coniferous woodland. The High Lodge sequence, at the northern end of the Warren Hill ridge, is related to the Three Hills site at the southern end of the ridge and to recent exposures near the Beech Clump, midway on the ridge. The geology of the three sites combines to demonstrate a series of ice-marginal proglacial successions along the west and south side of the Warren Hill ridge, marking a glacial limit. This Skerchly Line limit, on the eastern flank of the Fenland, results from the Tottenhill ice advance into Fenland late in the Wolstonian Stage (c. 160ka, during Marine Isotope Stage [MIS] 6). Structural evidence indicates that the doline filling was initially thrust glaciotectionally by the glacial ice. These sediments were subsequently disturbed by diapirism arising from loading by meltwater deposits and possibly by periglacial processes. The doline strata predate the ice advance and represent a period of cool temperate vegetation, probably of interstadial character, earlier in the Wolstonian, during MIS 7. The High Lodge Palaeolithic industry is associated with this cool temperate period, not with pre-Anglian times as formerly proposed. At Three Hills, artefacts occur within the proglacial deposits and are reworked from an earlier period. The geomorphology of the Warren Hill ridge is described and an interpretation of the ice front presented. The relation of the area to the wider Fenland landscape development is discussed.

A recent series of articles (Gibbard *et al.* 2009, 2012a,b) has described evidence for late Mid-Pleistocene glaciation in the Fenland Basin of East Anglia, England (Fig. 1). Investigation of the setting, morphology and internal architecture of a line of hills at the south to eastern Fenland margin has demonstrated that they represent glacio-marginal successions. The accumulations mark a distinct glacial maximum limit, the Skerchly Line, coinciding with the chalk-rich gravel deposits in Figure 1, and were formed where an ice lobe, flowing from the north or NW, terminated at the basin margin. In so doing, it dammed a series of streams draining into the Fenland to form proglacial lakes in contact with the ice front, including Lake Paterson. Meltwater discharges from portals in the ice margin formed a series of ice-marginal deltas and terminoglacial fans along this margin. The Warren Hill ridge (Fig. 2) is at the southern end of this series of marginal deposits.

The associated glaciation, the Tottenhill advance, has been shown to be of late Wolstonian age (i.e. late Saalian, broadly early Marine Isotope Stage (MIS) 6). This age is indicated by multiple lines of evidence including numerical dating, i.e. intermediate between the Hoxnian (Holsteinian, c. MIS 11c; cf. Ashton *et al.* 2008) and Ipswichian (Eemian, c. MIS 5e) interglacial stages (Gibbard *et al.* 1991, 1992, 2009, 2012a; Lewis & Rose 1991; Clark *et al.* 2004; Gibbard & Clark 2011). The deposits are included in the Feltwell Formation (Gibbard *et al.* 2012a).

The Warren Hill ridge is a north to south-orientated ridge east of Mildenhall, c. 2 km long and defined by the 30 m O.D. contour (Fig. 2). The ridge rises to c. 34 m O.D. and is asymmetrical in an east-west direction, having a markedly steeper western slope (cf. below), while the gentler eastern slope

includes a broadly fan-like form that extends towards the east and SE. There are three significant sites along the ridge, the High Lodge site at the northern end, the Beech Clump Pit midway and Three Hills at the southern end of the ridge.

Recently, various authors (e.g. Rose 1992; Lewis 1998) have offered an alternative interpretation of sites along the Skerchly Line while exploring the Quaternary of eastern England for traces of pre-glacial (i.e. pre-Anglian, pre-c. 0.5Ma BP) river courses and potential human occupation. This has introduced conflicting conclusions regarding the origin and age of several sites along the Skerchly Line, in particular those at High Lodge and Three Hills. These sites have yielded important assemblages of Palaeolithic artefacts and have attracted the attention of archaeologists for over 150 years (Appendix 1).

The present contribution offers a re-interpretation of the geology of the High Lodge site, relates it to the Three Hills and Beech Clump sites, and gives a wider view of the Warren Hill ridge in relation to the Tottenhill ice advance. It also discusses and summarizes the relation of the archaeology to the geology.

### 1. HIGH LODGE, MILDENHALL

At the northern end, on the western flank, of the Warren Hill ridge (Fig. 2) is the important Palaeolithic site at High Lodge (National Grid Reference TL 739 754). The site has a long history of excavation, described by Ashton (1992) in the account of the most recent excavations of 1962-1968 and 1988 (Ashton *et al.* 1992). The results of earlier excavations led to much discussion on the relation of the archaeology to the geology, with no certainty resulting; the 1988 excavations aimed to resolve matters.

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