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# Stratigraphical interpretation of Chalk Group microfossils from Sheet 266 (Marlborough): May 2011

Science, Geology & Landscape Programme

Internal Report IR/11/064



BRITISH GEOLOGICAL SURVEY

SCIENCE, GEOLOGY & LANDSCAPE PROGRAMME

INTERNAL REPORT IR/11/064

# Stratigraphical interpretation of Chalk Group macrofossils from Sheet 266 (Marlborough): May 2011

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## *Map*

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# Foreword

This report describes the stratigraphical interpretation of macrofaunas from the Chalk Group of the Marlborough district (Sheet 266). The material was collected in May 2011, by MAW, A R Farrant, P M Hopson and J Thompson, in connection with the resurvey of Sheet 266.

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**Figure 7. The chalk succession seen near Elm Tree Farm ((63) of report)**

## Summary

Macrofossils from surface and outcrop exposures of the Chalk Group on Sheet 266 (Marlborough) were collected in May 2011 in connection with the resurvey of that district. The material ranges from the *Mantelliceras mantelli* Zone to the *Micraster coranguinum* Zone, and can be assigned to the West Melbury Marly Chalk, Zig Zag Chalk, New Pit Chalk, Lewes Nodular Chalk and Seaford Chalk formations. The higher, typically softer part of the Lewes Nodular Chalk, locally produces a brash with common, thick inoceramid shell fragments, that may be mistaken for Seaford Chalk.

# 1 Introduction

Material from the Chalk Group exposed at 63 localities is described below. The stratigraphy referred to in this report is shown in Figure 1, and author citations for fossil species are given as a separate appendix.

## 2 Stratigraphy

- (1) Old chalk pit SE of Man's Head and 520 m NE of Wick Down Farm, SE of Hackpen Hill, Wiltshire.

1:10 000 SU17SW NGR: SU 14081 73798

Specimen nos: WMD 15653 – 15659

The fauna includes *Mytiloides* ex gr. *hercynicus* – *subhercynicus* and the ammonite *Collignonicerias woollgari?*.

**Conclusion:** White Chalk Subgroup, basal New Pit Chalk; Turonian, basal *T. lata* Zone.

- (2) Brash from badger scrape in field on west flank of Barbury Castle, c. 590 m NW of Barbury Castle Farm, Wiltshire.

1:10 000 SU17NW NGR: SU 14752 76092

Specimen nos: WMD 15660 – 15662

The fauna is as follows:

Bivalvia: oyster moulding ammonite

Ammonoidea: *Collignonicerias?*

*Sciponoceras?*

**Interpretation:** The material was collected from soft to firm chalk, inferred to represent New Pit Chalk Formation. The Turonian ammonite *Collignonicerias* occurs widely in the New Pit Chalk.

**Conclusion:** White Chalk Subgroup, New Pit Chalk Formation; Turonian, *T. lata* Zone.

- (3) Old chalk pit adjacent to road (E side) east of Barbury Castle, 450 m N of Upper Herdswick Farm, Wiltshire.

1:10 000 SU17NE NGR: SU 15822 76413

Specimen nos: WMD 15663 – 15671

The material was collected from soft to locally hard chalk, lacking flint. The section is poorly fossiliferous, but several examples of the bivalve *Inoceramus cuvieri* were found, with an oyster and an ammonite whorl fragment.

**Interpretation:** The lithology and fauna favour assignment to the *T. lata* Zone and New Pit Chalk, but the lack of fossils and record of locally hard chalk is notable, and may indicate local synsedimentary response to evolving basin architecture.

**Conclusion:** White Chalk Subgroup. New Pit Chalk Formation; Turonian, *T. lata* Zone.

- (4) Old chalk pit c. 650 m NE of Overton Hill, near West Kennett, Wiltshire.

1:10 000 SU16NW NGR: SU 12274 68522

Specimen nos: WMD 15672 – 15685

This locality shows mostly degraded faces. No *in situ* chalk was identified. Material collected from loose chalk includes common specimens of the bivalve *Inoceramus cuvieri*, and the ammonite *Collignonicerias woollgari*. The lithology is mostly firm chalk and the flints occur amongst the loose chalk material.

**Conclusion:** White Chalk Subgroup, New Pit Chalk Formation; Turonian, *T. lata* Zone.

- (5) Chalk cutting behind garage, 350 m NE of church at Fyfield, Wiltshire.

1:10 000 SU16NE NGR: SU 15059 68970

Specimen nos: WMD 15686 – 15695

The cutting exposes about 0.6 m of hard, nodular chalk, including a strongly glauconitised and iron-stained hardground (Fig. 2). The sparse fossil material comprises specimens of the bivalve *Inoceramus cuvieri*. No flint is present in the section, but a weak, pale green marl occurs about 0.45 m below the hardground.

A short distance to the east, a section behind a joinery workshop exposes three prominent hardgrounds, the lowest being the thickest (c. 0.55 m) and most strongly developed, and probably representing the Ogbourne Hardground of the Chalk Rock (Fig. 2).

**Conclusion:** White Chalk Subgroup, basal Lewes Nodular Chalk Formation (Chalk Rock); Turonian, upper *T. lata* Zone (basal *P. (S.) plana* Zone probably seen in joinery workshop section).

- (6) Chalk pit c. 500 m S of Triangulation Point on Hackpen Hill, Wiltshire.

1:10 000 SU17SW NGR: SU 12867 73910

Specimen nos: WMD 15696 – 15703

The material was collected from soft-weathering, poorly fossiliferous chalk with small flints, and includes the brachiopod *Orbirhynchia herberti?*, the bivalve *Inoceramus cuvieri* and the echinoid *Plesiocorys (Sternotaxis) plana*. Chalk seen immediately below the soil horizon is very hard and splintery, but this seems to be due to secondary cementation.

Brash of Chalk Rock (glauconitised pebbles) was found at the field edge a few metres above the top of the pit, at [SU 12831 73914].

**Conclusion:** White Chalk Subgroup, upper New Pit Chalk Formation; Turonian, *T. lata* Zone.

- (7) Old chalk pit immediately N of track and opposite Fortnight Bungalow, 590 m SE of Triangulation Point on Hackpen Hill, Wiltshire.

1:10 000 SU17SW NGR: SU 13437 74125

Specimen nos: WMD 15704 – 15709

The material was collected from soft to firm, fairly smooth-textured and rather poorly fossiliferous chalk. The fauna comprises a few specimens of the bivalve *Inoceramus cuvieri*.



**Conclusion:** White Chalk Subgroup, New Pit Chalk Formation; Turonian, *T. lata* Zone.

(8) Cutting in chalk adjacent to new barn at Stanmore Barn, 860 m SSE of Clatford, Wiltshire.

1:10 000 SU16NE NGR: SU 16084 67693

Specimen nos: WMD 15710 – 15719

The material was collected from loose scree covering a graded section cut into the Chalk for the construction of a new barn. The lithology of the scree is hard to firm chalk with iron-stained sponge remains and flints.

The fauna comprises shell fragments of the bivalve *Cremnoceramus*, probably representing *C. crassus* or *C. deformis*.

**Conclusion:** White Chalk Subgroup, upper Lewes Nodular Chalk; Coniacian, *M. cortestudinarium* Zone.

(9) Section adjacent to farm buildings in valley bottom, c. 790 m W of East Kennett Long Barrow, Wiltshire.

1:10 000 SU16NW NGR: SU 10845 66793

Specimen nos: WMD 15720 – 15739

The section exposes about 1.4 m of hard, nodular chalk, with nodular and sheet flints and a thin marl seam (Fig. 3). A shell bed, 0.3 to 0.5 m above the base of the section, contains large *Cremnoceramus*, including very thick distal valve fragments. The species are probably *C. crassus* and/or *C. deformis*.

**Conclusion:** White Chalk Subgroup, upper Lewes Nodular Chalk; Coniacian, *M. cortestudinarium* Zone.

(10) Old chalk pit adjacent to abandoned railway line, 690 m NW of Great Lodge Farm, Wiltshire.

1:10 000 SU16NE NGR: SU 19899 66939

Specimen nos: WMD 15740 – 15742

The section comprises 5 m of soft, smooth-textured chalk with large nodular flints (Fig. 4). One of the flint horizons is vertically elongated, with an estimated vertical extent of 0.5 m. The chalk is very poorly fossiliferous, the fauna consisting of the echinoid *Micraster coranguinum* and spine and test fragments of cidarid echinoids.

**Interpretation:** The lithology and fauna suggests assignment to the Seaford Chalk. The faunal evidence is not diagnostic, but cidarid echinoids are relatively common in the higher part of the Seaford Chalk. The rarity of fossils in this extensive section is reminiscent of the typically poorly fossiliferous late Coniacian part of the Seaford Chalk. However, the southward dip in this region of outcrop, and likely presence of Santonian chalk further north (see (11) below), make this implausible unless there is a localised structure that changes the stratal geometry.

The small paramoudra-like flint is notable. This style of flint development tends to occur in regions where chalk is being re-sedimented (Bromley & Ekdale, 1987), and may explain the lack of macrofossils, or be symptomatic of nearby syndepositionally-active structure(s).

**Conclusion:** White Chalk Subgroup, ?upper Seaford Chalk Formation; ?Santonian, *M. coranguinum* Zone.

- (11) South portal of tunnel on abandoned railway line south of Marlborough, 440 m SW of Brown's Farm, south of Marlborough, Wiltshire.

1:10 000 SU16NE NGR: SU 19387 67445

Specimen nos: WMD 15743 – 15747

The material was collected from a c. 3 m section exposing semi-continuous nodular flint bands (Fig. 5). The chalk is mostly soft and smooth-textured, but with a bed of relatively harder chalk below a ?marl (possibly sheared). There are also high angle slickensided faces running oblique to the exposed succession, suggesting that the section may be sub-parallel to a fault. The fauna comprises the echinoids *Echinocorys scutata* and crushed *Micraster turonensis?* or *gibbus?*, and a thin, pink-shelled inoceramid fragment.

**Interpretation:** The lithology is consistent with the Seaford Chalk Formation, but the fauna is difficult to interpret. Typical *Micraster turonensis* ranges from the upper *M. cortestudinarium* Zone to the lower *M. coranguinum* Zone, and thus spans the Lewes/Seaford Chalk boundary. A nearby locality ((12) below), slightly further south along the cutting, but probably at a similar stratigraphical level, contains *Micraster coranguinum*, indicating unequivocal assignment to the *M. coranguinum* Zone or younger.

As well as resembling *Micraster turonensis*, the *Micraster* also shares some features with *Micraster (Isomicraster) gibbus*, which typifies the middle part of the *M. coranguinum* Zone. Typical *M. (Isomicraster) gibbus* is very rounded, highly conical in profile, and lacks a band of fine spine bases (fasciole) at the posterior margin. The fasciole is weakly developed in the crushed specimen, but some material in BGS reference collections shows similarly weak development in unequivocal *M. (Isomicraster) gibbus*. The crushed specimen is also very rounded, but too distorted for the original profile to be deduced.

White (1925) recorded that the chalk exposed in the railway cutting between Postern Hill and British Settlement, south of Marlborough, is probably around the middle of the *M. coranguinum* Zone. Old OS topographical maps suggest that this probably equates with the chalk forming the northern end of the tunnel portal, at about [SU 19086 67983], and suggests that the crushed *Micraster* is likely to be *(Isomicraster) gibbus*, favouring the middle *M. coranguinum* Zone and middle Seaford Chalk Formation.

**Conclusion:** White Chalk Subgroup, middle Seaford Chalk Formation; ?Santonian, middle *M. coranguinum* Zone.

- (12) South portal of abandoned railway south of Marlborough, c. 420 m SW of Brown's Farm, south of Marlborough, Wiltshire.

1:10 000 SU16NE NGR: SU 19488 67329

Specimen no.: WMD 15748

The specimen is the echinoid *Micraster coranguinum*, present in rather rough-textured, firm to hard, flinty chalk. The flints do not show the same close lateral spacing as those in the section seen at (11) (above), although the stratigraphical horizon must be similar allowing for the southward dip.

**Interpretation:** See reference to this locality in (11) (above).

**Conclusion:** White Chalk Subgroup, middle Seaford Chalk Formation; ?Santonian, middle *M. coranguinum* Zone.

(13) Chalk scrapes on hillside adjacent to footpath in Clatford Bottom, c. 800 m NNE of Clatford Park Farm, SW of Marlborough, Wiltshire.

1:10 000 SU16NE NGR: SU 16701 66927

Specimen nos: WMD 15749 – 15760

The fauna comprises shell fragments of *Platyceramus* and possible *Volvicceramus*, in soft, flinty chalk that is patchily sponge-bearing. Some of the shell fragments are distinctly thick (+5mm).

**Interpretation:** The fauna suggests the lower part of the *M. coranguinum* Zone and the lower part of the Seaford Chalk Formation. The older, *M. cortestudinarium* Zone Lewes Chalk occurs about a kilometre further north, at Stanmore Barn (see (8) above).

**Conclusion:** White Chalk Subgroup, ?lower Seaford Chalk Formation; ?Coniacian, *M. coranguinum* Zone.

(14) Old chalk pit c. 300 m ESE of Manton House Farm, NW of Marlborough, Wiltshire.

1:10 000 SU17SE NGR: SU 17405 70051

Specimen nos: WMD 15761 – 15788

ARF 2438 – 2447

The fauna was collected from a c. 2.5 m section of mostly hard, nodular, flinty chalk (Fig. 6). The lowest part of the section is distinctly soft, and contains the trace fossil *Zoophycos* preserved as thin, sharply defined marl wisps. An ironstained hardground and marl occur in the higher part of the section.

The horizoned fauna (WMD specimens) is as follows:

Horizon: Zoophycos Bed

Echinoidea: *Micraster normanniae*

Ichnofossils: *Zoophycos*

Horizon: just above hardground

Echinoidea: *Echinocorys scutata gravesi*

*Plesiocorys (Plesiocorys) placenta*

Horizon: about 0.4 m above hardground & below marl

Bivalvia: *Cremonceramus* sp.

*C.?*

*C. waltersdorfensis*

*C. waltersdorfensis?*

*C. deformis erectus?* (several)

Echinoidea: *Echinocorys scutata*

*Micraster normanniae*

Horizon: marl

Bivalvia: *C. waltersdorfensis*

Horizon: just above marl

Echinoidea: *Plesiocorys (Plesiocorys) placenta*

*Plesiocorys (Sternotaxis) plana*

The unhorizoned fauna (ARF specimens) is as follows:

- Bivalvia: *Cremonoceramus denselamellatus*  
*C. waltersdorfensis?*  
*C. deformis erectus*
- Echinoidea: *Echinocorys scutata*  
*E. scutata gravesi*  
*Micraster normanniae*  
*M. sp.*  
*Plesiocorys (Plesiocorys) placenta*  
*Plesiocorys (Sternotaxis) plana*

**Interpretation:** The fauna indicates the uppermost *P. (S.) plana* Zone and the basal *M. cortestudinarium* Zone (below the Hope Gap Hardground). The soft chalk with *Zoophycos* probably correlates with the Cuilfail *Zoophycos*, and the hardground is probably the equivalent of at least the Navigation Hardground, and may condense within it stratigraphically higher horizons. *Cremonoceramus* is characteristic of the uppermost Turonian and the lower part of the Coniacian, and typically first appears above the Navigation Hardground. *C. deformis erectus* is the marker-fossil for the base of the Coniacian. The mixing of *Cremonoceramus waltersdorfensis* and *C. deformis erectus* in the interval above the hardground and below the marl is unusual, as their first occurrences are not usually synchronous. This feature, and the very fragmentary nature of the remains, suggests that the chalk above the hardground has experienced considerable reworking and condensation. In fully expanded successions, a marl pair (Navigation Marls) occurs above the Navigation Hardground. Whilst it is tempting to equate the marl above the hardground with one of the Navigation Marls, the record of *Cremonoceramus deformis erectus* below the marl suggests that it is likely to be a higher horizon. Both the paired Navigation Marls could have been lost through condensation of the succession, either being incorporated into the hardground or admixed into the sediment immediately above the hardground.

**Conclusion:** White Chalk Subgroup, middle Lewes Nodular Chalk Formation; Late Turonian & Early Coniacian, uppermost *P. (S.) plana* Zone and basal *M. cortestudinarium* Zone.

(15) Exposure in bank on north side of stream, c. 370 m W of West Kennett Farm, West Kennett, Wiltshire.

1:10 000 SU16NW NGR: SU 10760 68299

Specimen nos: WMD 15789 – 15803

The fauna occurs in firm to hard chalk without flint or significant marl. In places the chalk appears to have been re-cemented into chalkstone. The fauna comprises the brachiopods *Orbirhynchia herberti*, *Terebratulina lata* and a large terebratulid, together with inoceramid bivalves belonging to *Mytiloides* ex gr. *hercynicus* – *subhercynicus*.

**Conclusion:** White Chalk Subgroup, basal New Pit Chalk Formation; Turonian. basal *T. lata* Zone.

- (16) Spoil from badger sets, c. 900 m NW of Fyfield Hill, north of Fyfield, Marlborough, Wiltshire.

1:10 000 SU17SW NGR: SU 14038 70313

Specimen nos: WMD 15804 – 15812

The fauna occurs in mostly soft chalk with local marl fragments up to 10 cm thick. It comprises specimens of the bivalve *Inoceramus cuvieri*.

**Conclusion:** White Chalk Subgroup, ?upper New Pit Chalk Formation; Turonian, ?upper *T. lata* Zone.

- (17) Small exposure of Chalk, 400 m ENE of climatological station, Overton Down, NNW of Fyfield, Wiltshire.

1:10 000 SU17SW NGR: SU 13375 70767

Specimen nos: WMD 15813 – 15818

The fauna is associated with hard chalk containing a significant glauconitised hardground, and comprises the bivalves *Inoceramus cuvieri?* and *Spondylus spinosus*, and the echinoid *Plesiocorys (Sternotaxis) plana*.

**Conclusion:** White Chalk Subgroup, basal Lewes Nodular Chalk (Chalk Rock); Turonian, uppermost *T. lata* Zone or basal *P. (S.) plana* Zone.

- (18) Spoil from badger sets, 350 m ENE of climatological station, NNW of Fyfield, Wiltshire.

1:10 000 SU17SW NGR: SU 13330 70718

Specimen nos: WMD 15819 – 15820

The fauna, in hard, nodular chalk, comprises the bivalves *Mytiloides herbichi* and *Cremnoceramus deformis erectus?*

**Interpretation:** *Mytiloides herbichi* characterises an interval in the upper *P. (S.) plana* Zone and *Cremnoceramus deformis erectus* has its first occurrence in the lower *M. cortestudinarium* Zone (Wood et al., 2004). An horizon in the middle part of the Lewes Nodular Chalk might therefore be inferred.

**Conclusion:** White Chalk Subgroup, middle Lewes Nodular Chalk Formation; late Turonian to Early Coniacian, upper *P. (S.) plana* Zone to basal *M. cortestudinarium* Zone.

- (19) Small exposure of Chalk, 330 m E of climatological station, NNW of Fyfield, Wiltshire.

1:10 000 SU17SW NGR: SU 13470 70646

Specimen nos: WMD 15821 – 15822

The fauna, in firm, blocky, non-nodular chalk, comprises specimens of the inoceramid bivalve *Inoceramus cuvieri*.

**Conclusion:** White Chalk Subgroup, New Pit Chalk Formation; Turonian, *T. lata* Zone.

- (20) Exposure on south side of footpath, c. 700 m NNW of West Nolands Farm, east of Compton Bassett, Wiltshire.

1:10 000 SU07SW NGR: SU 04686 72513

Specimen nos: WMD 15823 – 15854; 15863

The rather sparse and fragmentary fauna occurs in a hard, silty chalk horizon within the Grey Chalk Subgroup. The fauna is as follows:

Gastropoda: gastropod (cast)  
 Ammonoidea: *Schloenbachia varians*  
 Bivalvia: *Entolium orbiculare*  
           *Inoceramus ex gr. crippei?*  
           *Inoceramus tenuis?*  
           *Limaria elongata*  
           oysters  
           *Plicatula inflata*

**Interpretation:** The lithology and style of preservation of the fauna (typically showing traces of pale calcitic shell material) is very suggestive of the Cast Bed just above the base of the *A. rhotomagense* Zone. However, there is very little evidence of the characteristic fauna of the Cast Bed; there are none of the small brachiopods, or *Oxytoma seminudum*, and few records of *Entolium orbiculare* which is characteristically common at this horizon. It is notable that all the shell material is highly fragmented, raising the possibility of an unusually high energy environment, and ecological and preservational conditions that do not favour thin shelled *Entolium*, *Oxytoma* and small brachiopods. The gastropod record is interesting; they are relatively uncommon fossils in the Chalk, and it was for their remains that the Cast Bed was originally named. *Inoceramus tenuis* is most common in the bed immediately underlying the Cast Bed (Tenuis Limestone), so its possible fragmentary record is potential supporting evidence for erosional reworking.

Assignment of the above fauna to the Cast Bed is broadly consistent with the interpretation of nearby exposures of stratigraphically lower intervals (see (21) and (22) below).

**Conclusion:** Grey Chalk Subgroup, ?basal Zig Zag Chalk Formation; ?Middle Cenomanian, ? lower *A. rhotomagense* Zone.

(21) Exposure on N side of footpath, c. 800 m NNW of West Nolands Farm, east of Compton Bassett, Wiltshire.

1:10 000 SU07SW NGR: SU 04659 72511

Specimen nos: WMD 15855 – 15858

The fauna comprises specimens of the bivalve *Inoceramus virgatus*, associated with hard limestone and soft, marly limestone.

**Interpretation:** *Inoceramus virgatus* indicates assignment to the *M. dixoni* Zone and the West Melbury Marly Chalk Formation might be inferred. This zone typically contains an acme of this bivalve, but no evidence here or nearby was found for this event. There could be a palaeoenvironmental explanation for this.

**Conclusion:** Grey Chalk Subgroup, West Melbury Marly Chalk Formation; Lower Cenomanian, *M. dixoni* Zone.

(22) Exposure on N side of footpath, c. 820 m NNW of West Nolands Farm, east of Compton Bassett, Wiltshire.

1:10 000 SU07SW NGR: SU 04609 72527

Specimen nos: WMD 15859 – 15862

The fauna comprises the ammonites *Mantelliceras* and *Hypoturrilites gravesianus*.

**Interpretation:** *Hypoturrilites gravesianus* is characteristic of the *M. mantelli* Zone, and the West Melbury Marly Chalk might be inferred.

**Conclusion:** Grey Chalk Subgroup, West Melbury Marly Chalk Formation; Lower Cenomanian, *M. mantelli* Zone.

(23) Brash at base of slope, west of Kitchen Barrow Hill, 3.47 km NNE of All Cannings Church, 500 m due S of Wansdyke, Wiltshire.

1:10 000 SU06NE NGR: SU 07472 65009

Specimen nos: ARF 2448 – 2550

The fauna comprises inoceramid shell fragments including *Mytiloides* of Early Turonian aspect.

**Conclusion:** White Chalk Subgroup, Holywell Nodular Chalk Formation; Early Turonian, *Mytiloides* spp. Zone.

(24) Echinoid debris from field brash, next to path, 270 m north of Trig point, (294 m), 3.23 km NNW of Stanton St Bernard Church, Wiltshire.

1:10 000 SU06NE NGR: SU 08216 65408

Specimen nos: ARF 2451 – 2453

The fauna comprises a sponge and the echinoids *Micraster normanniae* and *Micraster* sp.

**Conclusion:** White Chalk Subgroup, middle Lewes Nodular Chalk Formation; Turonian or basal Coniacian, *P. (S.) plana* Zone or basal *M. cortestudinarium* Zone.

(25) East Kennett. Brash from south-east corner of field, 1.073 km SSW of East Kennet Church, Wiltshire.

1:10 000 SU16NW NGR: SU 11235 66485

Specimen nos: ARF 2454

The specimen comprises thick inoceramid bivalve shell fragments, including *Cremnoceramus*.

**Interpretation:** Although some of the fragments superficially resemble *Platyceramus* or *Volviceramus*, the high number of curved fragments and quite marked lateral change in thickness of some of the fragments, suggests that they all probably belong to *Cremnoceramus*. The most likely species are either *Cremnoceramus crassus* or *C. deformis*. Both species are strongly geniculated in later growth stages, and these geniculated parts of the valves typically show sparse development of the sharp ribbing that characterises *Cremnoceramus*.

**Conclusion:** White Chalk Subgroup, upper Lewes Nodular Chalk Formation; Coniacian, *M. cortestudinarium* Zone.

(26) West Woods (Keepence Copse). From rabbit burrows on North side of forestry track, 3.02 km SE of Fyfield Church, Wiltshire.

1:10 000 SU16NE NGR: SU 16106 65935

Specimen no.: ARF 2455

The specimen comprises shell fragments of the inoceramid bivalves *Platyceramus* and *?Volviceramus*.

**Conclusion:** White Chalk Subgroup, ?lower Seaford Chalk Formation; ?Coniacian, ?lower *M. coranguinum* Zone.

(27) Field brash by fence, 910 m south of West Overton church, 1.60 km ESE of East Kennett church, Wiltshire.

1:10 000 SU16NW NGR: SU 13304 67237

Specimen no.: ARF 2456

The specimen comprise shell fragments of the bivalves *Platyceramus* and *Volviceramus involutus*, including thick-shelled (>5mm) examples.

**Conclusion:** White Chalk Subgroup, lower Seaford Chalk Formation; Coniacian, lower *M. coranguinum* Zone.

(28) Field brash adjacent to track, 2.16 km ENE of Trig. Point (294 m), 3.22 km NNW of Alton Barnes church, Wiltshire.

1:10 000 SU16NW NGR: SU 10258 65273

Specimen no.: ARF 2457

The specimen comprises inoceramid shell fragments, including moderately thick shelled *Platyceramus*.

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation; ? Coniacian or ?Santonian, ? *M. coranguinum* Zone

(29) Brash from southern edge of field, just north of Wansdyke, Tan Hill, 950 m east of Trig. Point, 2.40 km due North of Stanton St Bernard church, Wiltshire.

1:10 000 SU06SE NGR: SU 09105 64729

Specimen nos: ARF 2458 – 2459

The specimens comprise the echinoid *Micraster* sp and inoceramid bivalve shell fragments, the latter probably representing the relatively thick, strongly curved, distal geniculated valve portions of *Cremonoceramus crassus* or *C. deformis*.

**Interpretation:** See (25) above for discussion of similarity with *Volviceramus*.

**Conclusion:** White Chalk Subgroup, upper Lewes Nodular Chalk Formation; Coniacian, *M. cortestudinarium* Zone.

(30) Brash from field by hedge on top of ridge, Allington Down, 1.08 km NE of Trig. point, 3.18 km SSW of Silbury Hill, Wiltshire.

1:10 000 SU06NE NGR: SU 08768 65585

Specimen no.: ARF 2460

The specimen comprises shell fragments of the inoceramid bivalves *Platyceramus* and *?Volviceramus*.

**Conclusion:** White Chalk Subgroup, ?lower Seaford Chalk Formation; ?Coniacian, ?lower *M. coranguinum* Zone



- (31) Brash from field, just east of fence, and on east side of valley. Allington Down, 1.27 km NE of Trig. point, 3.0 km SSW of Silbury Hill, Wiltshire.

1:10 000 SU06NE NGR: SU 08805 65781

Specimen no.: ARF 2461

The specimen comprises inoceramid shell fragments, including moderately thick shelled *Platyceramus*.

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation; ?Coniacian or ?Santonian, ?*M. coranguinum* Zone

- (32) Brash from field, next to path on top of ridge, 705 m NE of trig point, 852 m NW of Tan Hill, Wiltshire.

1:10 000 SU06NE NGR: SU 08496 65315

Specimen nos: ARF 2462 – 2463

The specimens comprise a possible distal valve fragment of *Cremnoceramus* (very thick shelled), and the echinoid *Micraster*.

**Conclusion:** White Chalk Subgroup, ?upper Lewes Nodular Chalk; ?Coniacian, ?*M. cortestudinarium* Zone.

- (33) Brash from edge of track on ridge, 1.16 km due north of Trig. point and 3.14 km SSE of Silbury Hill, Wiltshire.

1:10 000 SU06NE NGR: SU 08361 65834

Specimen no.: ARF 2464

The fauna comprises inoceramid bivalve shell fragments, including *Cremnoceramus*?

**Conclusion:** White Chalk Subgroup, ?Lewes Nodular Chalk Formation (upper part); ?Coniacian, ?*M. cortestudinarium* Zone.

- (34) Brash from edge of field. Beckhampton Plantation; 2.20 km SSE of A4/A361 interchange, 2.0 km SSW of Silbury Hill, Wiltshire.

1:10 000 SU06NE NGR: SU 09035 66757

Specimen no.: ARF 2465

The fauna mainly comprises inoceramid bivalve shell fragments, including *Cremnoceramus*.

**Conclusion:** White Chalk Subgroup, Lewes Nodular Chalk Formation (upper part); Coniacian, *M. cortestudinarium* Zone.

- (35) Fossil in brash at base of slope, Thorn Hill, 1.455 km due S of East Kennet church, 3.05 km SE of Silbury Hill, Wiltshire.

1:10 000 SU16NW NGR: SU 11722 66008

Specimen nos: ARF 2466

The fauna comprises shell fragments of the inoceramid bivalve *Platyceramus*, including moderately thick shelled examples.

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation; Coniacian or younger, ?*M. coranguinum* Zone.

(36) Brash from field, just east of The Belt, 740 m SSE of West Overton church, 1.58 km SW of Fyfield Church, Wiltshire.

1:10 000 SU16NW NGR: SU 13785 67512

Specimen no.: ARF 2467

The fauna comprises shell fragments of the inoceramid bivalve *Platyceramus*.

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation; Coniacian or younger, ?*M. coranguinum* Zone.

(37) Field brash from southeast corner of the field, 1.12 km SE of West Overton church, 1.44 km SW of Fyfield church, Wiltshire.

1:10 000 SU16NW NGR: SU 14212 67386

Specimen no.: ARF 2468

The fauna comprises inoceramid shell fragments of uncertain taxonomic affinity.

**Conclusion:** None possible.

(38) Fossil locality, on hill south of Stanmore Barn, 2.65 km ESE of West Overton church, 1.71 km SE of Fyfield church, Wiltshire.

1:10 000 SU16NE NGR: SU 15920 67359

Specimen no.: ARF 2469

The fauna comprises inoceramid bivalve shell fragments, including *Platyceramus?* and *?Volvicceramus involutus*.

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation (lower part); ?Coniacian, ?*M. coranguinum* Zone (lower part).

(39) Brash from edge of field, on east side of Clatford Bottom (Marlborough Downs). 1.4 km NE of Fyfield church, 2.4 km NW of Preshute church, Wiltshire.

1:10 000 SU16NE NGR: SU 15815 69702

Specimen no.: ARF 2470

The fauna comprises inoceramid bivalve shell fragments, including *Cremnoceramus*. Some shell fragments are thick and strongly curved, but lack the distinctive *Cremnoceramus* ornament.

**Interpretation:** The fauna can probably be assigned to the *M. cortestudinarium* Zone, the thick and strongly curved shell fragments probably representing the distal valve portions of taxa such as *C. crassus* or *C. deformis*.

**Conclusion:** White Chalk Subgroup, upper Lewes Nodular Chalk Formation; Coniacian, *M. cortestudinarium* Zone.

(40) Field brash by track, by track junction, just north of Wansdyke, 455 m north of Trig. point (294 m), 2.91 km NNW of Stanton St Bernard church, Wiltshire.

1:10 000 SU06NE NGR: SU 08325 65116

Specimen no.: ARF 2471

The fauna comprises inoceramid bivalve shell fragments, including *Cremnoceramus*.

**Conclusion:** White Chalk Subgroup, ?upper Lewes Nodular Chalk Formation; Coniacian, ?upper *M. cortestudinarium* Zone

(41) Field brash on east side of field, just west of track, 960 m SSW of East Kennet church, Wiltshire.

1:10 000 SU16NW NGR: SU 11301 66588

Specimen no.: ARF 2472

The fauna comprises inoceramid bivalve shell fragments, including *Platyceramus*?

**Conclusion:** White Chalk Subgroup, ?Seaford Chalk Formation; ?Coniacian or younger, ?*M. coranguinum* Zone or younger.

(42) 1880 m NE of Yatesbury, 434m NW of Monkton Field, Wiltshire.

1:10 000 SU07SE NGR: SU 08136 72951

Specimen nos: JOB 163 – 164

The specimens comprise part and counter-part of the heteromorph ammonite *Scaphites obliquus*.

**Interpretation:** *Scaphites obliquus* is common in the Lower and Middle Cenomanian (Wright & Kennedy, 1996) Grey Chalk Subgroup, in strata equivalent to both the West Melbury Marly Chalk and overlying Zig Zag Chalk Formation.

**Conclusion:** Grey Chalk Subgroup; Lower or Middle Cenomanian (rarely Upper Cenomanian)

(43) 720 m West of Rutlands Farm, SE of Windmill Hill, Wiltshire.

1:10 000 SU07SE NGR: SU 09468 70619

Specimen nos: JOB 165

The specimen is an oyster.

**Interpretation:** The specimen does not look typical of the Chalk Group, and the preservation suggests that it may post-date the Chalk Group.

**Conclusion:** None possible.

(44) 1200 m West of East Farm, adjacent to open access land of Windmill Hill, Wiltshire.

1:10 000 SU07SE NGR: SU 08903 71301

Specimen no.: JOB 166 – 167

The specimens are of shelly chalk, including *Mytiloides*? of Early Turonian aspect.

**Conclusion:** White Chalk Subgroup, ?Holywell Nodular Chalk Formation; ?Early Turonian, ?*Mytiloides* spp. Zone.

(45) 380 m east of Stanmore Copse, NW of Berwick Bassett, Wiltshire.

1:10 000 SU07NE NGR: SU 08108 75390

Specimen no.: JOB 168

The specimen is a small terebratulid brachiopod.

**Interpretation:** The specimen is biozonally undiagnostic. The field horizon is tentatively suggested as Cast Bed, at the base of the Zig Zag Chalk Formation. The Cast Bed is characterised by small brachiopods, but the above specimen does not closely resemble any of the typical species.

**Conclusion:** None possible.

(46) 240 m SSW of Berwick House Farm, Berwick Bassett, Wiltshire.

1:10 000 SU07SE NGR: SU 09792 73056

Specimen no.: JOB 169

The specimen is the inoceramid bivalve *Inoceramus pictus*.

**Interpretation:** *Inoceramus pictus* ranges through the *A. jukesbrownei*, *C. guerangeri*, *M. geslinianum* and *N. juddii* zones of the Middle and Upper Cenomanian.

**Conclusion:** Grey Chalk Subgroup or basal White Chalk Subgroup, Zig Zag Chalk Formation or basal Holywell Nodular Chalk Formation; Middle or Upper Cenomanian, *A. jukesbrownei*, *C. guerangeri*, *M. geslinianum* or *N. juddii* zones

(47) 130 m SSW of Berwick House Farm, Berwick Bassett, Wiltshire.

1:10 000 SU07SE NGR: SU 09789 73156

Specimen no.: JOB 170

The specimen is a small rhynchonellid brachiopod, possibly *Orbirhynchia*.

**Interpretation:** *Orbirhynchia* is quite long ranging in the Chalk Group. The field assignment is Holywell Nodular Chalk, in which *Orbirhynchia* is locally abundant.

**Conclusion:** None possible.

(48) 300 m SE of Wick Bottom Barn, adjacent to footpath, Wiltshire.

1:10 000 SU17SW NGR: SU 14970 73006

Specimen no.: JOB 253

The specimen is a shell fragment of *Mytiloides?* in hard chalk.

**Interpretation:** The field assignment is Holywell Nodular Chalk in which *Mytiloides* is locally abundant. The above specimen is too fragmentary for unequivocal identification. *Mytiloides* also occurs in the Late Turonian Lewes Nodular Chalk.

**Conclusion:** None possible, but the tentative identification is compatible with the field assignment.

(49) 450 m south of buildings at Preshute Down, Marlborough, Wiltshire.

1:10 000 SU17SW NGR: SU 14080 74200

Specimen no.: JOB 254

The specimen is the external mould of a sponge, preserved in very hard chalk containing a small, bright green glauconitic pebble.

**Interpretation:** The specimen is biozonally undiagnostic, but the association of hard chalk, sponge remains and glauconitised pebbles strongly suggests the lower part of the Lewes Nodular Chalk (upper *T. lata* Zone or basal *P. (S.) plana* Zone, which is compatible with the field assignment.

**Conclusion:** None possible, but compatible with field assignment.

(50) 210m S of Basset Down Farm, on southern edge of Basset Down Wood, Wiltshire.

1:10 000 SU17NW NGR: SU 11337 79788

Specimen nos: JOB 255 – 256

The specimens are the inoceramid bivalve *Inoceramus pictus* and the ammonite *Calycoceras (Gentoniceras)* sp.

**Interpretation:** The co-occurrence of the above species indicates assignment to the Middle or possibly the lower part of the Upper Cenomanian. Since *Inoceramus pictus* does not range below the *A. jukesbrownei* Zone, in the higher part of the Middle Cenomanian, a level in the Zig Zag Chalk might be inferred.

**Conclusion:** Grey Chalk Subgroup, Zig Zag Chalk Formation; Middle or Upper Cenomanian, *A. jukesbrownei* Zone or *C. guerangeri* Zone.

(51) 450 m SSE of Barbury Barn, Wiltshire.

1:10 000 SU17SW NGR: SU 14841 74785

Specimen no.: JOB 257

The specimen is the ammonite *Collignonicerias woollgari*.

**Conclusion:** White Chalk Subgroup, New Pit Chalk Formation; Turonian, *T. lata* Zone.

(52) Adjacent to Delling Copse, midway along SE side, Wiltshire.

1:10 000 SU17SW NGR: SU 13239 71007

Specimen nos: JOB 258 – 261

The fauna includes as possible specimen of the inoceramid bivalve *Cremnoceramus waltersdorfensis*.

**Conclusion:** White Chalk Subgroup, ?middle Lewes Nodular Chalk Formation; ?Late Turonian or ?Early Coniacian, ?upper *P. (S.) plana* Zone or ?lower *M. cortestudinarium* Zone.

(53) On SW flank of Barbury Castle hill, Wiltshire.

1:10 000 SU17NW NGR: SU 14757 76113

Specimen nos: JOB 262 – 263

The specimens comprise a burrow and the inoceramid bivalve *Inoceramus cuvieri*?

**Conclusion:** White Chalk Subgroup, ?New Pit Chalk Formation or ?lower Lewes Nodular Chalk Formation; ?Turonian, ?*T. lata* Zone.

(54) 140 m from junction between Herepath or Green Street and footpath to CP near Redpost Farm, Clatford Down, Wiltshire.

1:10 000 SU17SW NGR: SU 14516 71382

Specimen nos: JOB 264 – 266

The specimens comprise inoceramid shell fragments of uncertain taxonomic affinity.

**Conclusion:** None possible.

(55) On footpath 225m east of Triangle Wood, N of Cherhill, Wiltshire.

1:10 000 SU07SW NGR: SU 04000 70927

Specimen no.: JOB 267

The specimen is possibly the small pectinacean bivalve *Lyropecten* [*Aequipecten*] *arlesiensis*.

**Interpretation:** *Lyropecten* [*Aequipecten*] *arlesiensis* has a very restricted horizon of occurrence within the *C. inerme* Zone, from which a level near the top of the West Melbury Marly Chalk might be inferred.

**Conclusion:** Grey Chalk Subgroup, ?upper West Melbury Marly Chalk Formation; ?basal Middle Cenomanian, ?*C. inerme* Zone.

(56) 600 m ESE of buildings at Preshute Down, Marlborough, Wiltshire.

1:10 000 SU17SW NGR: SU 14700 74490

Specimen no.: JOB 268 – 281

The fauna comprises shell fragments of the bivalve *Mytiloides*, of Early Turonian aspect, and the brachiopod *Orbirhynchia* sp.

**Conclusion:** White Chalk Subgroup, Holywell Nodular Chalk Formation; Early Turonian, *Mytiloides* spp. Zone

(57) 525m NNW of Horslip Bridge, 1425m WNW of Avebury Manor, Wiltshire.

1:10 000 SU07SE NGR: SU 08665 70642

Specimen no.: JOB 282

The specimen is the brachiopod *Orbirhynchia* sp.

**Interpretation:** *Orbirhynchia* is quite long ranging in the Chalk Group. The field assignment is Holywell Nodular Chalk, in which *Orbirhynchia* is locally abundant.

**Conclusion:** None possible.

(58) 1590 m NW of Avebury Manor, S of open access land on Windmill Hill, Wiltshire.

1:10 000 SU07SE NGR: SU 08760 71080

Specimen nos: JOB 283 – 286

The specimens comprise inoceramid bivalve shell fragments, questionably identified as *Mytiloides*, and the brachiopod *Orbirhynchia cuvieri*?

**Interpretation:** *Orbirhynchia cuvieri* is most common in the *Mytiloides* spp. Zone, associated with common remains of *Mytiloides*.

**Conclusion:** White Chalk Subgroup, ?Holywell Nodular Chalk Formation; ?Turonian, ?*Mytioloides* spp. Zone.

(59) 4-5 m section in Chalk pit below Kitchen Barrow, 800 m NE of Harepath Farm, Horton, Wilts.

1:10 000 SU06SE NGR: SU 06589 64714

Specimen nos: PMH 5394 – 5400

The fauna comprises specimens of terebratulid brachiopods (x4), the oyster *Pycnodonte vesiculare* and a crushed echinoid.

**Interpretation:** Without geological context, the fauna is biozonally undiagnostic. The field assignment is Zig Zag Chalk Formation, within which terebratulid brachiopods are mainly common in the lower to middle part (*A. rhotomagense* Zone, *T. acutus* Subzone).

**Conclusion:** None possible, but compatible with a level in the lower to middle Zig Zag Chalk Formation.

(60) Small trackside exposure below Kitchen Barrow Down, 1000 m NE Harepath Farm, Horton, Wilts.

1:10 000 SU06SE NGR: SU 06857 64782

Specimen nos: PMH 5401

The specimen is the inoceramid bivalve *Inoceramus pictus*.

**Interpretation:** *Inoceramus pictus* ranges from the upper Middle Cenomanian (*A. jukesbrownei* Zone) to the *N. juddii* Zone at the top of the Middle Cenomanian, spanning the boundary of the Zig Zag and Holywell Nodular Chalk formations. The field assignment is Zig Zag Chalk Formation.

**Conclusion:** Upper Grey Chalk Subgroup or basal White Chalk Subgroup, Zig Zag Chalk Formation or basal Holywell Nodular Chalk Formation; Middle Cenomanian, Upper Cenomanian or basal Turonian, *A. jukesbrownei* Zone, *C. guerangeri* Zone, *M. geslinianum* Zone or *N. juddii* Zone.

(61) Surface brash, Cilfford's Hill, All Cannings, Wilts.

1:10 000 SU06SE NGR: SU 08383 63950

Specimen nos: PMH 5402 – 5404

The fauna comprises specimens of the inoceramid bivalve ?*Inoceramus cuvieri*.

**Conclusion:** White Chalk Subgroup, ?upper New Pit Chalk or ?basal Lewes Nodular Chalk; ?Turonian, ?*T. lata* Zone.

(62) Degraded quarry on SE face of Walker's Hill, Alton, Wilts.

1:10 000 SU16SW NGR: SU 11450 63380

Specimen nos: PMH 5405 – 5408

The fauna is as follows:

Brachiopoda: *Orbirhynchia cuvieri*? (x2)

terebratulid

Bivalvia: *Mytiloides* sp.

The specimens occur in hard chalk with common, small, broken-up shell fragments.

**Conclusion:** White Chalk Subgroup, ?Holywell Nodular Chalk; ?Early Turonian, ?*Mytiloides* spp. Zone

(63) Old chalk pit 180 m NW of Elm Tree Farm, near Clatford, Wiltshire.

1:10 000 SU16NE

NGR: SU 15745 69067

No macrofauna was collected from this locality, which exposes a succession through the Chalk Rock at the base of the Lewes Nodular Chalk Formation. At least four mineralised hardgrounds occur (Fig. 7), the lowest of which is up to 0.5 m thick, and inferred to represent the Ogbourne Hardground. There is no evidence for the Fognam Marl which sometimes occurs in the nodular chalk succession above the Ogbourne Hardground.

**Conclusion:** White Chalk Subgroup, basal Lewes Nodular Chalk.



## Appendix 1 – Author citations for fossil species

*Collignonicerias woollgari* (Mantell, 1822)  
*Cremonoceramus crassus* (Petrascheck, 1903)  
*Cremonoceramus deformis* (Meek, 1872)  
*Cremonoceramus deformis erectus* (Meek, 1877)  
*Cremonoceramus denselamellatus* (Kotsyubinsky, 1965)  
*Cremonoceramus waltersdorfensis* (Andert, 1911)  
*Echinocorys scutata gravesi* (Desor, 1847)  
*Hypoturritiles gravesianus* (d'Orbigny, 1842)  
*Inoceramus crippsi* Mantell, 1822  
*Inoceramus cuvieri* J Sowerby, 1814  
*Inoceramus virgatus* Schlüter, 1877  
*Inoceramus pictus* J de C Sowerby, 1829  
*Inoceramus tenuis* Mantell, 1822  
*Limaria elongata* (J de C Sowerby, 1827)  
*Lyropecten* [*Aequipecten*] *arlesiensis* (Woods, 1902)  
*Micraster coranguinum* (Leske, 1778)  
*Micraster* (*Isomicraster*) *gibbus* (Lamarck, 1816)  
*Micraster normanniae* Bucaille, 1883  
*Micraster turonensis* (Bayle, 1878)  
*Mytiloides herbichi* (Atabekian, 1968)  
*Mytiloides hercynicus* (Petrascheck, 1903)  
*Mytiloides subhercynicus* (Seitz, 1934)  
*Orbirhynchia cuvieri* (d'Orbigny, 1847)  
*Orbirhynchia herberti* Pettitt, 1954  
*Oxytoma seminudum* (Dames, 1874)  
*Plesiocorys* (*Plesiocorys*) *placenta* (Agassiz, 1840)  
*Plesiocorys* (*Sternotaxis*) *plana* (Mantell, 1822)  
*Plicatula inflata* J de C Sowerby, 1823  
*Pycnodonte* (*Phygraea*) *vesiculare* (Lamarck, 1806)  
*Scaphites obliquus* J Sowerby, 1813  
*Schloenbachia varians* (J Sowerby, 1817)  
*Spondylus spinosus* (J Sowerby, 1814)

*Terebratulina lata* Etheridge, 1881

*Volviceramus involutus* (J de C Sowerby, 1828)

## References

British Geological Survey holds most of the references listed below, and copies may be obtained via the library service subject to copyright legislation (contact [libuser@bgs.ac.uk](mailto:libuser@bgs.ac.uk) for details). The library catalogue is available at: <http://geolib.bgs.ac.uk>.

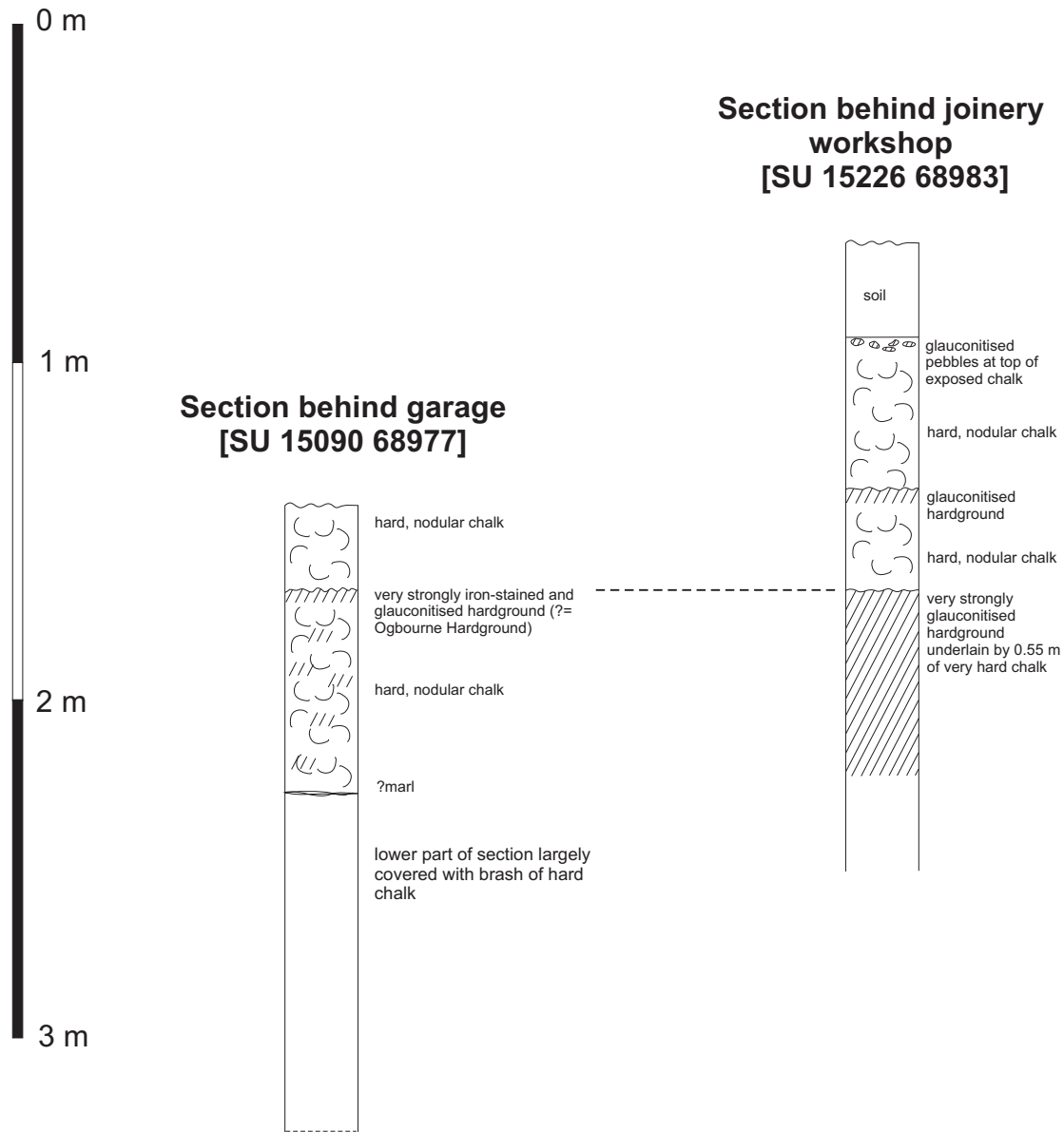
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WOOD, C J, WALASZCZYK, I, MORTIMORE, R N, and WOODS, M A. 2004. New observations on the inoceramid biostratigraphy of the higher part of the Upper Turonian and the Turonian – Coniacian boundary transition in Poland, Germany and the UK. *Acta Geologica Polonica*, Vol. 54, 541 – 549.

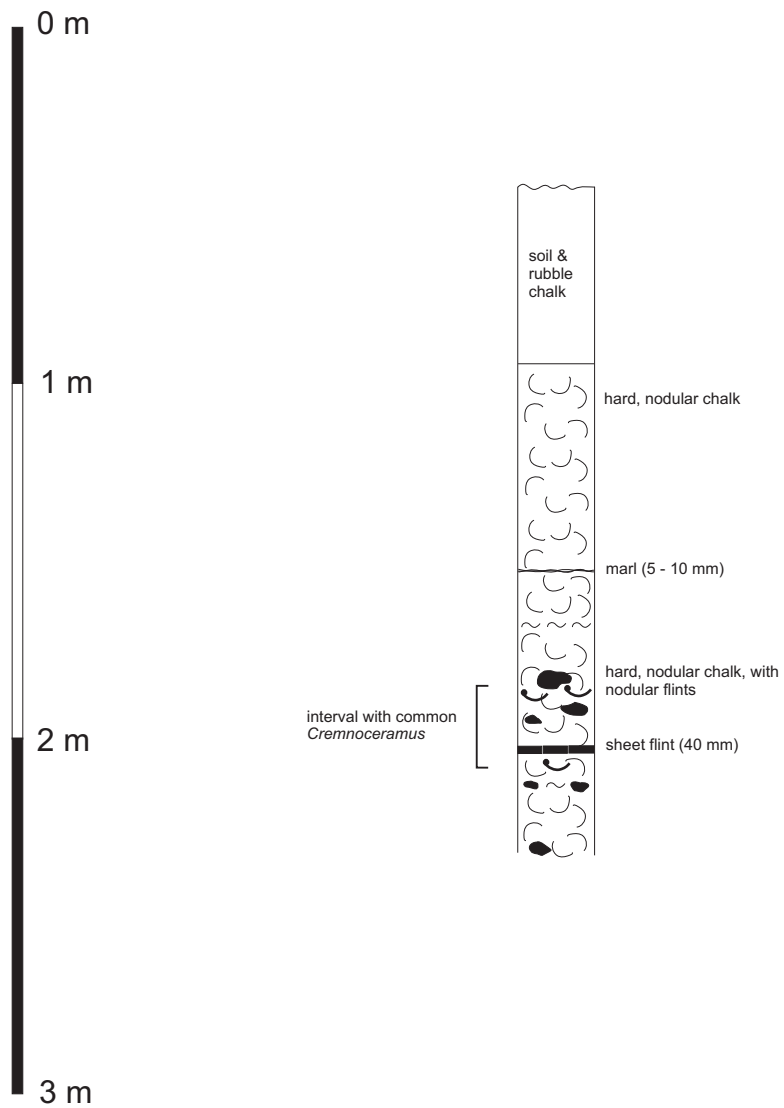
WRIGHT, C W, and KENNEDY, W J. 1996. The Ammonoidea of the Lower Chalk. Part 5. *Monograph of the Palaeontographical Society London*: 320-403, pls 95-124. (Publ. No. 601, part of Vol. 150 for 1996).

STAGE	BIOZONATION		Traditional Subdivisions	Subgroup	Formations/ Members			
SANTONIAN	<i>M. coranguinum</i>		Upper Chalk	W h i t e	Seaford Chalk			
	CONIACIAN	<i>M. cortestudinarium</i>			Lewes Nodular Chalk (Chalk Rock)			
TURONIAN	<i>P. (S.) plana</i>		Middle Chalk	h a l k	New Pit Chalk			
	<i>T. lata</i>				Holywell Nodular Chalk			
	<i>Mytiloides</i> spp.				(Plenus Marls)			
CENOMANIAN	<i>N. juddii</i>		Lower Chalk	Grey Chalk	Zig Zag Chalk			
	<i>M. geslinianum</i>							
	<i>C. guerangeri</i>		Chalk Marl		Grey Chalk	West Melbury Marly Chalk (Glaucinitic Marl)		
	<i>A. jukesbrownei</i>							
	<i>A. rhotomagense</i>	<i>T. acutus</i>	Grey Chalk			Grey Chalk		
		<i>T. costatus</i>						
	<i>C. inerme</i>		Chalk Marl				Grey Chalk	
	<i>M. dixoni</i>							
	<i>M. mantelli</i>	<i>M. saxbii</i>	Chalk Marl					Grey Chalk
		<i>S. schluteri</i>						
<i>N. carcitanense</i>								

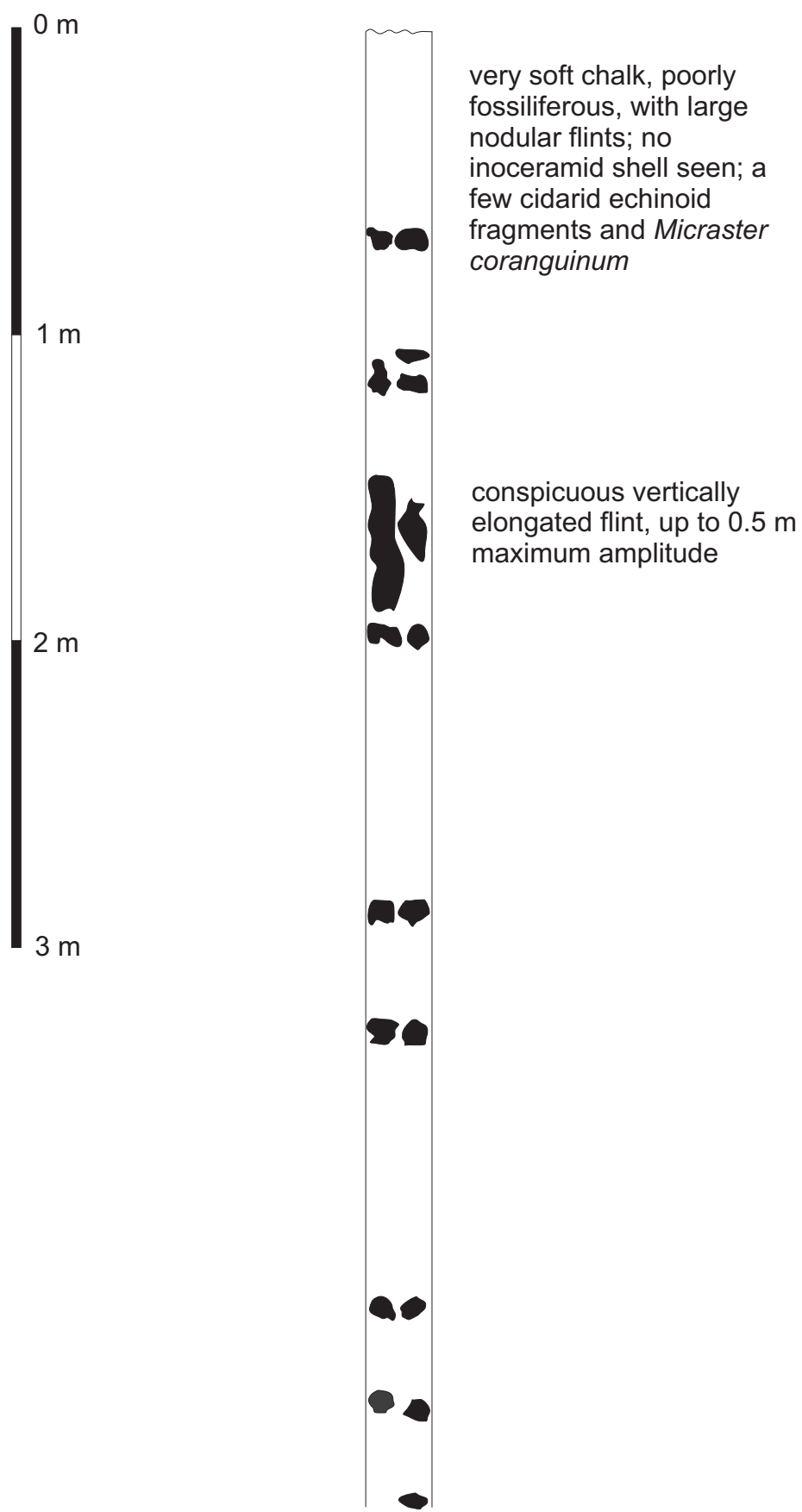
Figure 1. The stratigraphy of the Chalk Group referred to in this report



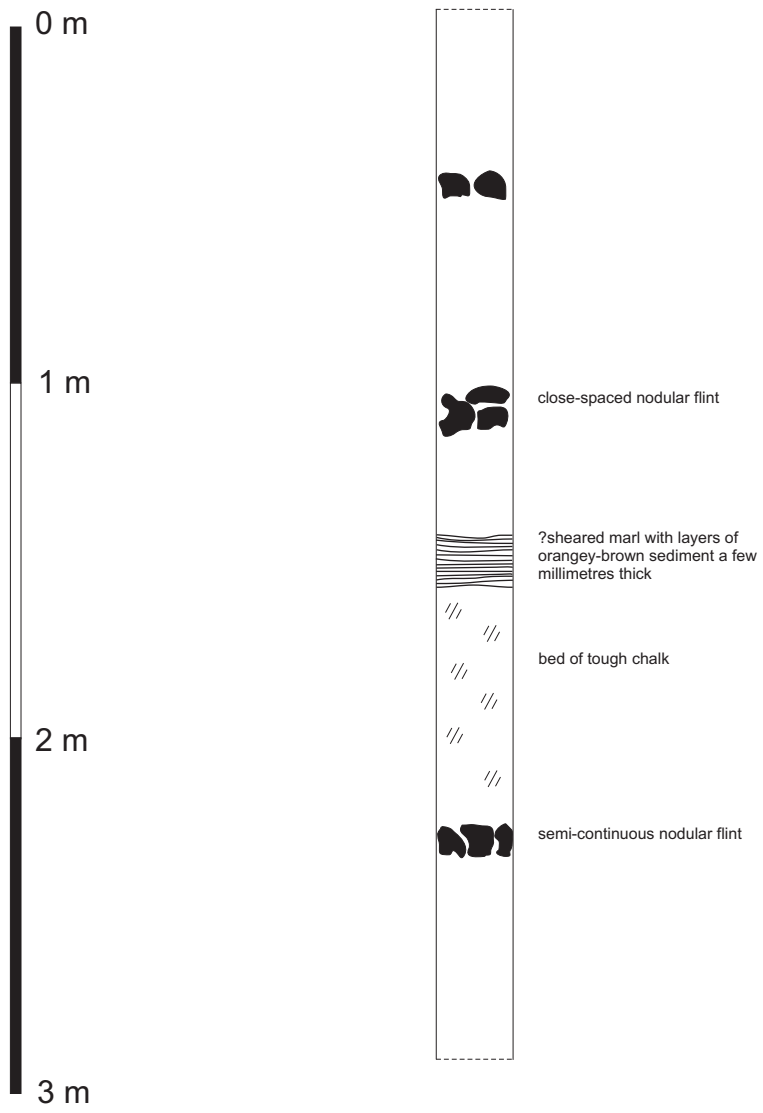
**Figure 2.** The chalk succession seen at Fyfield (locality (5) of report).



**Figure 3.** The chalk succession in valley bottom west of East Kennett Long Barrow ((9) of report).

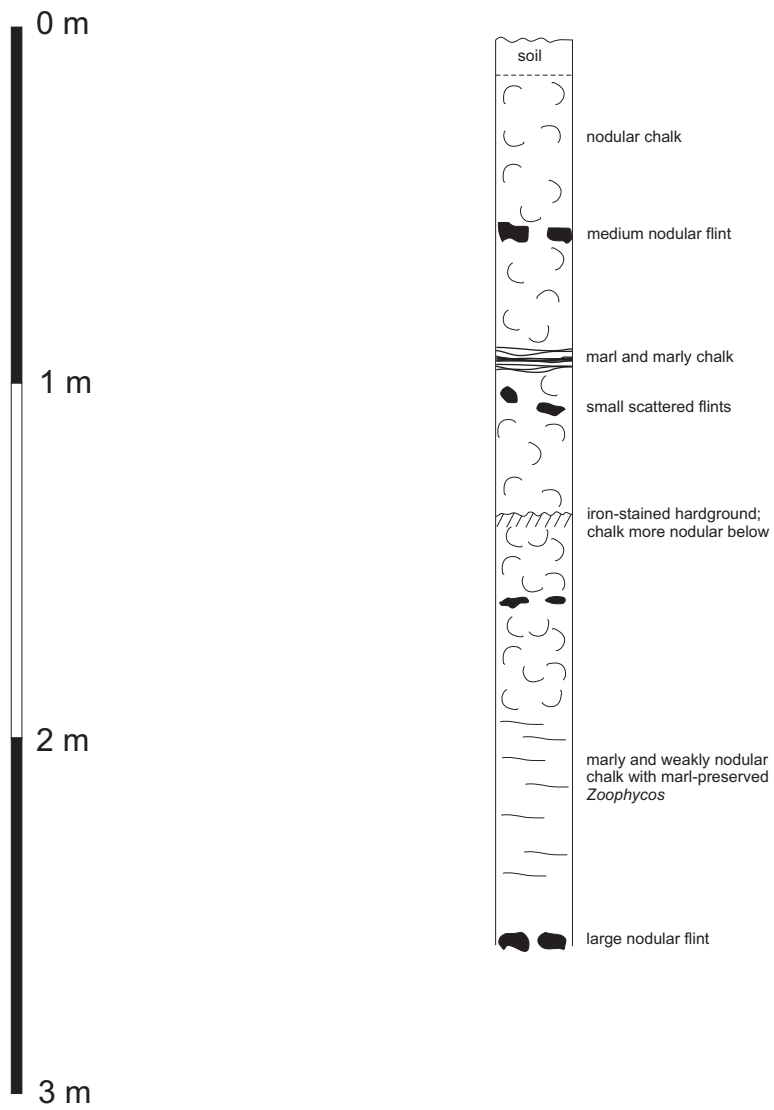


**Figure 4.** The chalk succession seen near Great Lodge Farm ((10) of report).

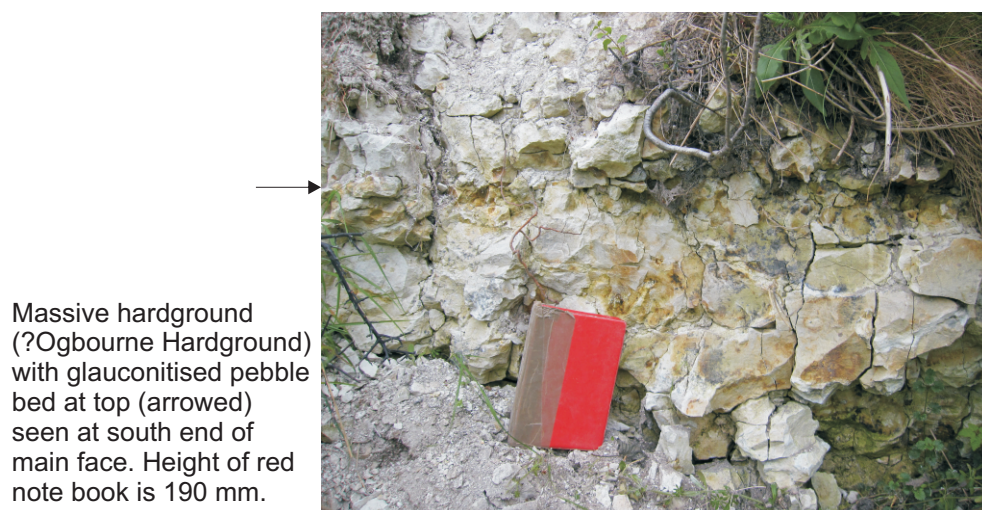
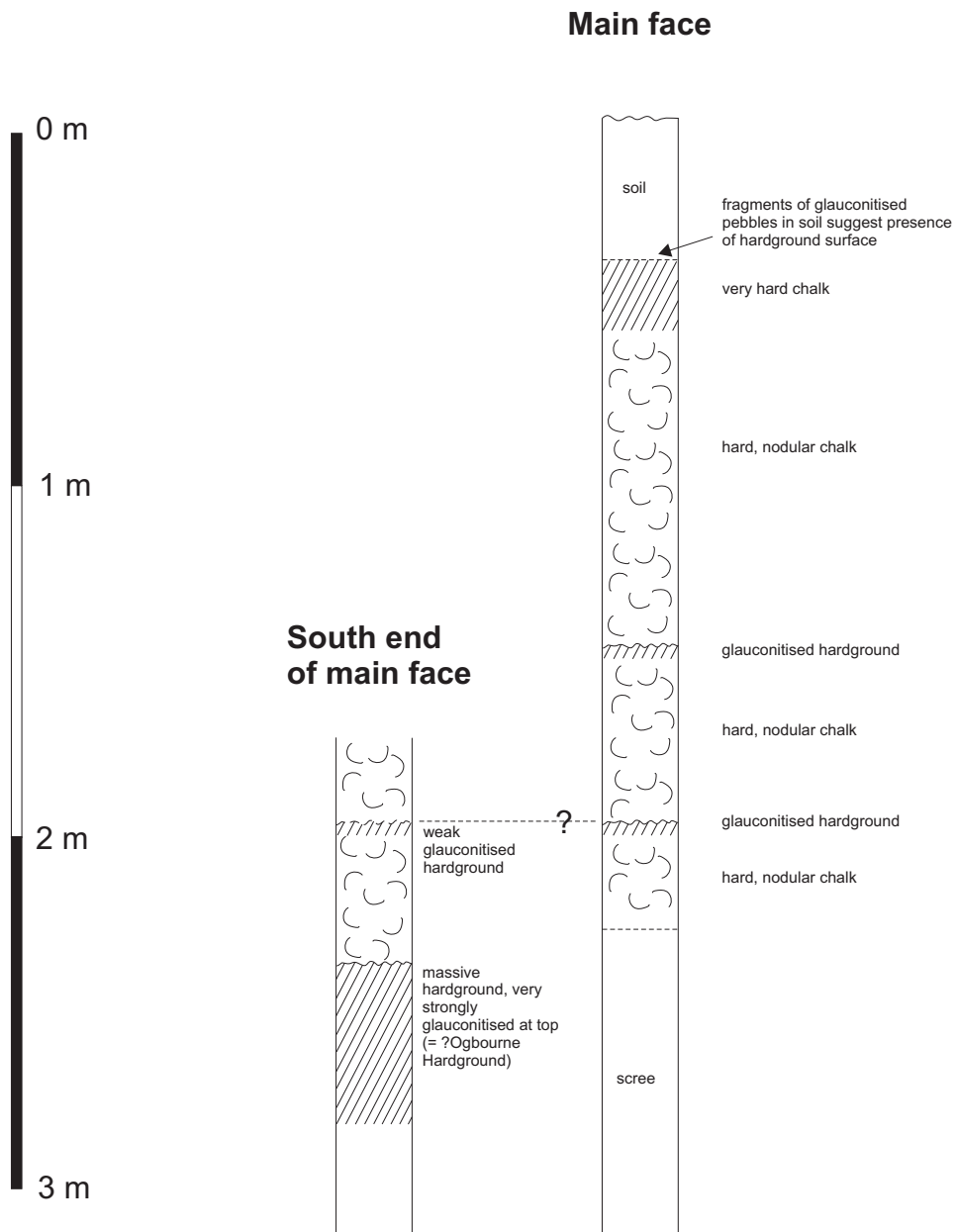


**Figure 5.** The chalk succession seen at the south portal of the tunnel on the abandoned railway line south of Marlborough ((11) of report).





**Figure 6.** The chalk succession seen near Manton House Farm ((14) of report).



**Figure 7.** The chalk succession seen near Elm Tree Farm ((63) of report).