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# Burnham-on-Crouch, Essex

[TQ 290 968]–[TQ 922 966]

## Introduction

London Clay Formation, division D, sediments are exposed in tidal river cliffs, on the northern bank of the River Crouch (Cappetta and Ward, 1977; Hooker *et al.*, 1980), known locally as 'The Cliffs'. On the foreshore, cementstone nodules are found weathering out of the lower sections of the cliffs. They generally are unfossiliferous, but occasional specimens are found (Dineley and Metcalf; 1999). Fossils also are found on the foreshore by prospecting (Kirby, 1974), or by bulk sampling the beach concentrates.

## Description

The river cliffs expose a section 2–3 m thick. On the north side of the river cementstone nodules are commonly seen scattered over the foreshore (Lake *et al.*, 1986). The sediments seen in 'The Cliffs' are thought to occur around the middle of division D of the London Clay Formation (King, 1981, p. 43).

## Fauna

Galliformes

Phasianidae

*Coturnipes cooperi* Harrison and Walker, 1977a

Cuculiformes

Parvicuculidae

*Parvicuculus minor* Harrison and Walker, 1977a

Musophagidae

*Promusophaga* sp.

The avifauna from Burnham-on-Crouch is limited to three taxa, but two of these were made the types of new species: *Coturnipes cooperi* Harrison and Walker, 1977a, and *Parvicuculus minor* Harrison and Walker, 1977a. *Coturnipes cooperi* is represented by the distal end of a left tarsometatarsus ((Figure 4.11)a,b) and *P. minor* is described from a left tarsometatarsus that lacks the trochlea for the second digit (Harrison and Walker, 1977a; Harrison, 1982c, 1983; (Figure 4.11)c,d).

## Interpretation

The London Clay Formation sediments at Burnham-on-Crouch are typical marine muds, deposited in a shallow offshore setting and dominated by marine fossils. Evidence from sedimentology and palaeontology suggests that the sediments were deposited within close proximity of a landmass supporting a paratropical-like rainforest (Collinson, 1983a; Dineley and Metcalf, 1999).

The galliform *Coturnipes cooperi* Harrison and Walker, 1977a, has a tarsometatarsus that is only very slightly larger than that of the common quail *Coturnix coturnix*, and it may have looked somewhat like the modern form. Note, however, that Dyke and Gulas (2002) are not convinced that *Coturnipes* is even a galliform, let alone a member of the pheasant family,

since it lacks diagnostic characters of the family and of the order.

The cuculiform *Parvicuculus minor* Harrison and Walker, 1977a, was a very small cuckoo, as small as modern species of *Chrysococcyx*. The fossil form has a relatively weakly developed outer flange of the trochlea for the fourth digit, when compared with most modern Cuculidae (cuckoos), and in this regard it is more like the modern hoatzin *Opisthocomus hoazin* (Harrison and Walker, 1977a, p. 44; Harrison, 1982c). However, note that Olson (1985, p. 110) suggested that both *Parvicuculus minor* Harrison and Walker, 1977a, and *Promusophaga* sp. were misidentified by Harrison and Walker (1977a) and that they belong to different bird orders. Unwin (1993), on the other hand, retained *P. minor* as a valid cuckoo record.

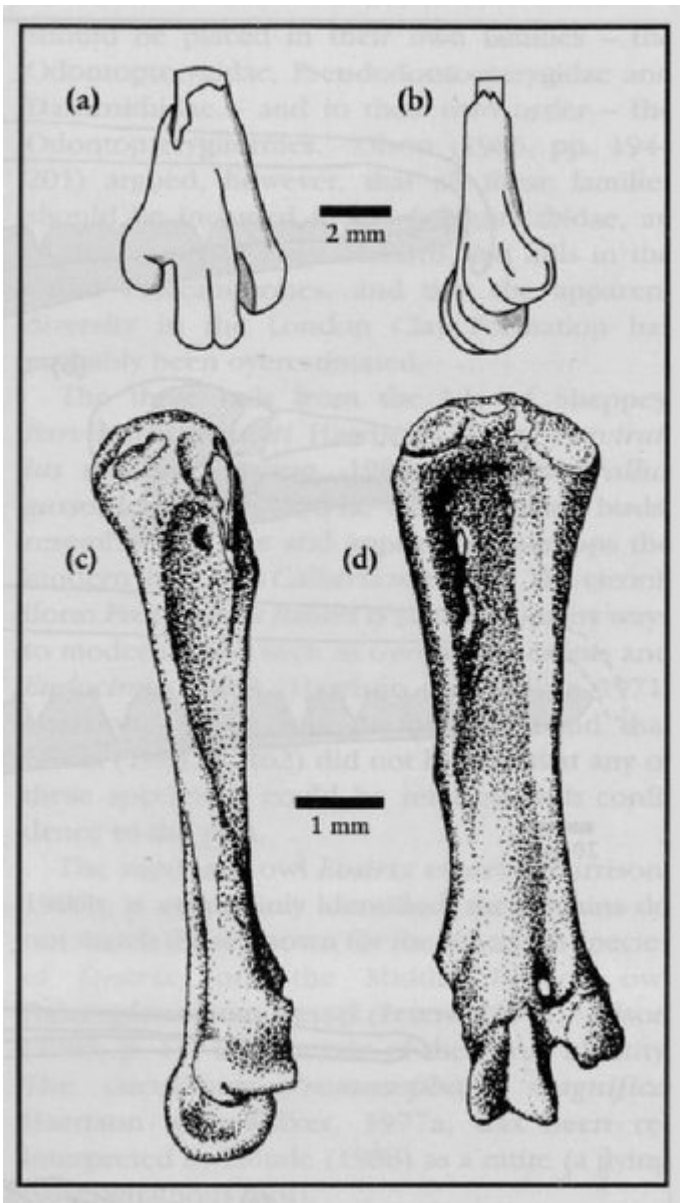
### **Comparison with other localities**

The sequence exposed at Burnham-on-Crouch is of a similar age to the sections on the Isle of Sheppey. There is a similarity between the vertebrate faunas from these sites. Both sites have produced bird remains, although the diversity of taxa known from the Isle of Sheppey is far greater than that of Burnham-on-Crouch. To date there is no overlap in the genera and species present at the two sites, although the families represented at Burnham-on-Crouch are also seen on the Isle of Sheppey.

### **Conclusions**

The London Clay Formation exposed in the small river cliff and foreshore areas of the River Crouch have produced a wide range of fossils. These include various fishes and birds. The three bird specimens are important, however, because two are the type specimens of species. The nature of the sedimentary section at this locality will make future investigation at this site a productive enterprise. Future collection could take the form of either hand picking from, or bulk sampling of, the beach concentrates.

### **[References](#)**



(Figure 4.11) Bird fossils from the London Clay Formation of Burnham-on-Crouch. (a,b) Distal end of left tarsometatarsus of the quail *Coturnipes cooperi* in anterior (a) and external (b) views. (c,d) Left tar-sometatarsus of the cuckoo *Parvicuculus minor* in medial (c) and anterior (d) views. (After Harrison and Walker, 1977a; and Harrison, 1982c.)