

Reviews

Oxford Stone. By W. J. Arkell. Faber and Faber, London, 1947. Pp. 185 ; 37 plates and 27 figures. 25s.

The value of this book for the student of Oxford buildings cannot be over-estimated. It is an account of the building stones used in the city for the last thousand years, their quarrying and dressing, and the way they have withstood time and weather, and man. Dr. Arkell also deals with the urgent question of how these stones can be kept in repair so that they may best preserve the essential character of the buildings, as conceived by their designers. Dr. Arkell has a life-long experience of the geological formations of the district, the oolite and corallian limestones from which Oxford's building stones have nearly always been drawn, and his sensitive eye and mind have picked out all manner of subtleties of texture in the buildings, both as they now stand, and as intentions in the minds of their creators of two or three centuries ago. Altogether it is a delightful book, not least for Dr. Arkell's pleasing prose.

This is probably the first time that a comprehensive study has been made of the building stones of such a centre of building activity as Oxford, and the influence of the book should extend far beyond this region. In Oxford we are concerned with the preservation and continual growth of the material side of a highly specialized tradition, but the building stones make a vital contribution to the local regional characters which are so rapidly disappearing from the face of England to-day. Our generation always pleads expediency, but every building of local materials pulled down to be replaced by one of other materials (or merely a repairing in synthetic stone) is one more step towards a uniform English scene. Other regions would do well to study their building stones in detail, before concrete and brick and asbestos have left the stones themselves as no more than names in account rolls, for then it is too late.

With this book in their hands, and relying on (and encouraging) the skill of the present-day masons and craftsmen, those responsible for the upkeep of the College and University buildings should be enabled to make wiser decisions concerning these fabrics than have sometimes been made in the past.

Until recent years little has been written of the craftsman's contribution to the Oxford scene. But the balance of attention between the draughtsmen-architects and the craftsmen is being restored : Mr. Hiscock has shown us that the master mason, William Townsend,¹ not only had an important share in realizing in stone the thoughts and designs of gifted amateurs like Dr. Clarke and Dean Aldrich, but also carried out fine designs of his own. Now Dr. Arkell has demonstrated the contribution of the humbler men who chose and dressed the stones and roofing slates which give the buildings their final textures.

The story of Oxford's stone supply is traced here quarry by quarry from the early Middle Ages to the present day, and is of great interest to the economic historian. The College and University building and repair accounts and other archives available to Dr. Arkell are certainly representative enough, and the main lines of development

¹ *A Christ Church Miscellany* (1946), chap. 4 ; *Architectural Review*, October 1945, 99-107.

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of the industry must now be clear. A search of the unpublished and untranscribed archives not so far examined by Dr. Arkell would probably do little more than add a few years here and there to the life of a quarry or change the picture in minor details; this, however, should certainly not discourage the study of these neglected sources. This detailed history is especially welcome as the Victoria County History account of Quarries under 'Industries'² consists of little more than stray notes with no historical conclusions.

In the earliest buildings, such as the 11th-century tower of St. Michael-at-the-Northgate, the chief building material was coral rag, used as random rubble (p. 33 ff.), with perhaps some Taynton stone for dressings. The coral rag could have been obtained from almost any of the numerous small quarries around Oxford (Map, fig. 4). Dr. Arkell points out (p. 35) that the tradition that Chilswell supplied the early stones seems to start with Hearne, and he might have said that Hurst's 'identification' of Hinksey as the source of the stones in the arches on the Abingdon road³ was really only a suggestion. In any case the main bulk of building materials of the early period seem to have come from fairly close to Oxford, only the dressings at the most being brought from any distance. Later in the Middle Ages documents show that stone for rubble masonry was coming into Oxford from Hinksey, Sunningwell, Iffley, Elsfield, Cowley (p. 36), and in the early 15th century it was obtained from Dry Sandford and Besselsleigh for the new bridge at Abingdon.⁴ In 1651 the quarries at Kennington and Iffley were providing rubble for construction of locks at Swift-ditch between Nuneham and Abingdon.⁵ Dr. Arkell emphasizes (p. 33) that the coral rag in these early random rubble walls is well-nigh indestructible, and that more frequent use of this material might have saved vast sums of money spent on repairs. Occasionally quarries are mentioned in early times in documentary sources, such as at Garsington, c. 1210⁶ (presumably in the Portland Beds), at Bletchington, c. 1139,⁷ and at Minster Lovell in 1197⁸ (probably in the White Limestone), but there is usually nothing to show whether they were of more than local importance.

Taynton quarry, the source of much of the earliest fine stone, is mentioned in the Domesday survey of 1086 and again in 1163.⁹ Dr. Arkell detects this stone in the early 13th-century work at the Cathedral (p. 61) and more recently in some romanesque work in the Oxford region.¹⁰ This stone was being worked during the Roman occupation of Britain, and it is tantalizing that Dr. Arkell cannot tell us more of the industry in this period. His silence is perhaps largely due to the scanty attention paid to building materials by the earlier excavators of Roman sites in the region, such as Northleigh. The earliest known documentary records of the use of Taynton stone in Oxford are as late as 1299,¹¹ and the quarries have a fairly

² *V.C.H. Oxon.*, II (1907), 226, and 265-8.

³ Hurst, 'Oxford Topography', *Oxford Historical Society*, XXXIX, 15.

⁴ Francis Little (1627), 'A Monument of Christian Munificence' (Oxford, 1871).

⁵ *Oxonienia*, II (1937), 164-5.

⁶ *Eng. Reg. Godstow*: vol. I, E.E.T.S., 129 (1905), 335.

⁷ *Ibid.*, 214.

⁸ *Thame Cartulary: Oxfordshire Record Society*, xxv (1947), 72.

⁹ Pipe Roll, 9 Henry II (Pipe Roll Soc.), 48.

¹⁰ Personal communications from Dr. Arkell, and see *Berks. Archaeol. J.*, LI (1950), 58-62.

¹¹ Not 1310 as stated, p. 61, Merton Record 4062 (1299-1300). The statement by Aymer Vallance (*Old Colleges of Oxford* 1912, 23) that a kitchen was being built at Merton in 1278 with stone from Taynton and Wheatley appears to have no documentary authority.

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continuous history up to the present day. In recent years they have provided the fine polished stone interior surface of the New Bodleian Library.

The next quarries to be brought into use seem to have been those at Wheatley, in the Corallian, which supplied so much of the stone for Merton chapel in the late 13th century: even the stone of the great piers of the tower crossing came from Wheatley.¹² The documented history of Wheatley stone actually goes back a few years before 1290 (p. 37) to 1286, when the quarry was already in existence.¹³ Pl. 5 shows the excellence of Wheatley stone after five and a half centuries exposure in the external face of New College cloisters (1396-1400, rather than 1380-6 as stated on pl. 5). Wheatley stone was much used at Wallingford Castle in the 14th century,¹⁴ and also at Abingdon Abbey.¹⁵ Dr. Arkell has more recently identified Wheatley as a possible source of stone used in several Norman buildings within 10 miles of the quarries.¹⁶

Not until the end of the 14th century does Headington appear as a source of stone supply. The earliest references are in the building account for New College Bell Tower, 1396, and for Queen's in 1398-9; in the early years of the 15th century it was being used at Oriel,¹⁷ St. Bartholomew's, Cowley, and again at Queen's. All these are works on which the local master mason, William Brown, was in charge,¹⁸ and he may have been to some extent responsible for developing the use of Headington stone. Dr. Arkell finds no evidence in buildings themselves of any earlier use of Headington stone. William Orchard, the designer of much of Magdalen, is a prominent name connected with the Headington quarries in the later 15th century, and the description of the sale of his quarry by his son John, a B.C.L., in 1513¹⁹ would have been a pleasing addition to this account. The quarries were working at full pressure during the 17th century, but declined after the middle of the 18th century. The earlier examples of Headington stone remain well preserved, though after the Middle Ages the record of its use is a sad one. There is, however, one redeeming feature, the very frequent use up to the 19th century of the rugged white 'Headington Hard' for plinth courses, one of the most attractive features in all Oxford stonework. Mr. Greening Lamborn's historical chapters and the useful 1804 map in *Headington Quarry and Shotover*²⁰ might have been mentioned. Headington stone was used for the west range of Hertford (1820-2), and for parts of the University Press building in Walton Street (1826-30), but the variable and unreliable nature of stone from these quarries probably led to its declining use, until to-day the quarries are only used sporadically for roadstone and lime-making.

When 'Milton' is mentioned as the source of stone ambiguity may arise, as Dr. Arkell recognizes (p. 90), between Milton-under-Wychwood and Milton

¹² Merton Record 4059 (1292-3): H. W. Garrod, *The Ancient Painted Glass in Merton College, Oxford* (1931), 14, n. 2. It may be noted that much of the Wheatley stone for Merton chapel was being carved at the quarry, which was providing the main bulk of the finest stone used in the initial building operations.

¹³ *Cal. Pat. R.*, 1281-92, 231. See below, p. 93.

¹⁴ *Black Prince's Register*, IV, 83, 562 (1353, 1365).

¹⁵ *Obedientiar's Rolls of Abingdon*, Camden Soc., LI (1892), 25, 28, 29, 49.

¹⁶ Personal communication from Dr. Arkell.

¹⁷ Oriel Treasurer's Accts., Bk. I, 1410-11, on new gatehouse.

¹⁸ *Oriel Record*, April 1946, 7-11.

¹⁹ W. D. Macray, *Muniments of Magdalen College, Oxford* (1882), 20-1.

²⁰ G. A. Coppock and B. M. Hill, *Headington Quarry and Shotover* (1933), 25.

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near Wheatley where there are old quarries in the Portland Beds.²¹ The 'Milton' stone for Cardinal College in 1525 probably did come from Wychwood, as certainly did the notorious 'Milton' stone of the last century, sometimes sold as 'Taynton' and even called 'Taynton stone (Milton Quarries)' in the New College specification of 1885 (p. 65). But Plot mentions Little Milton Quarry in mid-17th century, and the 'Milton' quarry worked by Hugo Gryffyn to supply Merton in 1307-10 might have been one near Wheatley, as a *Hugo Griffin* lived at Wheatley in 1279²² and in 1286 Hugh Griffin of Whateley contracted to repair Harpeford (i.e. Wheatley) Bridge with stone from 'Charlegrove, lying within the bounds of the forest between the covert thereof and the quarry of Whateley'.²³ However, a *Hugo le Quarreur* is recorded at Milton-under-Wychwood in 1279.²⁴

The Burford quarries, associated with 17th- and 18th-century work both in Oxford and in London²⁵ do not appear to have been opened up before the 15th century. Burford stone had already been used in London for Wolsey's work at York Place, Whitehall, in 1515,²⁶ but the evidence collected here (p. 70) suggests that it is an unreliable stone. Barrington, Windrush and Sherborne were also supplying building stone in the Middle Ages. It is interesting to learn (p. 72) that Sir Roger Pratt used Barrington stone for Coleshill House, near Faringdon, in 1662, and the stone may be seen on the inner walls of Corpus, refaced with it in 1804. The front of Oriel Library (Wyatt, 1788) is an example of Windrush stone, and the detailed specification (p. 80) for stone in different parts of this building by Edward Edge, the master mason, and the fine engraving of the finished library, with Northleigh paving being unloaded from a cart, are particularly delightful.

In chapter 4 Dr. Arkell describes other local stones used from time to time, emphasizing the variety of colour and texture available to the Oxford builders. Edward Edge's specification for the Oriel Library and Townsend's for that at Christ Church, 1716, show how they used their opportunities. Some of the remarkable Bletchington Marble monoliths of the St. John's Canterbury Quadrangle (1636) can still be seen, though five were renewed in Portland in 1905.

In the chapter on 'foreign' stones he gives an interesting account of Bath stone, the most important of these in Oxford. From the early Middle Ages Haselbury (i.e. Box, near Bath) quarries were active²⁷ (p. 92), sending as far afield as Windsor²⁸ and Winchester in 1221,²⁹ but although this type of stone with 'water marks' (p. 94) appears in some mediaeval buildings in east Wiltshire, such as Avebury Church, it cannot be observed in mediaeval work in Oxford. This type of stone seems to have been used in the 18th-century church at Pusey in Berkshire, and perhaps also in the 18th century at Wallingford,³⁰ but it probably appeared for the first time in Oxford in the 1820s. On the whole Bath stone in the earlier buildings

²¹ W. J. Arkell, *Quart. J. Geol. Soc.*, c (1944), 45-73, pl. iv.

²² *Hundred Rolls*, II, 719.

²³ *Cal. Pat. R.*, 1281-92, 231.

²⁴ *Hundred Rolls*, II, 738.

²⁵ E.g. *Archaeologia*, LXVI (1914-15), 58 (St. Stephen's Walbrook).

²⁶ *J. Brit. Arch. Assoc.*, 3rd Ser., VIII (1943), 52.

²⁷ G. J. Kidson, *Hist. Manor of Hazelbury* (1936), 116 ff.; *Tropenell Cart.*, II, 118-50.

²⁸ W. H. St. J. Hope, *Windsor Castle* (1913), 194, 196, 199, etc.

²⁹ L. F. Salzmänn, *English Industries in the Middle Ages* (1923), 86-7.

³⁰ Personal communication from Dr. Arkell.

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in Oxford has worn well except for the damage done by rusting and swelling of the iron cramps so universally specified for them.

Although both Bladon and Clipsham (e.g. Holywell) quarries were in use in the Middle Ages (only the former supplying Oxford, though the latter supplied Windsor)³¹ they belong primarily to the Aesthetics of Modern Oxford and will be discussed below.

Dr. Arkell analyses the history of the Cotswold stone slate industry much more carefully than has ever been done before. The myth, which has gained wide currency, that all stone slates must be 'Stonesfield' (frost-split) and that the slate pits there were being worked as far back as Roman times, grew up as a non-geologists' failure to distinguish between the 'present', splitting along natural bedding planes by a hammer stroke, and the frost-splitting process characteristic of the industries of Stonesfield in Oxfordshire and Colleyweston in Northamptonshire. No excavation of a mediaeval (or earlier) site, nor any mediaeval document has so far provided evidence for the use of the Stonesfield frost-splitting process: the usual mediaeval stone slates, excavated in large numbers at Deddington Castle³² and other sites, seem to have been 'presents', often very heavy, from the Sharp's Hill beds, Forest Marble, or sandy facies of the Taynton stone, with carefully drilled holes quite unlike the tapped holes of the Stonesfield slates. Their modern equivalents but with tapped and not drilled holes, from Kington Thorns, can be seen in the present re-slating in New College cloister. Dr. Arkell suggests that the frost-splitting process of the Stonesfield industry was not discovered before the end of the 16th century, which Morton (1712) also suggested for the similar industry at Colleyweston. The earliest reference so far available for Stonesfield slates appears, in fact, to be that of Plot in his *Natural History of Oxfordshire* of 1676, when it is noted as a flourishing industry. University College in 1635 employed Richard Perry of Burford as their slater, and paid him for slates.³³ The Wadham evidence of 1610-13 (p. 136) is unsatisfactory, for although the Wadham mason, Mr. Crozier, considers the Stonesfield slates still on the roof are the original ones of 1612, the building accounts make no reference to Stonesfield as a source of slates, but only to Burford.³⁴ Further enquiry into the beginnings of the Stonesfield industry would be of some interest.

It is possible to suggest a date at which the mediaeval stone slates began to be used on buildings in the Oxford region, for they do not seem to be found in 12th-century levels in excavations, though they are abundant from the early 13th century onwards. Further confirmation comes from the numerous references in the Liberate Rolls of Henry III to the systematic re-roofing with stone slates of all the buildings of Henry III's establishment of Woodstock, carried out over the years 1239-41.³⁵ Before this, presumably, wooden shingles were used for roofing

³¹ W. H. St. J. Hope, *Windsor Castle* (1913), 189, 194, 196, 199, etc.

³² *Oxoniensia*, xi/xii (1946-7), 167-8.

³³ Carr, *University College* (1902), 207. Oriel was getting tiles from Burford in 1525 (*Oriel Treasurer's Accts.*, Bk. iv). It is probable that Burford became a centre of builders' yards, but the slates would probably have been quarried nearby. There were slate quarries at Upton in the 15th century.

³⁴ T. G. Jackson (*Wadham College* (1893), 41), says 'slates came, some from Burford, and presumably from Stonesfield'—so the myth has grown.

³⁵ *Cal. Lib. R.* (1226-49), 414 (1239); 1240-5, 35 (1241) at Woodstock 'all buildings of both courts not roofed with slate to be so roofed'. The porter's lodge was finally roofed with slate in 1243 (*Cal. Lib. R.*, 1240-5, 304).

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of such buildings, and even the aisles of the Great Hall at Woodstock were re-roofed with these in 1233.³⁶

Mention of Thomas Prat (p. 37) and Hugo Gryffyn (p. 64) in connection with the earliest Merton buildings brings to mind a class, emerging during the Middle Ages, who appear to have functioned as stone merchants or sometimes as builders' merchants generally, without necessarily being themselves master masons.³⁷ They often had a family tradition, and supplied smaller building enterprises, as well as larger ones when the Crown, Church or Colleges did not choose to open up and work their own quarries. Thomas Prat is the earliest local example of such a stone merchant of whose career we know some details, and he is an interesting figure for the important place he occupies in the building of Merton College Chapel in the late 13th century. He and other members of his family were living at Wheatley in 1279,³⁸ and it may well have been due to their family enterprise that the quarries came into such prominence during the next few centuries. Thomas Prat was paid large sums for stone by Merton, and was in constant attendance during the building operations. He may even have held some position equivalent to foreman of the masons, but he is never styled 'Magister' in the accounts, and we still lack any name of a Master Mason and designer of the fine and advanced work of the chancel and crossing at Merton.³⁹ Hugo Gryffyn was working stone at Wheatley at the same time,⁴⁰ then there are William Eustas and Nicholas Harald supplying stone both for Windsor and Abingdon Abbey in the 14th century,⁴¹ the Payn and the Howes⁴² families of Taynton, and during the 15th century many more at Headington whose business it was to supply stone, and sometimes lime or slates. Master masons like William Orchard or William East also owned their own quarries. A history of the building stone industry in this region must certainly take into account the influence of these men who opened up quarries probably on their own initiative, and must have done much to popularize particular stones for buildings at certain periods. To study them, however, requires much laborious documentary research.

Dr. Arkell refers to the transport of stone from the quarries in mediaeval and later times: the study of building stone richly illustrates the history of transport facilities, for it is bulky material which was frequently carried long distances. The Thames was often used at least from the end of the 13th century to bring stone in to Oxford from the quarries of the Taynton area, after a preliminary journey by cart to Eynsham. Later, in the 17th century, it was carted to the Thames at Radcot (pp. 62 and 64) though it is difficult to see why, as the land journey is as long as to Eynsham and the water journey longer.⁴³ But the Thames, especially during the Middle Ages, was very erratic as a navigable waterway, being very sensitive to

³⁶ *Cal. Lib. R.* (1226-40), 221.

³⁷ *Cp. D. Knoop and G. P. Jones, The Mediaeval Mason*, 23, etc.

³⁸ *Hundred Rolls*, II, 719. Other members of the Prat family also worked on Merton College chapel.

³⁹ I am most grateful to Mr. H. W. Garrod for allowing me to use many of his transcripts of the Merton Records.

⁴⁰ *Cal. Pat. R.* (1281-92), 231.

⁴¹ Hope, *Windsor Castle* (1913); *Obedientiars' Rolls, Abingdon Abbey* (Camden Soc.), 1892.

⁴² E.g. 1358-66, Roger Howes; Hope, *Windsor Castle*, 1441, John Howes; Jacob, *The Building of All Souls*, 205-7, 219, etc. (in *Essays presented to James Tail*, 26). 1448 Thomas Howes, stone to Merton. *Oxford Historical Society*, xviii.

⁴³ Dr. Arkell suggests to me that this may have been to avoid tolls at Eynsham.

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flood and drought, and it is striking to see from building accounts how frequently carts were used even in the early Middle Ages for the transport of stone over long distances. From 1290 onward carts were bringing stone in to Merton from Wheatley: carts brought stone into Oxford from Taynton for Queen's in 1378, 1398 and 1400, New College in 1396, All Souls in 1439-42, Merton in 1448 and Cardinal College in 1525-9.⁴⁴ In 1456-7 stone for Eton College was carried from Taynton as far as Henley in carts, passing over the new Abingdon bridge and causeway built in 1415, and carts being changed at Culham; from Henley it went by barge.⁴⁵ During the 17th century some effort was made to reduce the strain on the roads, and an act of 1623 urged that the river should be made navigable from Burcot to Oxford, convenient 'for conveyance of freestone commonly called Oxford stone or Headington stone from Bullingdon Quarie nerre the said cittie' to London and other parts.⁴⁶ But often no waterway lay conveniently between quarry and building, and carts churning up the roads with their heavy loads remained a most important means of stone transport. By the later 18th century canals were being used, and Dr. Arkell suggests (p. 92) that the Wilts. and Berks. canal may have stimulated the popularity of Bath stone among Oxford builders of the early 19th century. For the earlier Middle Ages the lack of building accounts makes the study of the stones in the buildings themselves all the more important, and the results can often suggest that transport facilities at this date may have been more fully developed than we sometimes suppose. This has recently been shown, for instance, by Dr. Arkell's identification of the large quantities of best building stone used in the Norman work at Deddington Castle as having come from the Taynton area, 20 miles away,⁴⁷ and he has also identified Taynton stone even in humbler buildings of this date in north Berkshire. Thus the study of building stones can add considerably to our knowledge of economic history at a period when the necessary documents are lacking.

Nobody walking through the streets of Oxford at the present time can fail to observe the great quantities of Clipsham stone being used both in new work and in the steady replacement of all the varied textures of the older work as the process of repair goes forward. Dr. Arkell observes (p. 112) that Clipsham and Bladon stones are the only two making any contribution to Oxford at the present time, and through them he gives a valuable study of masonry and quarrying as contemporary crafts. Although there can be no doubt as to the quality of Clipsham ashlar there must be in many minds a sense of loss as the Headington, Taynton or Wheatley are replaced indiscriminately by Clipsham. The matter is not improved when the pleasing greys of the Clipsham are not blended as cleverly as they might be with the orange, the contrasts being often exhibited raucously at the ashlar joints instead of being allowed to show only in the softer graded junctions between these two colours in the stone itself. One glance at the synthetic stone surface of much of Magdalen,⁴⁸ or of the west face of New College Gate tower shows that

⁴⁴ Merton Records; Magrath, *The Queen's College; Oxford Historical Society*, xviii; Jacob, *Building of All Souls; Oxoniensia*, viii/xi, 140-1.

⁴⁵ D. Knoop and G. P. Jones; *The Building of Eton College 1442-60; Ars Quatuor Coronatorum*, XLVI (1933), 85.

⁴⁶ *Oxoniensia*, II (1937), 153.

⁴⁷ *Ibid.*, xi/xii (1946-7), 167-8.

⁴⁸ Hacked away with the old faces were many original mason's marks! How much finer is the Coade's patent stone used in the eighteenth century for Francis Bacon's sculptures on the Radcliffe Observatory: and how well it has weathered.

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refacing in Clipsham is not the worst fate which can befall an Oxford building, and sometimes, as in the completely refaced Peckwater buildings at Christ Church, after a little weathering it is highly successful. It seems probable that the 18th-century builders conceived of their work in much more ochreous tones than the whites and mauve-greys so beloved in the old work to-day. This may be seen in their coloured prints, and glimpses of something more like the original textures may be seen in sheltered places under the heads of alcoves, on Wyatt's Canterbury Gate at Christ Church, or the Parks Road Gate of Trinity. Although it is clear that many builders of the past appreciated the varied functions and textures of different stones, it would be very difficult to decide how much they calculated on the effects of weathering in lending enchantment to their work: probably they thought very little about this, and Nature has had a hand in the result we see to-day. Many lovers of Oxford would, in fact, perhaps feel upset by the restoration of some buildings to their pristine condition. Luckily the beautiful white weathered Headington Hardstone plinth courses, one of the greatest delights of Oxford buildings, rarely need replacement, in spite of frequent face-bedding of the stones. Another form of repair, replacement of individual weathered stones, often has to be done for economy, but good blending of the new with the old is a difficult matter, and rarely successfully done: more could be done sometimes to match the surface textures, and Dr. Arkell's book should be invaluable in showing how the variety of textures might be preserved.

Dr. Arkell, in his final chapter, discusses the various chemical treatments used on stonework, and emphasizes, as Dr. J. E. Marsh did twenty-five years ago, that the simplest precaution of all, plain cleaning, has been very much neglected in Oxford. When done properly it is, in fact, the safest procedure, and often likely to keep the stone in good condition. Cleaning, moreover, often relieves the drab monotony of blackened Bath ashlar surfaces. It is especially effective on interior work, adding greatly to the light in the building, but Dr. Arkell considers it practically and aesthetically undesirable for the mediaeval buildings, which often luckily require less attention than those of the 17th and succeeding centuries.

Thomas Sharp observes⁴⁹ that 'harmony' does not mean imitation of style, but rather choice of materials and a sense of scale. He maintains that only ashlar surfaces are suitable for urban architecture, and that rubble walling is a rural style, whereas Dr. Arkell often shows his approval of the Bladon coursed rubble with Clipsham dressings which is such a feature of modern Oxford. Surely Mr. Sharp's contrast between urban and rural styles is falsely applied to Oxford, which should have elements of a country town about it. Indeed, Mr. Pantin has shown⁵⁰ how frequently the older domestic buildings in Oxford were not built of stone at all, but timber framed, with perhaps one rubble stone wall. The rubble textures are suitable for many domestic buildings derived from the mediaeval tradition, and ashlar for those, especially the more pretentious, in renaissance styles. A rubble Queen's would be unthinkable (though even in such buildings rustication is introduced to relieve monotony in ashlar surfaces), but in the new Worcester building or Rhodes House it is pleasing. Each style has its own charm and surely once more what is needed is to preserve the variety of Oxford's building textures.

⁴⁹ Thomas Sharp, *Oxford Replanned* (1948), 172.

⁵⁰ *Antiq. Journ.*, xxvii (1947), 132-3.

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This variety is, in fact, at present being preserved through the actions of the numerous autonomous bodies each responsible for their own buildings, but it might be lost if Dr. Arkell's suggested architectural panel (pp. 172-4) were set up. Perhaps such a panel would have saved some of the worst treatment of Oxford buildings, but it must be remembered that some of the less happy repairs were done under apparently excellent expert advice. A careful study of Dr. Arkell's book by all those responsible for Oxford buildings might ensure a brighter future for them than any panel with central authority.

The list of errata in this book is very short: the City wall (pl. 2) is not 11th-century random rubble but substantially 13th-century, with very many later repairs. One of the thirteen maps, fig. 17, has no scale, and at the top of p. 96 for 'St. Giles' read 'St. Mary Magdalen' church.

In such an excellent book it is disappointing to find so many poor illustrations, often because of blemishes which could have been easily avoided, such as giddy uncorrected verticals, especially of pls. 38 and 36, where the Clarendon building and the Bodleian look particularly uncomfortable. With many other plates the original photograph cannot have been adequate—it is the old story so fully brought out by the late Mr. S. M. Collins in his review of the Historical Monuments Commission's Oxford City volume.⁵¹ We are asked to compare pl. 14 with pl. 36; pl. 14 is one of the most delightful in the book, an engraving from the *Oxford Almanack* of 1791 of Wyatt's Oriel library in its final stage of construction, and pl. 36 shows up particularly badly against this as a means of illustrating textures. In respect of photographic illustration (and price) *Oxford Stone* compares adversely with the same publisher's *Our Building Inheritance*, by W. H. Godfrey. However, Dr. Arkell's book has some magnificent and well-produced old prints of Oxford buildings, such as pl. 14 just mentioned, the view of Hertford and the Bodleian, c. 1820 (pl. 17), and J. M. W. Turner's fine view of Worcester with the Radcliffe Observatory in the distance from the *Oxford Almanack* of 1804. Le Keux's engraving of Mackenzie's view of Exeter (pl. 19) has become badly pock-marked in the block-making, or the block has become greasy in printing. But the plates offer the only point of criticism, and we are exceedingly grateful to Dr. Arkell, if only a little less so to his publishers.

The excellence of the book is shown by the many lines of study, historical, economic, and purely practical, which radiate from its hard core of exact geological knowledge and historical understanding. May we express the hope that Dr. Arkell will continue his interest in the building stones of the Oxford region and help us to extend the study of these many interesting problems, in the solution of which his experience of the stones is indispensable.

E. M. JOPE.

⁵¹ *Oxoniensia*, vi (1941), 93.

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The Armorial Glass of the Oxford Diocese, 1250-1850. By E. A. Greening Lamborn. Published for the Berkshire Archaeological Society by Geoffrey Cumberlege, O.U.P., 1949. Pp. xxxi+178. 64 plates. 30s.

Normally the student of heraldry views the appearance of a new book with benevolent cynicism: usually it is only another superfluous manual or some picture-book with gossipy sub-titles which will not advance his knowledge. In this case he need have no fear: Mr. Greening Lamborn has produced a genuine contribution to heraldic scholarship, and one which will prove indispensable to the antiquary and genealogist in the Oxford area. All such men will regret his death not long after the publication of this work.

His book is, in effect, a catalogue of the coats of arms which occur in stained glass in the churches of Oxfordshire, Berkshire and Buckinghamshire. Furthermore, he includes windows in a certain number of private houses, especially those readily open to the public. But the author does more than merely list the shields as they occur and the quarterings which are displayed upon them. Where it is possible he comments upon the marshalling of the various quarterings and tries to show by what alliances they were acquired and on what grounds they can be justified. In consequence Mr. Lamborn's notes to the basic list of coats of arms contain a wealth of information about the families of Oxfordshire and its neighbouring counties, for of course the alliances concerned are not confined to the ecclesiastical limitations of a single diocese. The more complicated sets of family connections are illustrated with pedigrees. It is therefore clear that the book at once takes its place among necessary works of local history: but it should be noted that no glass in Oxford Colleges is catalogued, and that the shields quoted from glass in private houses cover only part of that field.

Mr. Lamborn, however, brings more to this volume than a knowledge of heraldry: he is also an enthusiast for stained glass. Not the least valuable part of the book is the section in which he describes the evolution in the techniques employed by the glazier. 'By a happy coincidence', he writes 'painted glass and armory came into existence together', and he traces the skill with which the mediaeval glass painters made their masterpieces out of comparatively limited resources. In this context Mr. Lamborn must be congratulated on choosing for some of his illustrations the *outside* of the window, where the leading can be more clearly seen. Only at the end of the Middle Ages did 'abrading' come into use, but when it became general it increased opportunities for the heraldic artist; this, of course, was not the case with the earlier development of 'yellow-stain', since heralds very rarely wished to place a gold charge upon a silver field. But, as the author explains, the two methods could be combined.

Since it is to be hoped that this book will be reprinted, the reviewer may, without wishing to be captious, record a few places where slips have crept in. Edward III (p. xvi) set France in the 1st and 4th quarters. Shute Barrington (p. xxix) was buried at Durham: it is his wife whose monument is desolate among the new ruins of Mongewell. The molets in the crest of Greenhill (p. 6), as granted in 1698, are blazoned as 39 in number (in commemoration, it is alleged, of the numerous progeny of an ancestress). It might be added, on p. 75, that the present Lord Ducie descends from Sir Robert Ducie, Lord Mayor, only in the female line. On p. 130, Sir Thomas Pope's motto was usually: '*Quod tacitum velis nemini dixeris*';

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it may be misquoted here. Plesci is spelled thus, and as Plescy, on p. 139 : I would prefer the former—though no doubt a mediaeval scribe could be equally inconstant. But these are minor points in a work of great erudition and accuracy.

Naturally such a book raises a number of problems and invites comment and comparison with similar heraldic material. The author's treatment of glass underlines the need for a similar handling of other mediums ; in particular, in armorial brasses we have an analogous field of study, and one roughly contemporaneous with the best heraldic stained glass. Often this would not make the task of the herald or genealogist any easier, for the blazons on brasses may differ from those recorded in windows. On the other hand, where the nature of the blazon permits this, the brass may claim to be more enduring. A single church in Dorset can offer two such comments on Mr. Lamborn's local coats of arms : this is quoted simply as an illustration of the way in which detailed heraldic studies such as this open up the field for research. In Melbury church is an altar tomb of the Brownings (c. 1416) which shows that their kinsmen, the Maltravers or Mautravers family of Hook bore fretty and a label of three points ermine. But in the quarterings of Greville at Stoke Poges (p. 80) there is no label. In the same shield, Cifrewast of Hook has two bars gemel : but on the brass of Sir Giles Strangways (1562) at Melbury, the same family, representing the same alliance, have *three* bars gemel.

Of course, similar problems occur in glass alone : on pages 9 and 13 are two variants of the arms of Golafre, one from Abingdon and one from Appleton ; and obviously such variants ought both to be expected and accepted. But these are not the only problems which Mr. Lamborn sets before an enquiring mind. There are also the resemblances between the shields of different families. The author explains, for example, the genealogical link which accounts for the similarity between the arms of Fermor and Wenman. Was there a similar connection, or perhaps a feudal link, between the Hydes of Denchworth and the Fettiplaces, who both bore '*Gules two chevrons silver*' ?

Mr. Lamborn has given local antiquaries enough material to ponder over in the long winter evenings, and all should be grateful to him. He poses the question of the shield of Woodstock quartering Mortimer in St. Nicholas, Abingdon. Personally, I am inclined to suppose it was the arms of Edmund, Earl of March, *after* his uncle's death in 1407 : he might then have been tempted to put Holand, with its royal connection, in the first quarter.

The book is admirably produced, and it would be ungenerous in this journal not to record that the excellent photographs are the work of Mr. Ian Taylor and Mr. P. S. Spokes.

MICHAEL MACLAGAN.

The Oxfordshire Election of 1754. By R. J. Robson. Oxford University Press, Geoffrey Cumberlege, 1949. Pp. 192. 12s. 6d.

Apart from its value as a contribution to the study of 18th-century politics and parliamentary elections in the national sphere, Mr. Robson's examination of the interplay of city, county and University as exemplified in the Oxfordshire Election of 1754 not only attempts with very considerable success to disentangle the complicated relations of these three electoral bodies, but does much to illuminate the vexed question of the strength of Jacobitism in these reputed strongholds of loyalty to the Stuarts. Taking as his starting point the Oxfordshire Association of 1745 by

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which those ostentatiously faithful to the Hanoverian dynasty undertook to defend 'our happy constitution in Church and State' against the invading army of the Young Pretender, Mr. Robson shows how large a proportion of Oxfordshire magnates, gentry and parochial clergy abstained from lending their support to this virtual vote of confidence in the government of the day. Were those who stood aloof really the 'traitors in disguise' that their political opponents declared them to be? According to Mr. Robson's findings they were not; a harmless hobby of planting Scotch firs and of drinking convivial toasts to the Pretender marked the extent of the enthusiasm of almost all the University and County 'Jacobites' who were never more than 'disaffected in a passive way to the House of Hanover'. Even the zealous Dr. William King, famous for his inflammatory speech at the opening of the Radcliffe Camera in 1749, virtually renounced his allegiance to the Stuarts at the accession of George III. But if by the 1740s and 1750s Jacobitism was little more than a romantic and nostalgic affectation, the county, the city and the University could muster powerful and determined Tories, faithful upholders of that 'Old Interest', well typified by the Oxfordshire families of Jenkinson, Dashwood, Stapleton, Lee, Bertie and Wenman, whose members constantly occupied the county seats in the 17th and 18th centuries. So that when the restless political ambition of Sir Edward Turner, the squire of Ambrosden, backed by an alliance between the Duke of Marlborough and the Earl of Macclesfield (the one feeling his way towards a political patronage suitable to his station; the other ambitious for his son's advancement) disturbed the carefully maintained peace by which contested elections in the county had been avoided ever since 1710, an excellent opportunity offered itself for the 'New Interest' to rout the 'Old Interest' and to undermine this concentration of hostility to the government in county, city and University.

Details of the electioneering with the part played by the Press and the various inducements held out to the voters, show how powerful were purely local factors in determining the casting of votes; carefully maintained conventions between landowners forbade the seduction of tenants already engaged to one side, and the personal obligation of a client to vote according to his patron's wishes was generally regarded as binding. Nevertheless, there were, as Mr. Robson shows, enough independent or unattached freeholders to make canvassing a very necessary and a very expensive business. And occasionally a national issue which appeared of over-riding importance might burst upon the local scene and bring politics of quite a different kind into the conflict: such in 1753 was the Jew Bill agitation which stirred Oxfordshire to the depths, although, as Mr. Robson justly notes, but a fraction of the freeholders who were induced to see their country's ruin projected in this very harmless piece of legislation can ever have set eyes upon a Jew in their lives. When the week of the poll came, the Vice-Chancellor intended that the University should refrain from interference. But the placing of the booths in Broad Street against the North Side of Exeter led inevitably to the participation of that College in the fray, and the 'New Interest' benefited considerably from the facilities afforded them of approaching the voting place through the Turl Street entrance and the College grounds.

Thus the attempt at University impartiality in the contest was largely abandoned, and the Whigs of Exeter and Christ Church stood out clearly against the preponderant Toryism of the majority of the colleges. For the 'Old Interest', the intrusive element in this county election was the City mob. The ambiguous

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returns of the Whig Sheriff and the eventual scandalous decision of the House of Commons in favour of the 'New Interest' candidates marked the end of the old Toryism in the county, and at the accession of George III the University was, as Mr. Robson remarks, at last reconciled with the Hanoverian régime, if not with the administration.

Mr. Robson's survey of this famous election is handled lightly and easily, and he has made a very readable narrative full of Oxfordshire and University interest, with all too brief sketches of such personalities as Sir James Dashwood, Sir Edward Turner, Lord Wenman, Lady Susan Keck, and the University figures: Rector Webber of Exeter, Vice-Chancellor Huddesford, Benjamin Kennicott and Dr. William King. His book, which shows to the full the value of local and family archives in writing history of national importance, is a notable contribution both to Oxfordshire local history and to our general understanding of 18th-century Parliamentary history.

E. A. O. WHITEMAN.

Guide to an Exhibition of Air-Photographs of Archaeological Sites. Oxford: printed for the Visitors and sold at the Ashmolean Museum, 1948. Pp. 19. 16 plates. 2s.

The collection of air-photographs on exhibition at the Ashmolean Museum from November 1948 to February 1949, was undoubtedly one of the most important and impressive of its kind that has ever been displayed in this country. More than a hundred examples of the technical mastery and art of the late Major G. W. G. Allen were on view, which illustrated almost every type of archaeological site to be met with in southern England. These were a representative selection from nearly two thousand photographs which, since Major Allen's death in 1940, have been housed in the Museum. Major Allen specialized in the low-level oblique photograph, taken at just the right moment and time of year to show a particular site to the greatest advantage. His photographs present us with the familiar view as from a hill-top, and, incidentally, they are often of great beauty. For example, his view of the Roman road from Mildenhall to Winchester (*Guide*, pl. xiii), or of the Wansdyke near Monkton Farleigh (*Guide*, pl. xii). They are easy to understand but, because they are oblique, often difficult to interpret.

No doubt the best results from air-photography will always be obtained by Major Allen's method, the specialized treatment of individual subjects, but so much attention has always been focused on his work that the archaeological importance of Royal Air Force air-surveys is apt to be overlooked. The exhibition included a number of 'vertical' photographs taken by the Royal Air Force during the war in France, Italy, the Balkans and North Africa, these being part of a collection also housed in Oxford, at the Pitt-Rivers Museum. Although taken for purely operational purposes they revealed a remarkable wealth of archaeological detail. Since the war the whole of the United Kingdom has been photographed by the R.A.F. at a scale of 1 : 10,000 and thousands of photo-prints are available for research. Useful results have already been obtained in some parts of the country from the mapping of antiquities revealed by these photographs, but how much more could be achieved if the study of this material could be organized on a nation-wide scale?

The Ashmolean Museum is to be congratulated on the production of a *Guide* which is much more than a mere catalogue. It provides a valuable

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introduction to the uses of air-photography in the recording of known archaeological sites and the discovery of new ones. No less than seventeen different classes of site are discussed in the text and these are well illustrated by sixteen excellently produced plates. The Guide constitutes a very welcome permanent record of a most notable, but, alas, temporary, exhibition, and is worthy of a place upon the shelves of all who are interested in research from the air.

P. P. RHODES.

Wootton Village History Exhibition. 1949. Pp. 7. (Copies may be obtained from Mr. E. M. Hugh-Jones, Wootton, price 1s. 1d.)

Whatever part Wootton may have played in making local history it is certainly playing a considerable part in making it known. The vicar is the diocesan representative on the local committee of the National Archives Register, Colonel Charles Ponsonby, M.P., is the Chairman of the Oxfordshire Victoria County History Committee, and Wootton was the only village in 1949 to produce a printed pamphlet on the occasion of one of the 'Know-your-own-village exhibitions' which the Oxfordshire Rural Community Council have been fostering. The pamphlet is largely based on Colonel Ponsonby's history of Wootton. The writer is anonymous, but the fact that she is actually a local resident with experience of literature rather than a professional purveyor of history makes the pamphlet better for its audience. It was admirably suited for explaining the exhibition to visitors and is of lasting value as a record of the more interesting exhibits, though some may regret that the names of the lenders are not permanently recorded.

W. O. HASSALL.

Bibliotheca Radcliviana, 1749-1949. Catalogue of an Exhibition. 47 pp. and 16 plates. (Bodleian Library, 1949.) Price 2s. 6d.

In the spring of 1949 an exhibition was held in the Bodleian Library and the Radcliffe Science Library to commemorate the bicentenary of the opening of the Radcliffe Library, now generally known as the Camera. The Catalogue has a foreword by Bodley's Librarian, a biographical notice of John Radcliffe by Dr. Sherwood Taylor and Bishop Hone, and an account of Radcliffe's Library with a catalogue of exhibits by Mr. H. F. Alexander and Mr. S. G. Gillam. Many of the plates illustrate the designs for and the construction of the building: some are published for the first time.

The famous physician, John Radcliffe, is still an enigma. 'We do not know the secret of his success. He was not a man of much reading nor is he known to have made any original contribution to medical science.' Nevertheless, Radcliffe became the most fashionable doctor of his day and amassed a large fortune. During his lifetime he was a most generous benefactor to University College and before his death put forward a scheme for building a library in Oxford. On his death in 1714 his large fortune was administered by a board of Trustees who were responsible for building the Library, an Infirmary, and an Observatory (now moved to Pretoria).

A site in the Cat Street area was chosen for the Library and several architects were invited to submit designs. That of James Gibbs was chosen. The preliminary plans and later developments are well represented in the Catalogue

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by fifty-three exhibits ranging from a plan of about 1712 to workmen's contracts and bills from 1737 to 1759.

The Library was formally opened in 1749 with Francis Wise, the antiquary, as first Librarian. For some sixty years the accessions were of a very miscellaneous character, including oriental manuscripts, law books, libraries of collectors, and a mass of 50,000 pamphlets, a gift which alarmed Richard Rawlinson, but one which marks an early appreciation of the importance of ephemeral literature in historical and literary studies. The most imaginative suggestion was that the new Library should receive the manuscript collections of the Bodleian with a further suggestion that the Colleges should also add their codices. This would have made the Radcliffe Camera one of the great treasure chambers of the world, the contents matching the magnificence of its structure. Sir William Blackstone also emphasized the need of the new Library having a peculiar and useful character of its own, and not used 'as a supplement to former libraries'. Its collections, however, have attained no permanent distinctive features, but the Camera remains 'one of the noblest architectural compositions to be found anywhere in England or indeed in Europe'.

In 1811 George Williams, Radcliffe Librarian, physician, and botanist, first gave the Library a definite character by confining purchases to works on medicine and natural history, a general policy continued by his successors John Kidd and Henry Wentworth Acland, both Regius Professors of Medicine. In 1861 the books were removed to the University Museum and the Camera was lent to the University for the purpose of being used as a reading-room of the Bodleian. Two years later the ambulatory was permanently enclosed, fitted with shelving, and for the next half century was the main storage room for accessions, chiefly those received under the terms of the Copyright Act. In 1927 the freehold of the Camera was with great generosity presented by the Trustees to the University. Many improvements were carried out during the next thirteen years, including the conversion of the ambulatory into an undergraduates' reading-room. The study of science is pursued at the Museum in a new Radcliffe Science Library, now one of the chief specialized libraries in the kingdom.

To-day the memory of John Radcliffe is perpetuated by a College quadrangle, the Radcliffe Camera, a county Infirmary, a beautiful Observatory building, and a Science Library. Few men have had the great fortune to be commemorated not only by such impressive architectural monuments, but by an enduring and ever-increasing contribution to national well-being and the advancement of science.

S. GIBSON.