

COUNTY: SURREY                      SITE NAME: SMOKEJACK CLAY PIT

DISTRICT: WAVERLEY & MOLE VALLEY

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife, and Countryside Act 1981.

Local Planning Authority: WAVERLEY BOROUGH COUNCIL, Mole Valley District Council

National Grid Ref: TQ 111372                      Area: 76.32 (ha.) 188.51 (ac.)

Ordnance Survey Sheet 1:50,000: 187                      1:10,000: TQ 13 NW

Date notified (Under 1981 Act): 1992

Other Information:

This is a new site and is to be included in 'A Geological Conservation Review'.

Reasons for Notification:

The site consists of a pit in the lower Weald Clay Group, probably near the Hauterivian-Barremian boundary. Important for depositional environments and faunas, its dark to light grey and brown clays with siderite concretions have yielded insects, ostracods, molluscs, fish, articulated and disarticulated bones of reptiles, and numerous gastroliths.

The insects occur in siltstone concretions, the fossils not occurring as common debris as is often the case but in a fine-grained matrix with fine detail preserved. Some six orders have so far been recorded.

The reptilian remains consist of crocodile teeth, coprolites and a partial skeleton of *Iguanodon*. The unique fish-eating theropod dinosaur, *Baronyx walkeri*, was discovered at this site. It is the best Weald Clay reptile site currently available.

The overlying Alford Sand Member (BGS Bed 5c) comprises lenticular-bedded silty clay and silt, possibly the resins of a brackish tidal lagoon, passing up into a bioturbated sandstone with *Ophiomorpha* which is probably an old brackish lagoon lower shoreface. The sand is predominantly from Cornubia (high K -- feldspar, tourmaline and tourmaline fine aggregates; low microcline, garnet and staurite < kyanite).

While the sand's origin is similar to those of the preceding members (e.g. at Billingshurst), the depositional environments are entirely different.