

Geology of the Andover area: Exposed strata - Palaeogene

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The Palaeogene succession preserved within the north-eastern corner of the district represents part of the south-westernmost margin of the London Basin. Representatives of the Lambeth and Thames groups are present within the narrow steeply northward-dipping zone (the northern limb) of the Kingsclere Anticline and as shallow northerly dipping strata beneath Highclere, Burghclere and Echchinswell. These deposits are more fully described for the Newbury district to the north (**Aldiss et al.**, 2006^[1], 2010^[2]).

Lambeth Group

The Lambeth Group rests unconformably on the eroded surface of the Chalk in the north-eastern part of the Andover district, and is 25 to 30 m thick.

The Lambeth Group corresponds to the strata formerly described as the Woolwich and Reading Beds. In general, the Lambeth Group consists of two units, the Upnor and Reading formations (**Ellison et al.**, 1994)^[3]. Within the Andover district, these two formations are not divisible in the field as only a very thin Upnor Formation is present. They are shown together as an undifferentiated Lambeth Group.

The basement bed of the Lambeth Group (equivalent to the Upnor Formation) comprises reddish brown sand or interbedded sand and clay with abundant rounded to well-rounded, stained flint pebbles with locally glauconitic, shelly, sandy clays and sands, analogous to the 'Bottom Bed' of the London Basin. This basal bed is usually less than 1 m thick, at maximum up to 2 m in places and represents an early Palaeogene short-lived marine transgression.

The remainder of the formation consists of mottled, bright red and grey clay and silty clay, but also in shades of purple, brown and orange. The complex mottling has been ascribed to pedogenic processes with multiple overprinting of palaeosols (**Buurman**, 1980)^[4]. Lenticular bodies of well-sorted, fine- to medium-grained sand occur locally at various levels, particularly at the top and base. The Reading Formation represents deposition in a predominantly nonmarine, deltaic and fluvial environment.

Thames Group

London Clay Formation (LC)

The formation is up to 100 m thick and occurs in the north-eastern part of the district.

The London Clay Formation is the youngest bedrock unit within the Andover district. The formation consists mainly of grey, pyritic, bioturbated, silty and fine-grained sandy clay with interbedded

seams of calcareous cementstone and rounded flint pebble beds; a glauconitic sandy bed occurs at the base and channel sands, of variable thickness, cut down into grey silty clays at the top of the succession. The formation represents a return to fully marine deposition with each cycle (**King, 1981**)^[5] commencing with a transgressive flint pebble bed and glauconitic sands passing up into silty clays and clays representing the high sea level and later channel sand representing a regressive phase.

References

1. [↑](#) Aldiss, D T, Newell, A J, Smith, N J P, and Woods, M A. 2006. Geology of the Newbury district — a brief explanation of the geological map. *Sheet Explanation of the British Geological Survey*. Sheet 267 (England and Wales).'
2. [↑](#) Aldiss, D T, Newell, A J, Marks, R J, Hopson, P M, Farrant, A R, Royse, K R, Aspden, J A, Evans, D J, Smith, N J P, Woods, M A, and Wilkinson, I P. 2010. Geology of the Newbury district and part of the Abingdon district. *Sheet description of the British Geological Survey*. Sheet 267 and part of Sheet 253 (England and Wales).
3. [↑](#) Ellison, R A, Knox, R W O'B, Jolley, D W, and King, C. 1994. A revision of the lithostratigraphical classification of the early Palaeogene strata of the London Basin and East Anglia. *Proceedings of the Geologists' Association*, Vol. 105, 187-197.
4. [↑](#) Buurman, P. 1980. Palaeosols in the Reading Beds (Palaeocene) of Alum Bay, Isle of Wight, UK. *Sedimentology*, Vol. 27, 593-606.
5. [↑](#) King, C. 1981. The stratigraphy of the London Clay and associated deposits. Tertiary Research Special Paper, No. 6, 1-158.

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