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# Huntsman's Quarry, Naunton, Gloucestershire

[SP 126 253]

## Highlights

Huntsman's Quarry, Naunton, is the best Cotswolds Slate locality, and source of six or seven species of reptiles. The fauna is comparable with that from Stonesfield, but occurs much further west, on the other side of a major palaeogeographic barrier.

## Introduction

Huntsman's Quarry is the only major quarry still working in the Cotswolds Slate (=Eyford Member), formerly equated with the Stonesfield Slate (see Stonesfield report). It lies 2 km northeast of Naunton on an unclassified road that crosses Eyford Hill. The quarry has yielded a wide range of fossil reptiles in the past and is currently operated by Huntsman Quarries Ltd for road-metal and gravel and has been extended much towards the north. The exact location of the older finds is unknown, but they were probably made in the older portions of the quarry, several of which still offer good exposures e.g. [SP 123 254], where a 5 m section is to be seen on the long north face of an old pit, and at [SP 123 252], where a 3–4 m face is still visible). The quarry has potential for future finds of reptiles since the old pits are still accessible and new quarrying operations have exposed further large areas. Some *Megalosaurus* specimens have been found recently (OUM).

The Cotswolds Slate was extensively worked for roofing slates in the 19th and early 20th century around Sevenhampton, Kington, Naunton and Eyford (H.B. Woodward, 1894, pp. 294–6, 484–5; Richardson, 1929, pp. 102–16, 144–6; Arkell, 1933, p. 278). The fossil reptiles were examined by various Victorian authors and the fauna was reviewed by Richardson (1929), but the older, and more recent, finds are in need of redescription.

## Description

H.B. Woodward (1894, p. 295) provided a section at Summerhill, Eyford (?[SP 129 246], one of the Old Huntsman's Quarry pits), but Huntsman's Quarry itself was first described by Richardson (1929), who gave a section (p. 114) as follows:

|  | Thickness ft | in |
|--|--------------|----|
| Limestone, grey, rather hard   | seen 2       | 6  |
| Marl, grey and yellow; shell fragments-mostly of oysters; one specimen of <i>Rhynchonella ?concinna</i>  | 0            | 6  |
| Limestone, yellowish, sparsely oolitic; <i>Lima cardiiformis</i>   | 2            | 9  |
| 'The Crop'. Oolitic, grey, obliquely-laminated: makes 'Presents' [ <i>?Rhynchonella</i> Bed, and <i>Ostrea acuminata</i> Limestones remanié]. Marl, brown, clayey, with oysters and a few pebbles bored by <i>Lithophaga</i> | 2            | 8  |
|  | 0            | 2  |

|  |   |   |
|--|---|---|
| [? Sevenhampton Marl] Manly limestone, crowded with oysters; <i>Lima cardiiformis</i> , <i>Modiola</i> sp., <i>Pholadomya solitaria</i> , <i>Pinna ampla</i> . and occasional plant remains, locally passing into a hard limestone | 2 | 0 |
| ?1–5. Flagstones. Limestones, massive, flaggy, in the main blue-hearted, but locally yellow and oolitic. Contain locally pebbles of oolite, and, in cavities in the lower part of the bottom stratum (5), green clay               | 6 | 6 |
| 6. Green Clay, locally sandy average thickness   | 0 | 2 |
| 7–8. Pendle. (a) Sandstone, hard, grey (weathering brown), rarely passing into a brown, irregularly laminated fissile sandstone  | 2 | 8 |
| (b) Limestone, hard, grey, sandy [Non-sequence: no evidence for the equivalent to the Planking]  | 1 | 6 |
| 9. Sandy limestone, hard, grey at the top, brown and shaly, containing flat marl pellets. Surface undulating and water-worn. <i>Placunopsis socialis</i> common in the top layer. Said to be a very bad hard bed and not worked    |   |   |

Richardson (1929) equated the bulk of the exposure in Huntsman's Quarry with the 'Stonesfield Slate Series' low in the Great Oolite Group in the classic Hampen Railway cutting section. Arkell (1933, p. 278) and McKerrow and Baden-Powell (1953, p. 92) followed this assignment. Sellwood and McKerrow (1974, p. 193) assigned beds 1–9, and the three units above these in Richardson's section, to the Cotswold Slate, which they renamed the Eyford Member (Figure 6.9). They assign the succeeding 2 m of oolitic limestone to the Taynton Limestone Formation (?upper *progracilis* Zone). The fossils came from the 'Slate Bed' (Richardson, 1929), probably equivalent to bed 7 in the log ('Pendle').

The fauna from Huntsman's Quarry consists of reptiles, fishes, arthropods, molluscs (including rare ammonites), annelids, starfish and plants (Richardson, 1929). The invertebrate fauna is distinctive, differing in many ways from that of the beds above and below, and also from stratigraphically equivalent units elsewhere. The bivalve *Myophorella impressa* (formerly *Trigonia*) is the most abundant fossil. Other bivalves include *Liostrea*, *Gervillella* and *Chlamys*. Rhynchonellid brachiopods and gastropods are also a common component of the fauna, but other marine invertebrates, including ammonites, echinoderms (crinoids and starfish) and barnacles (represented by plates), are rare. Insects are also present, the commonest being beetles, which are represented in the deposit by their resistant elytra. There is a substantial flora which includes ferns and early conifers (leaves, seeds and fruit), ginkgo leaves and 'carpolithes' seeds.

The reptile remains apparently occurred as isolated bones. Most of the specimens are relatively small (crocodile and dinosaur teeth, pterosaur limb bones), which suggests some degree of sorting. The association with marine invertebrates (e.g. barnacles, starfish, ammonites, belemnites) indicates transport or reworking of the terrestrial forms at least. Nothing is known of the taphonomy of the vertebrates since the matrix has been removed from the museum specimens.

## Fauna

The reptilian fauna from Huntsman's Quarry includes dinosaurs, crocodylians, pterosaurs and a turtle. One of the best collections was made by the Rev. E.F. Witts (1813–86) and it is now preserved in GLCRM (Savage, 1963).

Unfortunately, many museum specimens are labelled simply 'Eyford', which could refer to any of the quarries on the east side of Eyford Hill (e.g. [SP 125 252], [SP 126 253], [SP 126 254], [SP 128 251], [SP 128 253], [SP 128 254], [SP 130 251], all of which may still be seen, at least in part). Specimens labelled 'Naunton' may come from Huntsman's Quarry [SP 131 322], from Summerhill Quarries (?[SP 129 246], [SP 113 245]), or from New Buildings Quarries ([SP 135 237], [SP 134 239]). In the following list, all specimens are labelled 'Eyford' (often spelt Eyeford), unless otherwise stated.

## Testudines

'Chelonian indet.' Carapace; BMNH R2634

## Archosauria: Crocodylia: Thalattosuchia:

### Steneosauridae

*Steneosaurus brevidens* (Phillips, 1871) Teeth: BMNH 28611, 82631; GLCRM G.53–58

*Teleosaurus sublidens* Phillips, 1871 Teeth: BMNH 28611, R2632–3; BGS(GSM) G.1–51; jaws: BGS(GSM) G.52, 77; BGS(GSM) (various: 'Naunton')

*Steneosaurus/Teleosaurus* sp. Teeth: BMNH R6777, R6778 ('Huntsman's Quarry'), R6779–81; BGS(GSM) 113 735–6, 113 759, 113 764–8; rib: BGS(GSM) 11838; scute: BGS(GSM) 72280 ('Naunton'), BGS(GSM) GLCRM 59–60, various bones: GLCRM 558–62

## Dinosauria: Saurischia: Theropoda:

### Megalosauridae

*Megalosaurus bucklandi* Meyer, 1832 Teeth: BMNH 28608, R2635; limb bones and ribs GLCRM G.70–1, G.72–3, G.74–6 *Megalosaurus* sp. Tibia: OUM J.29759

## Archosauria: Pterosauria: 'Rhamphorhynchoidea'

*Rhamphocephalus* sp. Limb-bones, a ?proximal phalanx and pectoral girdle elements: BMNH R6782, Munchen 1976 1.41–4 ('Huntsman's Quarry'); BGS(GSM) 113 728–31, 113 733, 113 738, 113 747, 113 753, 113 758, 113 670, unnumb.; GLCRM G.61–2

## Interpretation

The Cotswold Slates (Eyford Member) are dated to the *progracilis* Zone (early Mid Bathonian) on the basis of sparse ammonites. Richardson (1929, p. 114) noted the occurrence of *Perisphinctes gracilis* (Buckman), reidentified as *Procerites progracilis* Cox and Arkell, in the Cotswold Slates of the Eyford area. *Procerites mirabilis* Arkell was found at Eyford and Huntsman's Quarry (Arkell 1951–8, pp. 199–201; Torrens 1969b, pp. 71–2). These isolated Finds place the Cotswold Slates within the *progracilis* Zone (Torrens, 1969b, pp. 71–3; in Cope *et al.*, 1980b, p. 35, fig. 6a), although correlation of all the beds in Richardson's (1929) section is unclear.

The turtle carapace has not been identified, but it may belong to the genus *Protochelys* which occurs at Stonesfield in rocks of similar age.

The long-snouted marine crocodylians *Steneosaurus* and *Teleosaurus* from Huntsman's Quarry are represented largely by teeth. These have been identified by comparison with other Bathonian specimens from the Stonesfield Slate (Stonesfield Member), White Limestone and Forest Marble of Oxfordshire and Northamptonshire. These crocodylians were evidently relatively rather abundant in the Cotswold Slate, rather more so than in the Stonesfield Slate.

The teeth and tibia of *Megalosaurus* have, again, been identified by comparison with material from the White Limestone of Oxfordshire, Dorset and other localities in Gloucestershire.

The pterosaur bones have been hard to identify since they consist mainly of wing elements. They may belong to the genus *Rhamphocephalus*, but the significance of that genus is unclear. A fine pterosaur skull impression from the Cotswold Slate of Kyneton Thorns Quarry nearby [SP 122 264] was named as the type specimen of *Rhamphocephalus prestwichi* Seeley (1880).

In a manuscript catalogue of the Charing Pearce collection in BRSMG, teeth of *Ichthyosaurus* and *Plesiosaurus* from Eyford are mentioned, but the specimens have not been located. Some probable plesiosaur teeth are preserved in Gloucester (GLCRM G.63–9, 78–80).

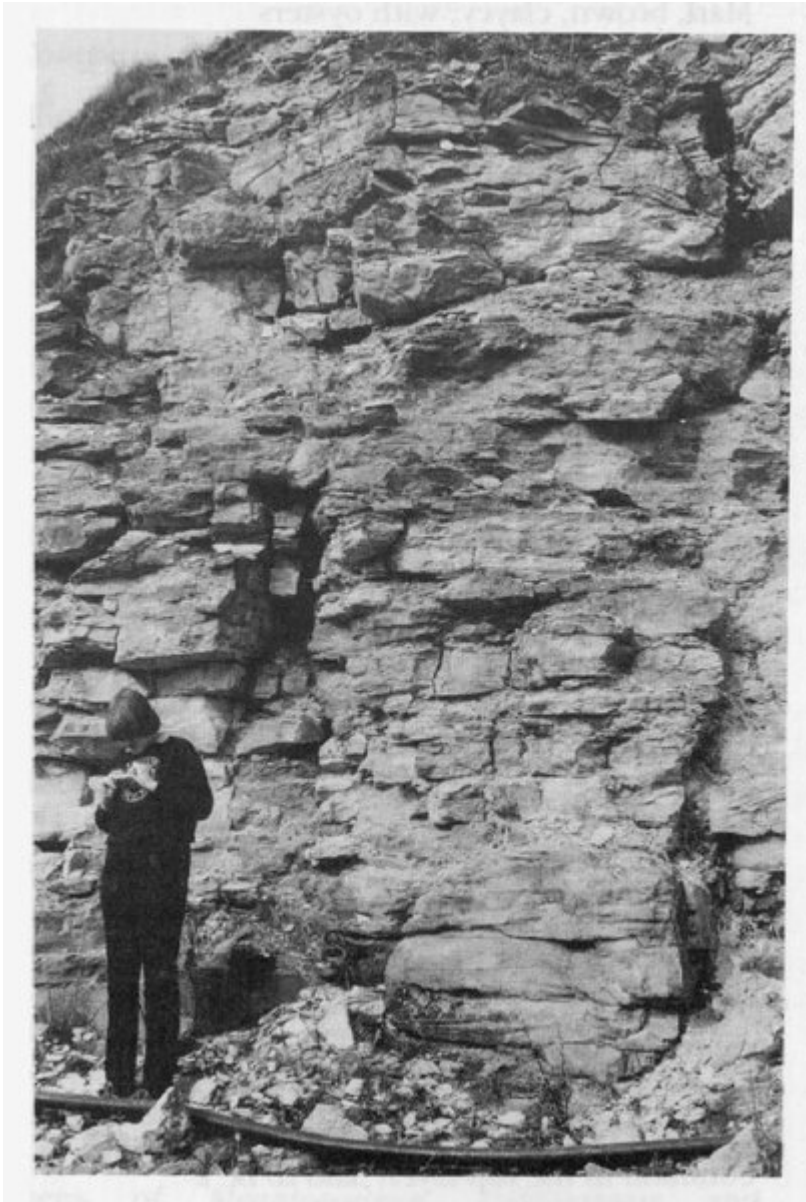
### **Comparison with other localities**

The reptile fauna from Huntsman's Quarry may be compared with that of other quarries in the Cotswold Slate, some of which have already been mentioned. The cluster of ten or more quarries on the east side of Eyford Hill (scattered around [SP 135 255]) have probably yielded a similar range of fossil reptiles. Specimens labelled 'Naunton' include crocodile teeth and a scute. These may have come from various sites to the north and east of Naunton (see above). Pterosaur limb bones have been obtained from the quarries on Sevenhampton Common [SP 012 232] (H.B. Woodward, 1894, p. 294). *Megalosaurus* teeth and the fine skull cast of *Rhamphocephalus prestwichi* were found in Kyneton Thorns Quarry [SP 122 264] (H.B. Woodward, 1894, p. 295). Comparable sites further afield in Gloucestershire and Oxfordshire are detailed in the Stonesfield report (see above).

### **Conclusions**

Huntsman's Quarry contains the largest extant exposure of the Cotswold Slate (Eyford Member), and it has yielded the best reptile fauna of that unit. The fauna is placed temporally between that of New Park Quarry and other quarries in the Chipping Norton Formation (*zigzag* Zone), and sites in the White Limestone and Forest Marble (*subcontractus*–*discus* Zones) of Oxfordshire. The fauna is far less abundant and diverse than that of the Stonesfield Slate, but it is of considerable importance in view of the great local variations in deposition in the Cotswolds and Oxfordshire at the time. Its conservation value lies in this importance and its potential for future finds.

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



*(Figure 6.9) Exposure of the Eyford Member, or 'Cotswolds Slates', at Huntsman's Quarry. Reptiles occur as isolated bones at various levels in the succession. (Photo: M.J. Benton.)*