# REEDS FARM PIT

*OS Grid Reference: ST213003*

## Introduction

Reeds Farm Pit is about 600 m north-east of **Wilmington Quarry**, (Figure 3.25; see GCR site report, this volume), and has also been referred to as 'Hutchin's Pit' (e.g.Kennedy, 1970, p. 661) after a previous owner, 'the pit in a field near the lane to Haynes Farm' (Jukes-Browne, 1898), and the 'Waterworks Pit' (being opposite a pumping station). The decalcified Wilmington Sand was worked for building sand, as at the Wilmington Quarry. Reeds Farm Pit provided a complete section through the Wilmington Sand, a condensed representative of the Little Beach Member of the overlying Beer Head Limestone Formation, and the basal beds (Turonian Age) of the Holywell Nodular Chalk Formation. The pit lies closer to the Wilmington Fault than the Wilmington Quarry and the succession is consequently more condensed (Figure3.28).

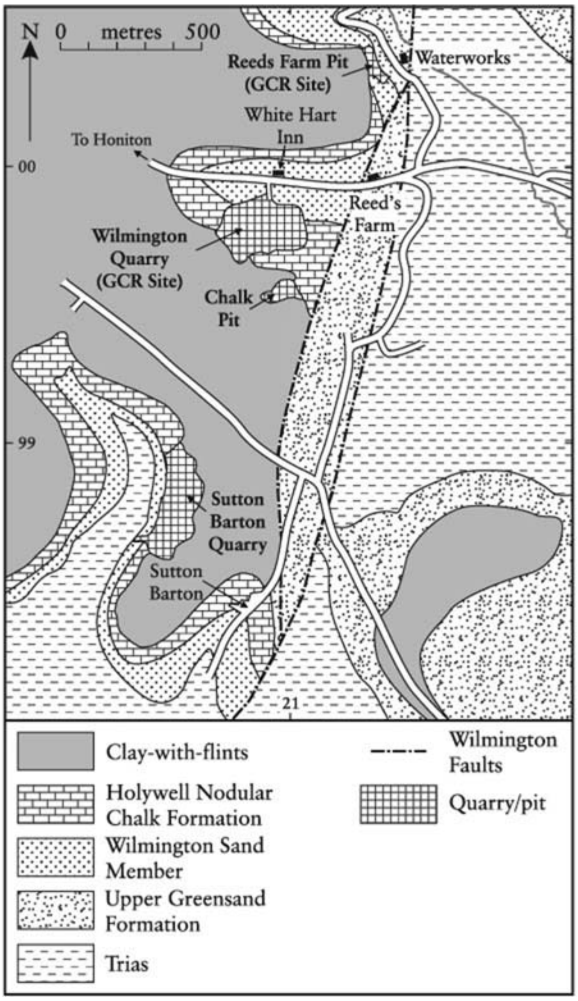


*Figure 3.25: Geological setting of Wilmington Quarry, Reeds Farm Pit and adjacent sections, south-east Devon.*

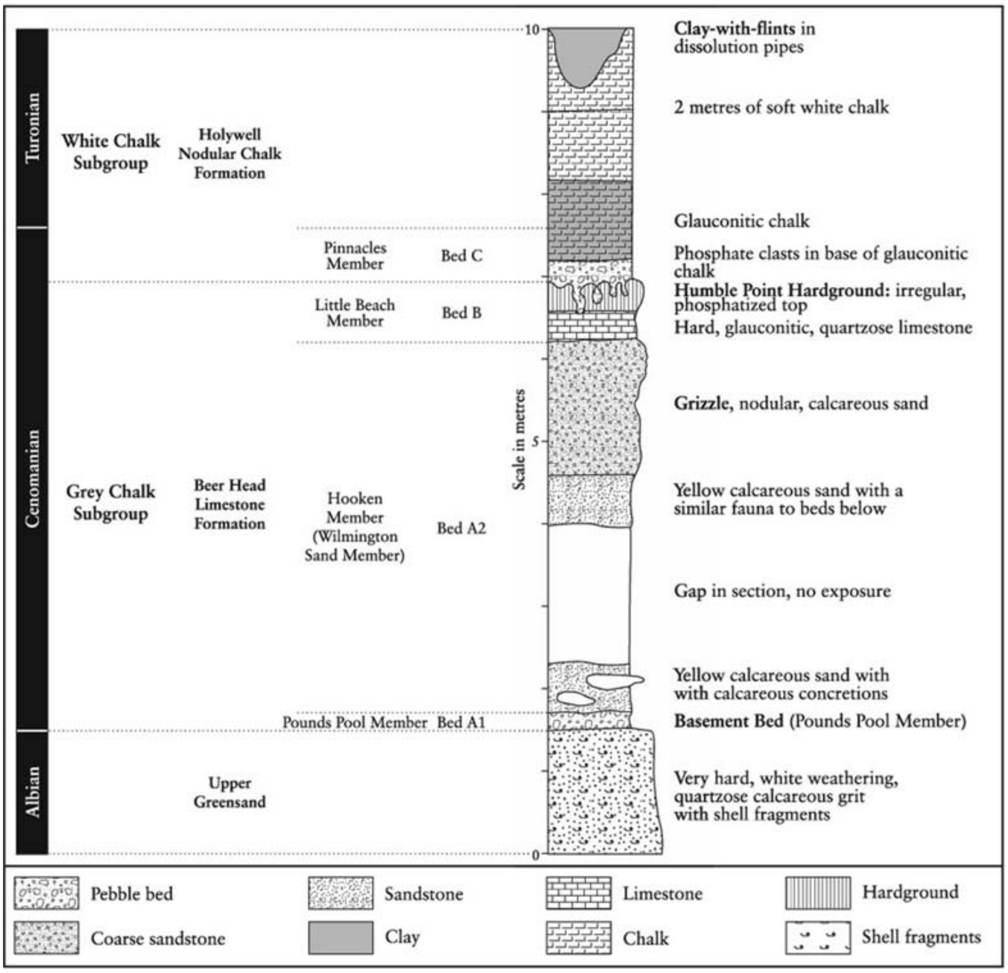


*Figure 3.28: The former section at Reeds Farm Pit, Wilmington, south-east Devon (also known as 'Hutchins Pit' or 'Haynes Lane Pit').*

## Description

The earliest description of the section is that of Jukes-Browne (1898), which was repeated and expanded by Jukes-Browne and Hill (1903). The pit was at that time in work (Figure 3.29). Its small size suggests that it is more recent than the extensive Wilmington Quarry section, and that it was probably opened some time after Fitton's visit to the latter workings. The section was partially overgrown when examined by Kennedy (1970), who was able to collect enough fossils from the Cenomanian Limestone and the basal Turonian Chalk to confirm Jukes-Browne's correlations with the succession at **Wilmington Quarry**. In particular, he collected ammonites and other fossils from the richly fossiliferous Basement Bed of the Wilmington Sand, which has not been well exposed subsequently. Re-examination of the ammonites from this bed enabled Kennedy (1971) and Wright *et al*. (1984) to apply the modern ammonite zonal scheme for the Cenomanian Stage to the succession and to correlate it with successions on the Devon coast and, farther to the east, in Grey Chalk Subgroup facies. Hart (1983) noted that the section was in such a poor state that further collecting was unlikely to add anything to earlier micropalaeontological studies (Carter and Hart, 1977a, fig. 41).

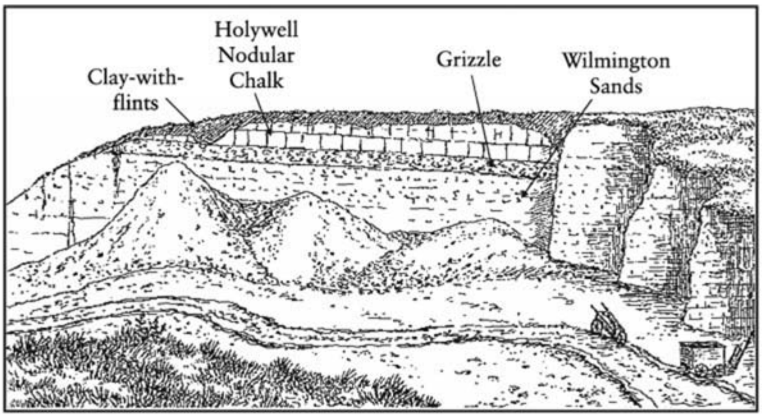


*Figure 3.29: Sketch of Reeds Farm Pit, Wilmington, south-east Devon. (From Jukes-Browne and Hill 1903, fig. 31, p. 127.)*

## *Lithostratigraphy*

Jukes-Browne (1898) recorded 5 ft 9 in (1.75 m) of Middle Chalk (i.e. Holywell Nodular Chalk Formation) resting on 2 ft (0.6 m) of Cenomanian Limestone and 6 ft (1.83 m) of nodular calcareous sandstone (the 'Grizzle' at the top of the Wilmington Sand; Figure3.29), faulted against 18 ft (5.5 m) of sand with siliceous concretions. Smith (1957b, p. 152) recorded a richly fossiliferous bed at the base of the Wilmington Sand. The succession summarized in Figure 3.28 and below is a composite based on the authors cited above.

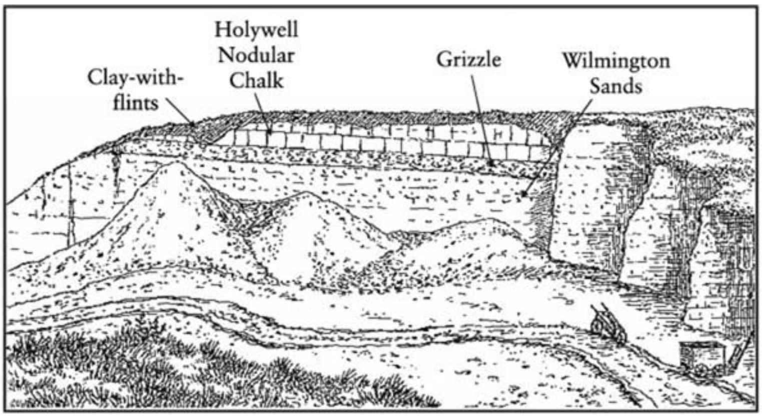


*Figure 3.29: Sketch of Reeds Farm Pit, Wilmington, south-east Devon. (From Jukes-Browne and Hill 1903, fig. 31, p. 127.)*

## *Biostratigraphy*

The Basement Bed of the Wilmington Sand at Reeds Farm Pit has yielded superbly preserved three-dimensional moulds of ammonites belonging to the *Neostlingoceras carcitanense* Subzone of the *Mantelliceras mantelli* Zone. Many of the better specimens were figured by Wright and Kennedy (1984). The following list has been updated from Kennedy (1970, 1971) and Wright and Kennedy (1984): *Algerites ellipticum* (Mantell), *A. sayni* Pervinquière, *Anisoceras* sp., *Baskaniceras deshayesitoides* Wright and Kennedy, *B. smithi* Wright and Kennedy, *Forbesiceras beaumontianum* (d'Orbigny), *F. lagilliertianum* (d'Orbigny), *Hyphoplites campichei* Spath, *H. curvatus curvatus* (Mantell), *H. curvatus arausionensis* (Hébert and Munier-Chalmas), *H. curvatus pseudofalcatus* (Semenov), *Hypoturrilites betraitaensis* Collignon, *H. mantelli* (Sharpe), *H. collignoni* Wright and Kennedy, *Idiohamites alternatus* (Mantell), *Mariella quadrituberculata* (Bayle), *M. torquatus* Wright and Kennedy, *M. dorsetensis* Spath, *Neostlingoceras carcitanense* (Matheron), *N. oberlini* (Dubourdieu), *Mantelliceras couloni* (d'Orbigny), *M. lymense* (Mantell), *M. saxbii* (Sharpe), *Schloenbachia varians*, *Sciponoceras roto* Cieslinski and *Stoliczkaia* (*Lamnayella*) *juigneti* Wright and Kennedy. Of these, this pit provided the holotype and/or paratype of four new species: *Baskaniceras smithi*, *Hypoturrilites collignoni*, *Mariella torquatus* and *Stoliczkaia* (*Lamnayella*) *juigneti* (Wright and

Kennedy, 1984). The Basement Bed also yielded the holotype of the crab *Glaessneria kennedyi* Wright and Collins.

The Basement Bed contains the coralline sponge *Acanthochaetetes ramulosus* (Michelin). It is also characterized by a profusion of trigoniid bivalves, notably *Linotrigonia* (*Oistotrigonia*) *vicaryana* (Lycett) and *Pterotrigonia crenulifera,* together with rarer *Rutitrigonia* spp., including *R. affinis* (J. Sowerby), *R. dunscombensis* (Lycett) and *Apiotrigonia sulcataria* (Lamarck).

Kennedy (1970) recorded *Inoceramus conicus* Guéranger (i.e. *I. virgatus* Schlüter), *Holaster altus* (*bischoffi* Renevier), *H. laevis* (*nodulosus* (Goldfuss)) and the large spinose pectinacean bivalve *Merklinia aspera* (Lamarck) (*Chlamys aspera*) from the basal 0.6 m of yellow calcareous sands and calcareous nodules overlying the Basement Bed. The bulk of the Wilmington Sand, including the 'Grizzle', has yielded a similar faunal assemblage to that at the **Wilmington Quarry**, with *Inoceramus conicus* being described (Kennedy, 1970) as 'common'. As at that locality, the most prolific and better preserved specimens occur in the more cemented patches within the 'Grizzle'. Wright and Kennedy (1984) reported rare *Austiniceras* from the lower part of the Wilmington Sand and noted that the 'Grizzle' contained a *dixoni* Zone ammonite fauna.

The Little Beach Member (Bed B) has yielded (Kennedy, 1970) ammonites (*Protacanthoceras* sp., *Schloenbachia* sp.), echinoids (*Conulus castanea* (Brongniart) and common *Holaster subglobosus* (Leske)) and crustacean fragments. Phosphatized fossils from the base of the overlying glauconitic chalk of the Pinnacles Member (Bed C) at the base of the Holywell Nodular Chalk include ammonites (*Eucalycoceras* cf. *pentagonum* (Jukes-Browne), *Euomphaloceras* cf. *euomphalum* (Sharpe), *Protacanthoceras* spp., *Scaphites equalis* J. Sowerby, *Schloenbachia* sp.) derived from the *Calycoceras* (*Proeucalycoceras*) *guerangeri* Zone. The glauconitic chalk itself contained a foraminiferal fauna indicative of the Plenus Marl Member of the basinal sections (Carter and Hart, 1977a, fig. 41).

## Interpretation

The Reeds Farm Pit succession can be closely correlated with that at the nearby **Wilmington Quarry** (see GCR site report, this volume). The Wilmington Sand, including the 'Basement Bed' and the 'Grizzle', and the Cenomanian Limestone can be matched in faunal and lithological detail at both localities. The Basement Bed at Reeds Farm Pit is much more fossiliferous and the pit has yielded far fewer specimens from the Little Beach and Pinnacles members. Differences in overall thickness between the two sections probably reflect their distances from the Wilmington Fault, the thinner Reeds Farm Pit succession being closer to the fault. The structural relationships between this and the other extant and former Wilmington quarries and pits and the 'Hooken–Wilmington trough' (Figure 3.21) is discussed above.

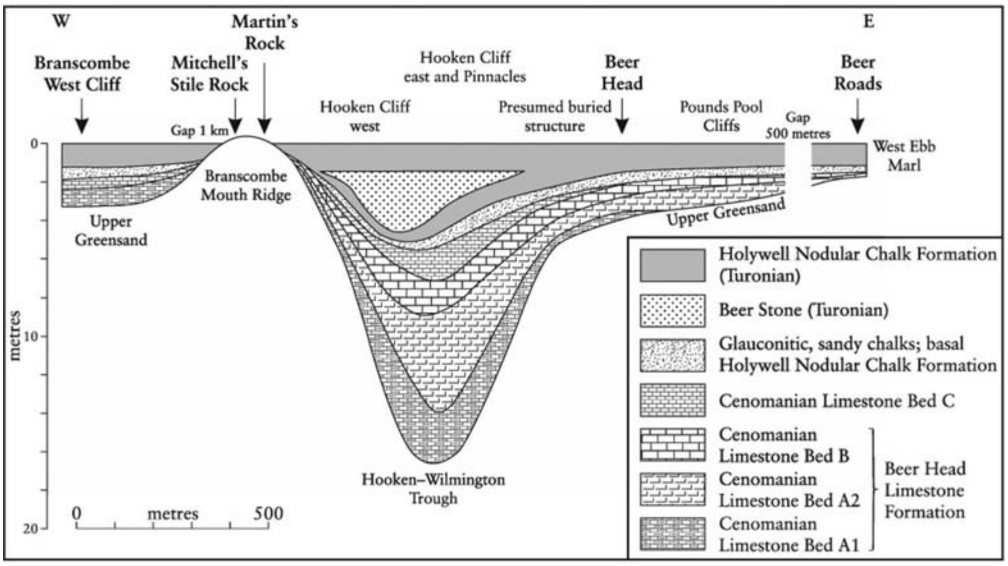


*Figure 3.21: Schematic and simplified view of lateral variation in the Cenomanian and Early Turonian deposits of Hooken Cliffs and adjacent areas. The datum is the West Ebb Marl.*

The diverse trigoniid bivalve assemblage, together with the coralline sponge *Acanthochaetetes ramulosus*, suggest that the Basement Bed is the correlative of the Pounds Pool Member (Bed A1) of the Beer Head Limestone Formation of **Hooken Cliff** (see GCR site report, this volume), and other coastal successions. The association of the heteromorph taxa *Algerites ellipticum*, *A. sayni*, *Idiohamites alternatus*, *Neostlingoceras carcitanense*, *N. oberlini* and *Sciponoceras roto* with common *Mantelliceras couloni*, places the ammonite assemblage in the basal Cenomanian *Neostlingoceras carcitanense* Subzone of the *Mantelliceras mantelli* Zone. Some of these taxa, particularly the heteromorphs (but not the non-heteromorph species, *M. couloni*) also occur in the phosphatized fauna of the Glauconitic Marl of the **Compton Bay** and correlative sites in the Isle of Wight (see GCR site report, this volume). According to Wright and Kennedy (1984), the common occurrence of *M. couloni* in the Basement Bed at Reeds Farm Pit suggests correlation with the *couloni* horizon in the upper part of the *carcitanense* Subzone of the type Cenomanian strata of Le Mans in France. The relationship between the Weston Hardground, at the top of the Pounds Pool Member on the coast, and the Basement Bed remains unclear.

The record of the inoceramid bivalve *Inoceramus virgatus* from the lowest 0.6 m of the Wilmington Sand at this locality is of key importance. It suggests, on the basis of the range of *I. virgatus* elsewhere, that the hitherto undated Wilmington Sand belongs to the lower part of the *Mantelliceras dixoni* Zone. If this interpretation is correct, the Wilmington Sand is separated from its basement bed by a non-sequence that represents much of the *mantelli* Zone, i.e. the interval comprising the *Sharpeiceras schlueteri* and *Mantelliceras saxbii* subzones. As at **Wilmington Quarry**, the abundance of *I. virgatus* in the overlying 'Grizzle' here enables correlation with the *I. virgatus* acme-event that is developed throughout northern Europe in the middle part of the *dixoni* Zone.

## Conclusions

The Reeds Farm Pit section complements the section at **Wilmington Quarry**. The Basement Bed here (unlike that at the latter locality) has yielded the best preserved and most diverse basal Cenomanian *Neostlingoceras carcitanense* Subzone ammonite fauna in Britain, including many type and figured specimens.

## Reference list

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