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A report on the palynological dating of
coal samples from certain archaeological
sites in England

by

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Sheffield.

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Introduction

The examination of palynological residues derived from coal-spores, pollen, cuticles etc., - can often indicate the geological age of the coal sample. In certain instances identification of the actual seam is possible, but generally a group of seams and perhaps their geographical occurrence is indicated as the likely source.

The present investigation is based on forty four coal samples that have been obtained from various sites throughout England. In some cases a single sample per site was processed whilst in other instances up to seven different samples i.e. Wanborough, were examined.

The majority (39) of the samples prepared were found to contain spores and pollen in a good state of preservation which enabled an adequate taxonomic treatment. Five samples were found to be barren and in some of these cases partial burning is probably the cause of pollen destruction.

Certain sites i.e. Cannington have provided mainly barren samples which probably reflects the original high rank of the coal and in turn provides a pointer to a possible geographical occurrence.

The preparation technique adopted is a standard method using Schulze solution (3 parts concentrated nitric acid to 1 part potassium chlorate) in order to oxidise the ulmin-resin content of the coal. The soluble oxidation products were removed by a 2% solution of potassium hydroxide and the residues washed with distilled water. Permanent slides were prepared using pipetted drops of residue, a dispersal agent cellosize and Canada Balsam as the mounting medium.

Data obtained by a microscopical examination of the slides is given in full in Appendix A and summarised in Table 1.

Conclusions.

The main conclusions are essentially relating to the geological aspects of the samples and further consideration of sites and probable source relationships should be made in collaboration with an archaeological specialist.

1. All coal samples examined were derived from the Coal Measures of the Upper Carboniferous and no instances of Millstone Grit or Lower Carboniferous coals have been found.

2. Where more than one sample has been examined from a particular site, all the evidence points to a single source and probably a limited range of coal seams.

3. Several mining centres would appear to have been established and these provided for a fairly wide distribution area. In particular the Forest of Dean, the South Derbyshire, the Warwickshire and the Bristol-Vobster Coalfields were probably scenes of considerable activity.

4. Based on the relative geographical positions of sites and the nearest suitable outcrops, transportation distance vary between a few miles to as much as 85 miles.

5. The quality of the coals varies from comparatively fresh durains and clarains to weathered fusainous a shaley material. The good quality of some samples would testify to fairly deep working faces in the coal seams.

References

- Smith, A.H.V. and Butterworth, M.A. 1967. Miospores in the coal seams of the Carboniferous in Great Britain. Spec. Pap. Palaeontology. No. 1.
- Webster, G. 1955. A note on the use of coal in Roman Britain. Antiquaries Jour. XXV 3,4 pp. 199-217.
- Map of Roman Britain. 1956. Ordnance Survey, Chessington, Surrey. H.M.S.O.

APPENDIX A

Details of coal types, palynological assemblages,
their geological age and nearest suitable outcrop
source.

Locality Reference: Wanborough

Seven coal samples were examined from this locality and their individual references are as follows:-

- i) 69/A XVII - (1)
- ii) 69/C XII - (1)
- iii) 69/B II - (1)
- iv) 69/E IV - (2)
- v) 69/D VIII - (1)
- vi) 67/Co1 - 4599
- vii) 67/Co2 - 5300

Coal Type: All samples were Clarain/Durain interlayered.

Palynological Assemblages:

The quality of the assemblages varied from those in which abundant well preserved spores occurred (i.e. Co2-5300) to others in which the variety was limited to a few species (i.e. 69/C XII-(1)). The age of the samples is essentially the same and they may originate from the same coal seam or perhaps closely spaced seams. The species recorded in the individual samples are shown below in Table 2.

Stratigraphic Age:

Several distinguishing features add up to indicate that these samples were derived from some of the youngest Carboniferous coal seams known in Britain.

Firstly, there is an abundance of ornamented monolet spores of the genera Punctatosporites and Thymospora.

Secondly, the occurrence of Schopfites dimorphus which not

Table 2: Spore species recorded in Coal samples from Monborough

Spore species	Sample references						
	A VII	C XII	BII	B IV	D VIII	Co1-4599	Co2-5500
<i>Alatisporites trialatus</i>	X		X		X	X	X
<i>Calamospora pallida</i>		X	X	X	X	X	X
<i>C. microrugosa</i>			X		X		X
<i>Cyclogranisporites</i> sp.		X					
<i>Endosporites globiformis</i>			X	X		X	
<i>E. zonalis</i>			X	X			
<i>Florinites mediapudens</i>	X		X		X	X	
<i>Laevigatosporites vulgaris</i>		X	X		X	X	
<i>L. minor</i>	X	X	X	X		X	
<i>Latosporites latus</i>	X	X	X		X	X	
<i>L. globosus</i>		X					
<i>Lycospora pusilla</i>			X	X	X	X	
<i>L. orbicula</i>							
<i>Microreticulatisporites nobiliss</i>			X				
<i>Punctatosporites granifer</i>	X		X	X	X	X	
<i>P. oculus</i>			X			X	
<i>P. rotundus</i>	X		X	X	X	X	
<i>Punctatisporites cf obesus</i>		X					
<i>Raistrickia aculeata</i>			X		X		
<i>R. saetosa</i>		X	X	X			
<i>Schopfites dimorphus</i>				X			
<i>Thymospora pseudotheissenii</i>							
<i>T. obscura</i>		X	X	X	X	X	
<i>Triquitrites bransonii</i>			X	X	X	X	X
<i>Vestispora laevigata</i>		X	X		X		X

only occurs in the youngest coal seams of the Coal Measures but also has restricted geographical occurrence.

Finally other distinctive species include Vestispora laevigata, Triquitrites bransonii, Latosporites spp. and Alatisporites trialatus.

These assemblages are clearly Westphalian D in age and are restricted to the Forest of Dean area. The most likely seams would be the Coleford High Delf or Woorgreen.

Locality Reference: Barnack BIII/u/ag

Coal Type: Durain

Palynological Assemblage:

Apiculatisporis spinosaetosus

Calamospora microrugosa

Cristatisporites comexus

Densosporites anulatus

D. sphaerotriangularis

Florinites mediapudens

F. pumicosus

Laevigatosporites vulgaris

Lycospora pusilla

L. cf. orbicula

Punctatisporites sinuatus

P. minutus

Raistrickia fulva

Savitrisporites nux

Schulzospora rara

Schulzospora rara
Secarisporites lobatus
Vestispora costata
V. tortuosa.

Stratigraphic Age:

The assemblage is distinguished by a high frequency of the monolete genus Laevigatosporites and the presence together of species of the genera Vestispora and Schulzospora. The assemblage is clearly of Carboniferous age and these particular features indicate the coal was obtained from the upper part of the Lower Coal Measures i.e. upper Westphalian A.

Possible Source:

The nearest outcrop of rocks of this age is to be found in the South Derbyshire and Leicestershire Coalfield in the region of Swadlincote-Ashby. The most likely seam would be the Little Woodfield or Main Coal Rider.

Locality Reference: Lechlade 9624

Coal Type: Clarain

Palynological Assemblage:

Apiculatisporis abditus
Calamospora parva
C. microrugosa
Cirratriradites annuliformis
Crassispora kosankei
Florinites mediapudens
F. millotti

Laevigatosporites minor
L. vulgaris
Mooreisporites inusitatus
Punctatisporites obesus
Punctatosporites granifer
P. oculus
P. rotundus
Raistrickia aculeata
Schipfites dimorphus
Thymospora obscura
Triquitrites bransonii
Vestispora laevigata

Stratigraphic Age:

A very rich and diagnostic assemblage which indicates a coal origin in the lower part of Westphalian D measures of the Forest of Dean. Probably the Woorgreen or Coleford High Delf.

Locality Reference: Lechlade 9269

Coal Type: Clarain

Palynological Assemblage:

Apiculatisporis sp.
Calamospora saariana
Cyclogranisporites sp.
Endosporites globiformis
Latosporites latus
Laevigatosporites minor
Lycospora pusilla

Punctatisporites sp.
Punctatosporites spp.
Schopfites dimorphus
Thymospora obscura
Triquitrites bransonii
Vestispora laevigata

Stratigraphic Age.

An abundance of small monolete spores of the genus Punctato-
sporites in association with Schopfites dimorphus, Vestispora
laevigata and Thymospora obscura are diagnostic for a lower
Westphalian D age and in particular the Woorgreen or Coleford High
Delf Seams of the Forest of Dean.

Locality Reference: Cannington 62/621452-59

Coal Type: Vitrain/Clarain

Palynological Assemblage:

Very poor quality with abundant fusain and darkened wood.

The following spores were recorded as present:

Calamospora sp.
Endosporites globiformis
Laevigatosporites vulgaris
Lycospora pusilla

Stratigraphic Age:

The inadequacy of the assemblage permits only a general
indication of a Coal Measure age but younger than Westphalian A.
The nearest coal outcrops of this age would be in the Vobster or
Bristol Coalfields some 30 and 35 miles away respectively.

Locality Reference: Waternewton (Site 3) 2022-24

Coal Type: Clarain

Palynological Assemblage:

Calamospora liquida
Crassispora kosankei
Endosporites globiformis
Florinites mediapudens
Laevigatosporites vulgaris
Lycospora pusilla
Raistrickia fulva
Vestispora costata

Stratigraphic Age:

Not a distinctive or very varied assemblage and indicative only of a Middle Coal Measure age. (Probably lower or middle Westphalian B). Seams of this age would outcrop in the South Derbyshire and Warwickshire Coalfields.

Locality Reference: Halewood 600373

Coal Type: Clarain

Palynological Assemblage:

Calamospora liquida
Cirratriradites saturni
Crassispora kosankei
Densosporites anulatus
Endosporites globiformis
Florinites mediapudens
Laevigatosporites vulgaris
Lycospora pusilla
Vestispora pseudoreticulata

Stratigraphic Age:

Whilst clearly of Coal Measure type, the assemblage is limited in variety. The presence of B. globiformis and V. pseudo-reticulata in this context would suggest a Westphalian B age (lower or middle part).

If this site is Hales Wood, near Saffron Waldon the nearest outcropping coals of this age would be in the Warwickshire Coalfield, 85 miles away.

Locality Reference: Halewood 600372

Coal Type: Fusain/Durain

Palynological Assemblage:

Carbonised woody aggregates common and spores appear to have been subjected to heat with attendant development of resinous "ghost" and destruction of detailed structure. The following spores occur:

Alatisporites pustulatus
Cristatisporites indignabundus
Densosporites sphaerotriangularis
Florinites media pudens
F. similis
Laevigatosporites vulgaris
Lycospora pusilla
Lophotriletes microsaeetus
Verrucosisporites sifati

Stratigraphic Age:

A Coal Measure assemblage younger than Middle Westphalian A.

(For possible source, see other sample details).

Locality Reference: Southampton/680253

Coal Type: Durain

Palynological Assemblage:

Calamospora liquida

C. microrugosa

Endosporites globiformis

Ciranulatisporites microgranifer

Laevigatosporites vulgaris

Lycospora pseudoannulata

Schopfipollenites ellipsoides

Stratigraphic Age:

Abundant comminuted plant debris and a peculiar grey/black preservational colour. A Coal Measure seam of Westphalian B age.

This site is far removed from outcrops of this age, the nearest being the Bristol area, 60 miles away.

Locality Reference: Ratcliffe on Soar /Co1.

Coal Type: Clarain/Fusain.

Palynological Assemblage:

Alatisporites pustulatus

Crassispora kosankei

Grumosporites varioreticulatus

Laevigatosporites vulgaris

Planisporites granifer

Raistrickia fulva

Reinschospora concavus

Triquitrites tribullatus

Stratigraphic Age:

An impoverished Coal Measure assemblage which lacks the characteristic Westphalian B elements. A Lower Coal Measure or upper Westphalian A age is probable.

Seams of this are close at hand, either the Nottingham coalfield (15 miles) or the Leicestershire and South Derbys coalfield (10 miles).

Locality Reference: Winterton/68006

Coal Type: Clarain

Palynological Assemblage:

Calamospora spp.

Crassispora kosankei

Densosporites anulatus

Endosporites zonalis

Florinites visendus

Laevigatosporites vulgaris

Vestispora irregularis

Stratigraphic Age:

Not a rich assemblage, distinguished by Laevigatosporites vulgaris and Vestispora irregularis which in the absence of Endosporites globiformis is interpreted as indicating an age near the Lower to Middle Coal Measure boundary.

Both this sample and samples 680070 and 680054 could be derived from outcrops in the Yorkshire coalfield to the west (40 miles).

Locality Reference: Winterton/680070

Coal Type: Clarain

Palynological Assemblage:

Calamospora spp.

Cirratriradites saturni
Cingulizonates loricatus
Crassispora kosankei
Endosporites globiformis
Florinites mediapudens
Laevigatosporites vulgaris
Lycospora pellucida
Schopfpollenites ellipsoides

Stratigraphic Age:

An assemblage dominated by Endosporites globiformis
and probably Middle Coal Measures in age. i.e. Middle Westphalian
B.

Locality Reference: Winterton/680054

Coal Type: Clarain

Palynological Assemblage:

Apiculatisporis abditus
A. spinosaetosus
Calamospora liquida
C. microrugosa
C. perrugosa
Florinites mediapudens
F. similis
Laevigatosporites vulgaris
Lycospora pseudoannulata
L. pusilla
Potoniesporites elegans
Raistrickia fulva

Savitrisporites nux

Schopfipollenites ellipsoides

Stratigraphic Age:

The assemblage contains few specifically diagnostic elements and whilst it can be seen to be Coal Measure in age it is mainly the "absence" of certain spores which tend to indicate an upper Westphalian A age.

Locality reference: North Ormesby /N Q. 66 BT

Coal Type: Clarain

Palyhological Assemblage:

Crassispora kosankei

Florinites mediapudens

F. similis

F. visendus

Laevigatosporites vulgaris

Lycospora pusilla

L. pseudoannulata

Planisporites spinulistratus

Schopfipollenites ellipsoides

Vestispora costata

Stratigraphic Age:

An undistinguished Middle Coal Measure assemblage i.e. probably lower or middle Westphalian B.

Locality Reference: North Ormesby /No. 66 E6

Coal Type: Clarain

Palyhological Assemblage:

Apiculatisporis spinosaetosus
Calamospora microrugosa
C. pallida
Cirratriadites saturni
Crassispora kosankei
Dictyotriletes muricatus
D. bireticulatus
Endosporites globiformis
E. zonalis
Florinites mediapudens
F. similis
F. visendus
Laevigatosporites vulgaris
Potoniesporites elegans
Raistrickia saetosa
Vestispora pseudoreticulata

Stratigraphic Age:

Clearly a Middle Coal Measures assemblage which is well preserved and diversified. Probably the middle part ie. mid-West-phalian B.

Parent coal for this sample and sample number NO 66BT could be found in the Durham Coalfield (20 miles) or perhaps sea coal.

Locality Reference: South Witham/660469

Coal Type: Durain/Clarain (poor quality, shaley)

Palynological Assemblage:

Apiculatisporis spinosaetosus
Calamospora perrugosa

Densosporites sphaerotriangularis
Florinites mediapudens
F. similis
Laevigatosporites vulgaris
Lophotriletes microsaeetus
Lycospora pseudoannulata
Pustulatisporites papillosus
Savitrissporites asperatus
S. nux
Schopfpollenites ellipsoides
Vestispora costata

Stratigraphic Age:

A Coal Measure assemblage, probably of lower Westphalian
B age.

Coal outcrops in the South Derbyshire Coalfield are 40 miles
away.

Locality Reference: Fen Drayton C1 BAG 59

Coal Type: Clarain

Palynological Assemblage:

Apiculatisporis abditus
Calamospora pellida
Cirratriradites saturni
Crassispora kosankei
Densosporites anulatus
Endosporites globiformis
E. zonalis
Florinites mediapudens

Laevigatosporites vulgaris
Lycospora pseudoannulata
Planisporites granifer
Vestispora pseudoreticulata

Stratigraphic Age:

A limited variety Middle Coal Measure Assemblage i.e.
probably middle Westphalian B.

Coal outcrops for this sample are to be found to the west
either in the Warwickshire or South Derbyshire coalfield.

Locality Reference: Catterick J XIII/PH VII

Coal Type: Clarain/Durain

Palynological Assemblage:

Apiculatisporis spinulistratus
Cirratriradites saturni
Convolutispora mellita
C. laminosa
Crassispora kosankei
Cristatisporites connexus
Densosporites anulatus
D. sphaerotriangularis
Endosporites zonalis
Florinites similis
Laevigatosporites vulgaris
Lophotriletes gibbosus
Raistrickia fulva
Radiizonates striatus
Reticulatisporites polygonalis
Verrucosisporites donarii

Two other samples were examined and were found to contain the same basic assemblages as is recorded above.

Sample reference E III (32) was a durain and the assemblage consisted of 98% Densosporites sphaerotriangularis

Additional elements included:

Simozonotriletes intortus

Ahrensisporites guerickei

Sample reference 590449 contained basically the same type of assemblage with, in addition:

Calamospora microrugosa

Potoniesporites elegans

Schopfipollenites ellipsoides

Stratigraphic Age:

The three samples are clearly the same age and probably from different parts of the same coal seam. There is a complete lack of Westphalian B and uppermost Westphalian A species in the aggregate microflora. Consequently with Laevigatosporites vulgaris so strongly represented an age - middle Westphalian A would seem probable.

Suitable coal outcrops are nearby (20 miles) in the Durham Coalfield and most likely seams would be the Brockwell, Busty or Victoria.

Locality Reference: Higham Ferrers /610857

Coal Type: Clarain/Durain

Palynological Assemblage:

Apiculatisporis spinosaetosus

Calamospora microrugosa

C. pallida

C. perrugosa
Dictyotriletes muricatus
Endosporites globiformis
Florinites mediapudens
F. similis
F. visendus
Granulatisporites granulatus
Laevigatosporites vulgaris
Leiotriletes sphaerotriangularis
Lophotriletes gibbosus
Radiizonates striatus
Raistrickia fulva
Reticulatisporites polygonalis
Schopfipollenites ellipsoides
Verrucosisporites sifati
Vestispora costata
V. pseudoreticulata
V. tortuosa

Stratigraphic Age:

A diversified assemblage with abundant detrital plant tissue but only moderate preservation. Clearly a Middle Coal Measure assemblage i.e. low to middle Westphalian B.

The principal seams of the Warwickshire coalfield between Tamworth and Nuneaton would provide a possible source for the sample.

Locality Reference: Grafton Regis

Two samples: a) XXXLIII (3) 285

b) XXXLIII (1) 274

Coal Type: Both samples were clarain and yielded essentially the same spore assemblage.

Palyhnological Assemblage:

Alatisporites pustulatus

Apiculatisporis spinosaetosus

Calamospora pallida

Crassispora kosankei

Endosporites globiformis

Florinites mediapudens

F. millotti

Laevigatosporites vulgaris

Lycospora pusilla

Raistrickia cf. cunita

Reticulatisporites polygonalis

Vestispora pseudoreticulata

Stratigraphic Age:

The association of *Endosporites globiformis*, *Florinites millotti* and *Vestispora pseudoreticulata* provide reasonable evidence for dating both samples as middle to upper Westphalian B.

If this is the site four miles SSE of Boroughbridge the nearest source would be the Yorkshire coalfield in the Leeds area.

Locality Reference: Witcombe W418 (52) Col.

Coal Type: Clarain/Vitrain

Palynological Assemblage:

Acanthotriletes triquetrus
Cirratriradites annuliformis
Florinites mediapudens
Laevigatosporites minor
L. vulgaris
Punctatosporites granifer
Raistrickia saetosa
Schopfites dimorphus
Torispora securis
Triquitrites bransonii
T. spinosus
T. cf. sculptilis
Vestispora fenestrata
V. laevigata

Stratigraphic Age.

A distinctive association with Schopfites dimorphus, Vestispora fenestrata, V. laevigata, Torispora securis, Punctatosporites granifer being diagnostic for an horizon near the Westphalian C/D boundary.

The Woorgreen or Coleford High Delf seams of the Forest of Dean would be the probable source of this coal sample and nearest outcrops are 20 miles away.

Locality Reference: Maxey FV1/E/CF

Coal Type: Durain/Fusain

Palynological Assemblage:

Apiculatisporis spinosaetosus

A. variocorneus
Camptotriletes superbus
Cirratriradites saturni
Cristatisporites connexus
C. indignabundus
Densosporites anulatus
D. sphaerotriangularis
Florinites mediapuden
F. visendus
Knoxisporites stephanephorus
Laevigatosporites vulgaris
Planisporites granifer
P. sinulistratus
Punctatisporites sinuatus
Raistrickia saetosa
Reticulatisporites reticulatus
Verrucosisporites sifati

Stratigraphic Age:

A rich in species, well preserved assemblage of Coal Measure type. In the light of several "absent" species, the age is probably middle Westphalian A.

Location of site not known.

Locality Reference: Highcross/26/HC/71Co1.

Coal Type: Durain.

Palynological Assemblage:

Apiculatisporis spinulistratus
Cirratriradites saturni

Cristatisporites indignabundus

Densosporites anulatus

D. sphaerotriangularis

Endosporites globiformis

Laevigatosporites vulgaris

Lophotriletes microsaeetus

Spencerisporites radiatus

Stratigraphic Age:

A fairly typical "durain coal type" assemblage from the Middle Coal Measures i.e. lower or middle Westphalian B age. Site not located geographically.

Locality Reference: Thistleton (Site 4) 60 - 611201

Coal Type: Clarain/Durain

Palynological Assemblage:

Alatisporites pustulatus

Apiculatisporis variocorneus

Calamospora microrugosa

Convolutispora florida

Crassispora kosankei

Densosporites anulatus

D. sphaerotriangularis

Florinites mediapudens

Laevigatosporites vulgaris

Lycospora pusilla

Reticulatisporites polygonalis

Simozonotriletes intortus

Spencerisporites radiatus

Verrucosisporites donarii

Stratigraphic age:

Laevigatosporites sp. and Densosporites spp. dominate a well preserved Westphalian assemblage. The absence of certain Middle Coal Measure elements suggests an upper Westphalian A age. Both this and sample number 611096 could be obtained at outcrop in either the South Derbyshire (40 miles) or Warwickshire (40 miles) Coalfields.

Locality Reference: Thistleton 61 (Blackhulme) 611096

Coal Type: Clarain

Palynological Assemblage:

Apiculatisporis spinoaetosus
Cristatisporites indignabundus
Densosporites anulatus
D. sphaerotriangularis
Dictyotriletes reticulocingulum
Florinites mediapudens
Laevigatosporites minor
L. vulgaris
Planisporites granifer
Punctatisporites sinuatus
Schulzospora rara
Spencerisporites radiatus
Verrucosisporites microtuberosus
V. donarii
Vestispora tortuosa
V. costata

Stratigraphic Age:

A critical occurrence together of Vestispora spp.,

Schulzospora rara in an assemblage dominated by Laevigatosporites spp. indicates a seam from the upper part of the Lower Coal Measures.

Locality Reference: Wigginton/681240

Coal Type: Durain/Pusain

Palynological Assemblage:

Ahrensia *guerickei*

Apiculatisporis spp.

Calamospora *microrugosa*

Crassispora *kosankei*

Densosporites *anulatus*

D. sphaerotriangularis

Laevigatosporites *vulgaris*

Vestispora *costata*

V. irregularis

Stratigraphic Age:

A Coal Measure assemblage with only moderate variety and probably derived from the lower part of Westphalian B or Middle Coal Measures.

The nearest outcrops of suitable coals to Wigginton, North Oxfordshire, are those of the Warwickshire Coalfield, 40 miles to the north.

Locality Reference: Thorpe

Three coal samples were prepared and examined,
the sample references are as follows:

a) ADP 63 A1 (4)

b) ADP 63 B1b (4)

c) ADP 63 I (2)

Coal Type: All samples were Clarain, low grade coal with shaley partings.

Palynological Assemblage:

The three samples contained similar spore taxa and the aggregate assemblage is limited in variety:

Calamospora pallida

Cirratriradites saturni

Densosporites anulatus

D. sphaerotriangularis

Laevigatosporites vulgaris

Stratigraphic Age.

The abundance of *Laevigatosporites vulgaris* and the notable absence of *Vestispora* spp. *Radiizonates* spp and *Endosporites globiformis* would suggest a coal horizon near the middle of the Lower Coal Measures.

The nearest, suitable coal outcrop source for Thorpe Park near Peterborough, is the South Derbyshire coalfield some 50 miles to the west.

Table 1: Data summary on coal type, geological age and possible source.

Site	Reference	Coal Type	Geological Age	Nearest Outcrop Source	Distance (miles)
Wanborough	69/A XVII-1	C/D	Westphalian D	Forest of Dean	45
Wanborough	69/C XII- 1	C/D	Westphalian D	" " "	"
Wanborough	69/B II - 1	C	Westphalian D	" " "	"
Wanborough	69/E IV - 2	C	Westphalian D	" " "	"
Wanborough	69/D VIII-1	C	Westphalian D	" " "	"
Wanborough	67/Co1 - 4599	C	Westphalian D	" " "	"
Wanborough	67/Co2 - 5300	C	Westphalian D	" " "	"
Barnack	BIII/U/ag	D	U. Westphalian A	South Derbyshire	
Lechlade	9624	C	Westphalian D	Forest of Dean	40
Lechlade	9269	C	Westphalian D	" " "	"
Cannington 62	621452 - 59	V/C	Westphalian A/B	Radstock - Bristol	30/35
Cannington 62	62145	V/C	Barren	-	-
Cannington 63	630836 - 42	V/C	Barren	-	-
Waternewton (3)	2022 - 24	C	L. Westphalian B	South Derbys/Warwicks	65
Halewood	600373	C	M. Westphalian B	?Warwickshire	85
Halewood	600372	F/D	Westphalian A/B	"	"
Southampton	680253	D	M. Westphalian B	Bristol	60
Ratcliffe-on-Soar	Co1	F/C	M. Westphalian A	Nottingham/South Derbys	10
Winterton	680061	C	L/M Westphalian B	Yorkshire Coalfield	40
Winterton	680070	C	L/M Westphalian B	" "	"
	680064	C	M Westphalian A	" " "	"

Halewood	600373	C	M. Westphalian B	South Derbys/Warwicks	65
Halewood	600372	F/D	Westphalian A/B	"	"
Southampton	680253	D	M. Westphalian B	Bristol	60
Ratcliffe-on-Soar	Co1	F/C	M. Westphalian A	Nottingham/South Derbys	10
Winterton	680061	C	L/M Westphalian B	Yorkshire Coalfield	40
Winterton	680070	C	L/M Westphalian B	" "	"
Winterton	680054	C	M. Westphalian A	" "	"
North Ormesby	NO 66 BT	C	L/M Westphalian B	Durham Coalfield	20
North Ormesby	NO 66 EC	C	M. Westphalian B	" "	"
South Witham	660569	D/C	L. Westphalian B	South Derbyshire	40
South Witham	660472	Sh/coal	Barren	"	"
Fen Drayton	C1/BAG/59	C	M. Westphalian B	Warwickshire/South Derbys	60/70
Catterick	J.XIII/PH/VII	C/D	M. Westphalian A	Durham Coalfield	20
Catterick	590449	C/D	M. Westphalian A	" "	"
Catterick	E III - 32	C/D	M. Westphalian A	" "	"
Higham Ferrers	610857	C/D	L. Westphalian B	Warwickshire Coalfield	45
Grafton Regis	XXXIII/3-285	C	U. Westphalian B	?Yorkshire Coalfield	15
Grafton Regis	XXXIII/1-274	C	U. Westphalian B	" "	15
Witcombe	W418(52)Co1	C/V	L. Westphalian D	Forest of Dean	20
Marey	FV1/E/CF	D/F	U. Westphalian A	?	?
Highcross	26EC/71 Co1	D	L/M Westphalian B	?	?
Thistleton 61	611096	C	U. Westphalian A	South Derbys/Warwicks	40
Thistleton 60	611201	C/D	U. Westphalian A	" " "	"
Thistleton 63	611097	?	Barren	"	"
Wigginton	681240	D/F	L. Westphalian B	Warwickshire Coalfield	40
Thorpe	ADP/63/A1-4	C	M. Westphalian B	South Derbys Coalfield	50
Thorpe	ADP/63/B16-4	C	M. Westphalian B	" " "	"
Thorpe	ADP/63/1-21	C	M. Westphalian B	" " "	"

Coal Type Abbreviations:

C. - Clarain

D - Durain

V - Vitrain

F - Fusain

Sh - Shaley