

GLA 48: Thames Foreshore, Isleworth, Potential RIGS

London Borough of Hounslow, TQ 168 760

Ownership: Port of London Authority. Open access but a low spring tide recommended.

Exposures of London Clay on the foreshore

There are a number of sites in the upper tidal reaches of the Thames where the river gravels have been eroded away to expose small patches of London Clay at low tide. Such patches have been recorded at Hammersmith (TQ 299 780) and Kew Railway Bridge (TQ 194 775) as well as at Isleworth. By their nature these are not always visible and the exact positions of the exposures can vary. In 2010 Isleworth was the best site but sudden deposition or erosion during storms sometimes alters the exposures. A low spring tide will usually reveal the clay on erosional outer banks of Thames meanders where its position is often marked by septarian nodules (hard concretions within the clay) both *in situ* and as broken fragments.

The London Clay at Isleworth comprises stiff blue-grey clay, mostly weathered orange, associated with a line of these large septarian nodules. The exposures are located just above low water mark, from the beach below the steps to the riverbank below the Pavilion in Syon Park. London Clay fossils can be found loose, weathered out on the clay surfaces, sometimes associated with small drifts of pyrite that have accumulated in hollows, randomly distributed. Pictures and a description can be found in GA Guide 68, pp. 152-3.

London Clay

The London Clay was laid down over 50 million years ago when Southeast England was covered by a warm tropical sea. Seasonal rain caused wide rivers to discharge large amounts of clay into the sea from a coastline probably now in the Midlands. Along with the clay a number of terrestrial plants, mostly wood, fruit and seeds, and rare terrestrial animal remains were washed into the sea, often preserved as pyrite. From the fossilised plant remains (particularly Nipa palms and mangroves), a tropical climate is envisaged, similar to Malaysia and Indonesia today, but there are differences as many of the plants, such as magnolia, are considered to be temperate species. Today the best exposures of London Clay in southeast England are on the Isle of Sheppey and many of the fossils now in collections were found there. All the former quarries working London Clay in the London area have since been backfilled. Five coarsening-up sequences have been recognised, formed as the London Basin repeatedly filled up. These are described in detail by King² with a revised summary in the BGS Special Memoir (see Fig. 27).

London Clay fossils

The most abundant fossils at Isleworth are small tube worms, *Ditrupe plana*, easily picked out by their pale-pink preservation, which are a good indicator of where to look for other fossils. Molluscs may be relatively well preserved, sometimes retaining their original shell, and with pyrite infill which is a bright gold colour when fresh, quickly weathering to black on exposure. The pyrite tends to accumulate in black drifts in hollows and, with careful scrutiny, fossil snails and bivalves can be picked out among the more common small black nodules. Details of the fauna found at Isleworth are written up in the publication by Rundle detailed below². By comparing the fossils found within the clay Rundle and Cooper³ placed the exposure within Wrigley's Division⁴ which equates to Divisions C2 to D1 of King.

References:

- ¹ King, C. 1981. The Stratigraphy of the London Clay and Associated Deposits. (*Tertiary Research Special Paper No. 6*). Backhuys (Rotterdam), Text-fig.8.
- ² Rundle, A.J. 1970. Report of Project Meeting to Isleworth, Middlesex, April 11th 1970. *Tertiary Times* **1**, pp. 28-31. (Reprinted in *Tertiary Research*, **22** pp. 18-19 in 2004)
- ³ Rundle, A.J. & Cooper, J. 1970. Some Recent Temporary Exposures of London Clay in the London Area. *The London Naturalist* **49**, pp. 120-121.
- ⁴ Wrigley, A G, 1924. Faunal Divisions of the London Clay. *Proceedings of the Geologists' Association*, **35**, pp. 245-259.

London Clay exposures on the foreshore near Syon House, Isleworth

Source: London's foundations, page 216 (Diana Clements)



Site Map

Source: London's foundations, page 214

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