

# The Building-stones of Blenheim Palace, Cornbury Park, Glympton Park and Heythrop House, Oxfordshire

By W. J. ARKELL

**I**N company with Mr. David Green, I examined the exterior of Blenheim Palace in July, 1948, by permission of the Duke of Marlborough. Mr. Green and Mr. Laurence Whistler had informed me that letters from Vanbrugh (mainly unpublished) referred to building stones for the palace from Taynton, Burford, Cornbury, Glympton, Heythrop, Headington, and Bourton-on-the-Hill. The results of my examination were surprising, and it seems worth while to record them, together with notes on the other houses, Cornbury, Glympton, and Heythrop, to which the trail led.

## BLENHEIM PALACE

The greater part of the palace visible from the ground (and there is no sign of any change of materials higher up) consists of a cream-coloured oolitic freestone which, especially on the N. front, has turned to a golden yellow on the surface. This stone is peculiar because it is full of fragments and whole specimens of large fossil sea-urchins or sand-dollars (*Clypeus*). The ooliths are irregular in size and rather coarse, and are harder than the matrix, which weathers marly. Other fossils noticed, besides *Clypeus* in nearly every block, are occasional *Terebratula*, *Rhynchonella*, *Pseudolimea*, *Nerinea*, and one coral (*Thecosmilia*?).

This *Clypeus* stone is used externally, with the minor exceptions noted below, for the whole of the N. and S. fronts, including the great porticos, and for the kitchen court and orangery. In the columns of the kitchen court the stone (not up-ended) is 4 ft. on the bed, and the squared ashlar stones of the plinth on the two main fronts are of great size.

On the whole the *Clypeus* stone shows little decay and hardly any erosion, except in the kitchen court, where it may be presumed the best selection of stone was not used and where repairs have not been so assiduously done as elsewhere.

W. J. ARKELL

The clock-tower, however, has been extensively patched. Many of the patches have been done in Clypeus stone, apparently from the same quarry, and these patches have turned the same yellow as the rest.

The following parts of the palace are not of Clypeus stone :

The top (water table) and bottom courses of the plinth are of Portland stone, as is the paving on the porticos.

The plinths of the clock-tower and of the E. wing of the N. forecourt are of Headington stone.

The steps of the porticos on both N. and S. fronts are of a dark grey Palaeozoic sandstone, probably Pennant Grit.

The SW. corner of the palace, especially the rusticated masonry above the Portland water table on the S. end of the W. front, is of Bath stone or some stone with all the visible characters of Bath stone. The stable court is also largely Bath stone, with inset panels of Clypeus stone ; and so (probably) is much of the E. wing of the N. forecourt, above the Headington plinth. These Bath stone portions seem too localized and extensive to be later refacings. On the other hand, the only Bath area of the main palace is the SW. corner, which faces the worst weather, and it is possible that the original stone here suffered erosion and was early replaced.

---

The origin of the Clypeus stone was a problem. In 1946 I was assured by a trustworthy authority that it came from deep down in the old Taynton quarries, and this was consistent with previous printed statements and tradition. At the same time I remarked<sup>1</sup> that it 'differs from all now visible at the quarries or raised recently in containing numerous Clypei'. I thought it possible that Clypei might occur locally in Chipping Norton Limestone, but the re-examination of the palace in July, 1948, convinced me that they are too numerous and that the stone can only have come from the formation known to geologists as the Clypeus Grit (Inferior Oolite Series, whereas the Taynton and other Oxfordshire stones belong to the Great Oolite Series). I sent a sample from one of the fluted columns of the S. portico to Mr. L. Richardson, F.R.S.E., F.G.S., the chief authority on the Inferior Oolite Series and author of the district memoir of the Geological Survey (Witney sheet, 1947). He replied as follows : 'The sample of stone you sent can well be Clypeus Grit—

<sup>1</sup> *Oxford Stone* (1947), 78.

## THE BUILDING STONES OF BLENHEIM PALACE, ETC.

large ooliths in "marly" matrix. The numerous *Clypei* you have noted in the blocks in the building are conclusive, and the fossils you mention are such as occur in Clypeus Grit.<sup>2</sup>

In the Oxford district the Clypeus Grit is about 30 ft. thick, but most of it is rubbly and worthless for building. The only massive beds noted in quarries lie at or near the base of the formation. There is Clypeus Grit around Bourton-on-the-Hill, but it is all of the rubbly kind; freestone quarried in that district comes from a lower part of the Inferior Oolite and contains no *Clypei*.

### CORNBURY PARK

A letter from Vanbrugh to the Duke of Marlborough dated 22 June, 1705 (Blenheim Muniments A1, 27), of which Mr. Laurence Whistler sent me a transcription, states that 'a general search of all the quarries in the country' led to the conclusion that 'my Lord Rochester's at Cornbury is the best, which is at five mile distance'. Another quarry, Sir Thomas Wheate's at Glympton, 'is near so good, so out of these two the house will be chiefly built'. The Cornbury stone was offered free, the Glympton stone had to be paid for.

The only freestone quarry at Cornbury, or anywhere on the Cornbury estate, is Buckleap or Kennels quarry, near the top lake, about  $\frac{3}{4}$  mile SW. of the house, and exactly six miles as the crow flies from Blenheim Palace. This quarry is well known to geologists as showing flaggy or bastard Taynton Stone (about 20 ft.) overlying 7 ft. of Sharps Hill Beds and below that Chipping Norton Limestone (worked to 23 ft.).<sup>2</sup> No quarrying has been done there for thirty or forty years, however, and at least the lowest 12 ft. of the stone face has long been covered up by talus.

Now it is recorded by Plot and Evelyn that the south or terrace wing (c. 1660) of the mansion of Cornbury was built from freestone quarried in the park, and in 1901-3 the same quarry was again drawn on for building the hall, entrance, and vestibule.<sup>3</sup>

Accordingly, in July, 1948, by kind permission of Mr. O. V. Watney, I examined the exterior of the house. The whole of the 1660 or S. wing, both south and west sides, proved to be built of the same Clypeus stone as Blenheim, in wonderful preservation. I had been informed in 1946<sup>4</sup> from an authoritative trade source that the south front had been refaced about 1890 in Farmington freestone, but the only Farmington freestone to be seen is a

<sup>2</sup> Arkell, *Geology of Oxford* (1947), 51; Richardson, *Geol. Country around Witney (Mem. Geol. Survey)*, 26.

<sup>3</sup> V. Watney, *Cornbury and the Forest of Wychwood* (1910), 4.

<sup>4</sup> See Arkell, *Oxford Stone* (1947), 87.

## W. J. ARKELL

small quantity in some walls of outbuildings at the back. The south and west fronts of the 1660 wing are in identical stone and preservation, and in an alcove on the west front are some scratched initials with the dates 1788 and 1798.

The 1901-3 additions on the east front, and the lodges, dated 1901, by the Charlbury gate of the park, are of the same stone, a rich yellow and full of Clypeus.

At the sawmills by Buckleap quarry I was able to talk to Dick Tooley who worked in the quarry when the 1901-3 additions were being built. He confirmed that the stone all came from this one quarry and occurs there in beds sometimes up to 5 ft. thick, and that the only freestone of any value lies about 60 ft. below the surface, in the bottom of the quarry, where it has long been covered up. This is confirmed by E. A. Walford's published description of the quarry in 1906,<sup>5</sup> which shows the only freestone as occupying the lowest 11 ft. 'in courses of 6 ft. and 5 ft.'. This bottom bed must therefore be a unique development of freestone at the top of the Clypeus Grit, leaving the Chipping Norton Limestone with a thickness of only 12 ft. instead of 23 ft. as supposed hitherto.

### GLYMPTON PARK

By kind permission of Mr. Alan Good, I examined the exterior of Glympton Park in June, 1948, and found it to consist entirely of Bath stone or some stone indistinguishable from Bath stone. The 18th century part is in the same stone and the same masonry as the main part built in 1849, and presumably was refaced about the same time.

The old quarry in the park, near the entrance gates, which I visited with Mr. David Green, is much sloped and overgrown. At present it exposes only a small quantity of White Limestone, which is useless for building, but presumably it was worked for a deeper-lying stone, perhaps equivalent geologically to the Taynton Stone. Both Chipping Norton Limestone and Clypeus Grit would here lie too deep to have been quarried. Good building-stone in the Chipping Norton Limestone is at present being quarried at the northern edge of the village for new almshouses: it is nothing like the stone with which Glympton Park is built.

### HEYTHROP HOUSE

In June, 1948, Mr. Green and I also paid a visit to Heythrop House, and I am grateful to Father J. L. Russell for giving us every facility and for information. The main 18th-century fronts, which survived the fires, are built

<sup>5</sup> Reproduced in Richardson, *loc. cit.*

## THE BUILDING STONES OF BLENHEIM PALACE, ETC.

of freestone without Clypei or other recognizable fossils, and there is no reason to doubt the tradition that it came from local quarries in the Chipping Norton Limestone. Mr. T. F. Cozier, formerly mason to Magdalen College, informed me in March, 1938, that as a boy he worked with his father in a quarry on the Heythrop estate called the Rabbit Warren Quarry, about 400 yds. NW. of the village school, and that it was from this quarry that the mansion, church, vicarage, lodges, farm houses, and most of the village were built.<sup>6</sup> On the whole the stone has weathered well, and it is a lovely cream colour, well grown with lichens. The two wings added to the north front in 1926 are of Hornton ironstone. No Heythrop stone seems to be used externally at Blenheim.

### SUMMARY OF CONCLUSIONS

The greater part of Blenheim Palace is faced in a unique stone developed in the top layers of the Clypeus Grit (Inferior Oolite) in Wychwood Forest and quarried from Buckleap Quarry, Cornbury. The stone for the 17th-century parts of, and the early 19th-century additions to, Cornbury Park was obtained from the same quarry.

So far this bears out the documentary evidence of a letter from Vanbrugh, dated 1705, telling the Duke that the Palace was to be built chiefly of stone from Cornbury and Glympton.

The only important portions of the palace not of Cornbury stone, however, are of a stone which has all the obvious characters of Bath stone. It would be accepted without hesitation as Bath stone but for Vanbrugh's letter and the fact that Glympton Park is built of the same stone. Enquiry has failed to produce any evidence or tradition for the source of the stone used for Glympton Park, which was added to and perhaps completely refaced (since the stone and masonry of the whole building are the same) in 1849. The old quarry in the park shows no stone, and it is unknown when it was last worked.

If any reader of these notes comes across evidence for the source of stone used for Glympton Park, or any mention of the use of Glympton stone in any building still standing, it would be appreciated if he would communicate with me and so help to clear up the last part of the Blenheim problem. The solution that I favour is that Glympton stone was a poor variety of what is known geologically as the Taynton group, and that where used externally it decayed both at Blenheim and at Glympton Park and in the 19th century was completely refaced at both places with Bath stone.

<sup>6</sup> This is presumably the quarry described by H. B. Woodward, *Jurassic Rocks of Britain*, iv (1894), 160.

W. J. ARKELL

*Postscript.* Since the foregoing was sent to the Editor, Mr. Laurence Whistler's article 'Some unpublished drawings of Sir John Vanbrugh; I, Vanbrugh's design for Glympton' has been published in the *New English Review Magazine*, new series, vol. 1, no. 4, December, 1948, p. 250. From the Vanbrugh letters quoted, it seems that Glympton stone was regarded as having very poor resistance to frost, and it is unlikely that it would have been extensively used for external work in the palace. Probably the Cornbury stone was used for facing and the Glympton stone for backing. W.J.A.