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## Headon Hill

[SZ 315 858]–[SZ 318 862]

(Potential GCR site)

### Highlights

Early Cenozoic amphibian fossils are recorded from the epicontinental–continental sequence of this site in the Isle of Wight, Hampshire. They occur in the sands and clays of the Headon Hill Formation (Late Eocene).

### Introduction

The Late Eocene (Priabonian) Headon Hill Formation in the type area in the degraded coastal sections of Headon Hill, Isle of Wight, has produced an abundant fauna of turtles, crocodiles, snakes and lizards. Large parts of the section (Figure 15.16) are obscured by mud flows, but the relevant beds may easily be cleared for further excavation.

The Headon Hill Formation between Alum Bay and Totland has been described by Prestwich (1846), White (1921), Stinton (1971), Cray (1973), Daley and Insole (1984) and Insole and Daley (1985). Accounts of the reptilian faunas have been given by Cray (1973), Meszoely and Ford (1976) and Rage and Ford (1980), but there is as yet no complete overview.

### Description

A generalized section of the Headon Hill Formation taken from the south-west corner of Headon Hill, based on Cray (1973) and Insole and Daley (1985), is:

	Thickness (m)
Cliff End Member (part of 'Upper Headon Beds')	
Clays and marls seen to	6.6
Hatherwood Limestone Member (part of 'Upper Headon Beds')	
Limestones	2.8
Lignite (Lignite Bed)	0.7
Limestones	2.7
Linstone Chine Member (part of 'Upper Headon Beds')	
White and grey sands ( <i>Microchoerus</i> Bed at base)	0.8
Colwell Bay Member ('Middle Headon Beds')	
Blue-green clays and sands	2.0
<i>Limnaea</i> Limestone	0.2
Blue, green and brown sandy clays ( <i>Venus</i> Bed)	c. 4.4
Sands, clays and lignites ( <i>Neritina</i> Bed)	2.5
Totland Bay Member (Tower Headon Beds')	
<i>Limnaea</i> Limestone (How Ledge Limestone)	c. 2.0
Marls, clays, sands and lignites	4.6
<i>Limnaea</i> Limestone	0.4
Green clays and pale sands	4.4
<i>Limnaea</i> Limestone	0.8
Blue and green clays	1.0
<i>Limnaea</i> Limestone	0.25
Green sandy clays	0.7

In the early 1970s, large collections of reptiles (particularly squamates) and amphibians were obtained by Mr R.L.E. Ford from units in the Totland Bay Member, in particular from Bed HH2 (Bosma, 1974, fig. 9) beneath a unit of hard limestone named the 'How Ledge Limestone', from a series of green-grey clays. Two localities have yielded herpetofaunas from this stratum: in the undercliff at Headon Hill and in Totland Bay. The How Ledge Limestone occurs along the coast between Hatherwood Point and How Ledge, and it appears that the amphibians occur patchily beneath the entire length of the outcrop. The fossils are all represented by disarticulated, and frequently abraded and fragmented, elements that indicate considerable predepositional disturbance.

## Fauna

The main collection of fossil reptiles from Headon Hill are in the NHM, Museum National d'Histoire Naturelle (MNHN) Paris and the Stuttgarter Museum für Paläontologie (Ford Collection). The collections include many mammal and reptile taxa, as well as amphibians.

Anura: Discoglossidae

'discoglossid 2' of Milner *et al.* (1982)

Anura: Pelobatidae

*Eopelobates* sp.

Anura: Palaeobatrachidae

*Albionbatrachus wightensis* Meszoely *et al.*, 1984

Caudata: Salamandridae

salamandrid indet. cf *Megalotriton*

## Interpretation

The interpretation of the Headon Hill section is essentially that given for the Hordle Cliff (q.v.) outcrop — a basin infilling with a final depositional phase above sea level. The land surface was heavily vegetated and supported a considerable vertebrate fauna. For the latter to have been so apparently abundant, there was probably a substantial invertebrate fauna as well, all dependent upon extensive bodies of freshwater. The climate was subtropical or Mediterranean.

## Comparison with other localities

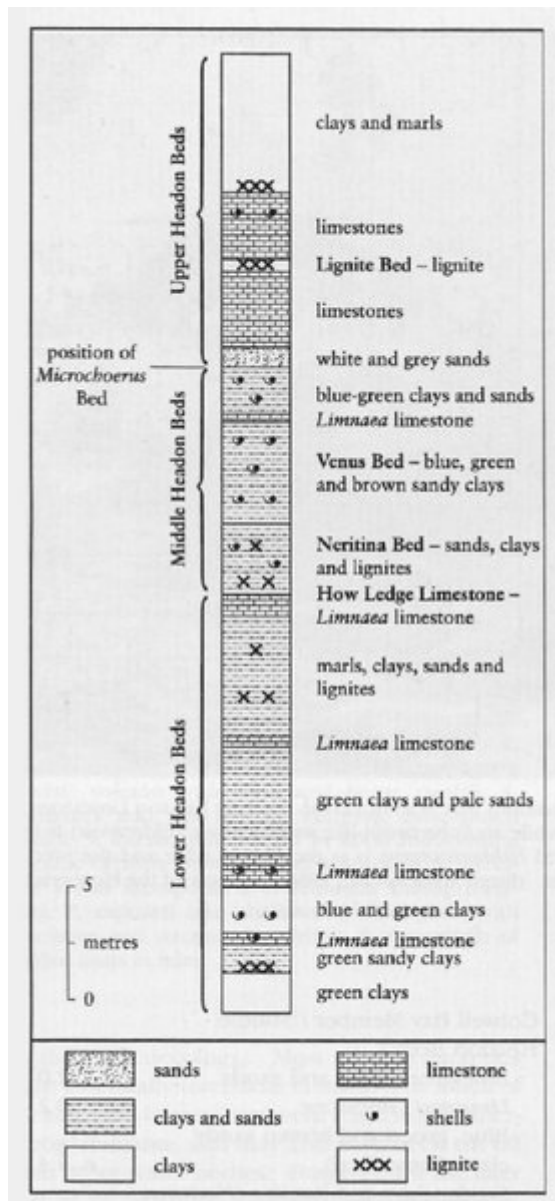
Geographically and stratigraphically, the nearest comparable units to the Totland Bay Formation at Headon Hill are the same stratigraphical unit as at Hordle Cliff [SZ 263 923]–[SZ 273 918] and Wootton Creek, Fishbourne, on the Isle of Wight [SZ 551 927]. In the 'Osborne Beds' the large discoglossid frog 'discoglossid 2' of Milner *et al.* (1982) is present (Rage and Ford, 1980). All of the amphibians recorded from Headon Hill are known from the directly correlative sequence at Hordle, but there are many genera known from Hordle that are absent on the Isle of Wight (see above), possibly the result of taphonomic differences (Milner *et al.*, 1982). Elements of the Headon Hill fauna are found in a well-preserved assemblage of anurans and caudates from the Oligocene Lower Hamstead Beds exposed along the foreshore at Cranmore Ledge, Bouldnor, on the Isle of Wight ([SZ 370 900]–[SZ 405 920]; Milner, 1986). This assemblage has yielded 'discoglossids 1 and 2' of Milner *et al.* (1982), *Eopelobates* cf. *hinschei* and the salamanders *Salamandra sansaniensis* and *Chelotriton* cf. *paradoxus*.

The 'Venus' Bed and Oyster Bed of the Middle Headon Beds exposed along the foreshore at Colwell Bay, Isle of Wight [SZ 327 878]–[SZ 328 881], yield good fish fossils.

## Conclusion

The conservation value of the Headon Hill section lies in its great potential for future collecting, since it has been much less exploited than the equivalent-age units at Hordle Cliff (q.v.).

## References



(Figure 15.16) Section through the Headon Hill Formation at Headon Hill, Isle of Wight (after Cray, 1973).