

## Notes on Arabic Numerals in Mediaeval England.

By H. T. MORLEY, F.S.A. (Scot.), F.R.Hist.S., J.P.

**A**LTHOUGH not very general, Arabic numerals were used to some extent in mediaeval times in England, and are found in manuscripts, and on Brasses and memorial inscriptions, bench ends, or carved on old beams or doors. Their interpretation is not always clear, as they are often closely similar to contemporary letters (W. J. Hemp: *Archaeol. Cambrensis*, 6th Ser., XVIII, 320-2, 1918; compare also many illustrated here, such as figs. J, K & O). Owing to the unfamiliarity of the forms they are often wrongly construed; for instance, the 1490 at Colchester (Fig. F.) is often given as "1090," and the early "5's," if they are not imitating a black letter "h" are often very straight and liable to be interpreted as a "1" or "3," as with the Cambridge "1552" (Fig. P.), the Ashford 1592 (Fig. S) and the Sulhampstead 1527 (Fig. M.).

The earliest examples of Arabic numerals in England are the remarkable series on the West Front of Wells Cathedral, probably of the 13th century (see G. F. Hill, "Early Use of Arabic Numerals in Europe," *Archaeologia*, LXII, 137-190, 1910). Apart from a remarkable graffiti example of 1388 at Whittlesford, Cambs. (Fig. o, A.), which can hardly be 1588 as it pre-dates the Perpendicular Screen (Coulton, *Proc. Cambr. Antiq. Soc.*, XIX, p. 59 & Pl. X, 1915), there appear to be no others in England except in manuscripts (e.g. H. W. Saunders: *Introduction to the Rolls of Norwich Cathedral Priory* (1930), 154-5, 13th & 14th cent.), until the 15th century. In England Arabic numerals are used to some extent in arithmetic in manuscripts from the late 13th century, and are found on instruments like Astrolabes, and Quadrants, such as the beautiful one in the British Museum with the badge of Richard II on it (*Brit. Mus. Med. Guide* (1924) p. 222 & Fig. 144).

The Greeks in the 5th and 6th centuries B.C. used a system of digits for enumeration, as did the Romans, though by the 3rd century B.C. the Greeks had adopted the Alexandrian system, using letters for numerals, which held the germ of the Arabic numeral system (W. W. Rouse Ball, *Short History of Mathematics* (1901), 125-131). By the end of the 5th century A.D. notation using 9 digits and a zero was current in Hindostan, and was introduced from there to Arabia. By about 900 A.D. this notation became well known in Spain, and was in use in Italy by 1202. Although they came into fairly general use there during the later Middle Ages, it was not without opposition, for an edict at Florence

in 1299 forbade bankers to use them, and in 1348 the University of Padua dictated that a list should be kept of books for sale, with prices marked "*non per cifras sed per literas claras.*" (W. W. Rouse Ball: *Short History of Mathematics* (1901), 192).

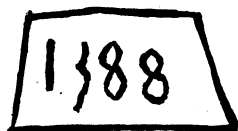
Arabic numerals were in fairly common use in English manuscripts, especially for calculations and for numbering of pages, from the 14th century onwards. In the Cambridge University Library is a manuscript (Ee. 1.3.f. 2d.) of c. 1430, with a description of the "*literae de Augrum*" and the method of using them (L. F. Salzman: *English Trade in the Middle Ages* (1931), 63-4). Occasionally they are used in the original Arabic order, from right to left, as in the pagination of Book K of the "*Domesday of St. Paul's*" (*Camden Soc.* 1857, preface xiv.), where these are crossed out and a new set in the usual European order, left to right, are inserted. Considering what a great advance they represent beyond the Roman system of enumeration for all forms of calculation, it is remarkable that they did not come into at all general use for commercial purposes until the 16th century.

Arabic numerals are not usually found before the 16th century on examples of native craftsmanship in the more outlying parts of the British Isles. In Llangwnadl Church, Caernarvonshire, carved on a column of the N. arcade is HEC EDES EDIFICATA EST IN ANO DNI 1520 (*Archaeol. Cambrensis* 6th Ser., XVIII, 320-322, 1918), and a bench end at Hawarden, Flintshire has a date 1520 in Arabic numerals carved upon it (J. C. Cox, *Bench Ends in English Churches* (1916), 187-190. In Devonshire, bench-ends at North Lew (photo E.M.J.) and at East Budleigh (J. Stabb: *Devon Church Antiquities* (1909), 25) both have dates 1537 carved upon them in Arabic numerals, and in Cornwall one at Lewannick, near Launceston, has a date 1546 in Arabics. In Scotland Arabic numerals are found on the tomb of the first Earl of Huntly in Elgin Cathedral in 1470 (though G. F. Hill, *Archaeologia* LXII, 141, 1910, says the "5" and "7" both look foreign), and again in 1504 with the arms of James IV of Scotland, on a buttress on the crowned tower of King's College, Old Aberdeen, and in 1524 at Kinkell, near Inverurie, Aberdeenshire.

**Fig. A.** 1388, Whittlesford, Cambs. Graffiti on pillar between choir and S. Chapel: cut before perpendicular screen put in present position (*Proc. Cambs. Antiq. Soc.*, XIX, 59, & Pl. X, 1915).

**Fig. B.** 1445, Heathfield, Sussex. On a much damaged stone in tower. G. F. Hill (*Archaeologia* LXII, Pl. I, 176, 1910) suspects this may not be contemporary, as the "5" looks too modern for this date.

1447, Northleach, Glocs. On a brass to Agnes Fortey and her two husbands (*Archaeologia*, LXII, 177, & Table XVI, No. 1, 1910).



A. WHITTLESFORD, CAMBS.

1225

B. Heathfield. 1445

2228

C. Bray, 1448

Λ2

128Λ

1000

D. Thornton. -- 72.

E. Near Norwich. 1487.

G. Colchester 1490.

1282

F. Barking, London. 1489.

1292

H. Hurley. 1492

1292

I. Hadley. 1494

1300

1509†

1526

J. Coglan. 150-

K. London Bridge. 1509.

L. South Minns. 1526.

1521

M. Sulhamstead, 1527

1537

N. Aldham. 1537.

1552

P. Cambridge. 1552.

1582

R. Aldermaston, 1582

1554

Q. Salisbury, 1554



O. MAGDALEN, OXFORD.

1595

S. Ashford, 1592

- Fig. C.* 1448, Bray, Berkshire. On an oak beam on Lychgate in the churchyard (Aymer Vallance: *Old Crosses and Lychgates* (1920), p. 170, for detailed drawings).
- 1454, Ware, Hertfordshire. Brass in Church to Ellen, daughter of John Coke (*Archaeologia*, LXII, 177, & Table XVI, No. 2 1910).
- Fig. D.* (14)72, Thornton, Bucks. Brass in Church, to Robert Ingylton: the inscription is partly in words with "72" in Arabic numerals.
- 1485, Lambourn, Berks. On Isbury's Almshouses (*Archaeologia*, LXII, 190, 1910).
- Fig. E.* 1487, Arminghall, near Norwich. Carved on a wooden door of an old house, probably one of the old "hospitia" where free entertainment could be obtained (*Archaeologia*, LXII, 176 & Table XIV, No. 6).
- Fig. F.* 1489, Barking, Essex. Brass in All Hallow's Church to Thomas Gilbert, Merchant. This date is often referred to as 1482.
- 1489, Windsor, Berks. On painted panels in S. aisle of St. George's Chapel.
- 1490, Hunston, Sussex. Brass in Church, to John Playctow, Vicar (*Sussex Arch. Coll.*, LXXVIII, 93, 1937).
- Fig. G.* 1490, Colchester, Essex. Carved on the sill of a window, much damaged, lower part of "4" missing. From an engraving in "Cromwell's Colchester." Often read as "1090."
- Fig. H.* 1492, Hurley, Berkshire. On a brass in Church, to John Doyley. Brass fragmentary, effigy lost.
- 1493, Bishop's Waltham, Hants. On a stone in wall of cottage in remains of Episcopal Manor House (*Archaeol. J.*, 1850, p. 76).
- Fig. I.* 1494, Hadley, Middlesex. Carved on a stone in the tower of the Church.
- 1497, Fakenham, Norfolk. On a brass in Church, to Richard Betteson, Chaplain.
- 1499, Winchester, Hants. On pane of glass in one of the windows of Hospital of St. Cross. This date shows interesting forms.
- Fig. J.* 150(0), St. Mary Coslany, Norwich. On a brass, badly damaged.
- 1502, Cheriton, Kent. On a brass to Thomas, son of Sir John Fogg.
- 1503, Winchester, Hants. On a stone in the Master's lodging at St. Cross, Winchester (*Archeol. Cambrensis*, 332, 1918: where illustrated).
- 1503, Blickling, Norfolk. Brass to Sir John Cotys.
1503. Blickling, Norfolk. Brass to John Coke.
- 1503, Swardeston, Norfolk. Patumpsest Brass to John Goodwyns.

1506, Field Dalling, Norfolk. Brass to William Nycolas.

1507, Surlingham, Norfolk. Brass to Henry Wilton, Rector.

1509, Walsingham, Norfolk. Brass to Henry Chederow & his wife Joan.

*Fig. K.* 1509, London. In making repairs at London Bridge a stone was found with an inscription and the date 1509 in Arabic numerals. In MS. of the early 15th century the cipher often had a line through it as in this example: this feature disappeared later.

1510. Oxford. Brass in tower of Merton College, to William Byssie (*Archaeologia*, LXII, 177, & Table XVI, No. 9, 1910).

1518, Loddon, Norfolk. Brass to Nich. Gavell.

1522, Windsor, Berks. Below paintings on N. side of Oxenbridge Chapel, St. George's Chapel.

1523, Isleham, Cambs. Brass to Christopher Grene, Warden of the free Chapel.

1525, Eton, Bucks. Brass in College Chapel to William Horman, vice-Provost.

*Fig. L.* 1526, South Mimms, Middlesex. Painted on a glass window in the Church. (Taken from a drawing).

*Fig. M.* 1527, Sulhamstead, Berkshire. An inscription on a Brass to Ralph Eger, rector, tells us "we should despise the alurements of Eve and turn our eyes to heaven" 1527.

1531, Barningham, Norfolk. Brass to James Bacun.

*Fig. N.* 1537, Aldham, Suffolk. Carved on a wooden seat in Church.

1537, North Lew, Devon. Well carved on one of the easternmost bench ends of the Nave. (Photo E. M. Joze).

1537, East Budleigh, Devon. Carved on a bench-end (J. Stabb: *Devon Church Antiquities* (1909), p. 25).

1546, Lewannick, Cornwall. Carved on a bench end. (J. C. Cox: *Churches of Cornwall* (1912), 153).

*Fig. O.* 1541, Magdalen College, Oxford. On panelling at E. end of Hall. This panelling was made in London (Aylmer Vallence, *Old Colleges of Oxford* (1912), p. 57 and Pl. XXVI: *Roy. Comm. Hist. Mon. Oxford* (1939), pl. 137).

*Fig. P.* 1552, Cambridge. Carved on a beam at the Half Moon Inn near Magdalen College. These dates, and the three following, have been the object of much discussion. This one is persistently read as 1352, but there can be no doubt that 1552 is intended.

*Fig. Q.* 1554, Salisbury. From a drawing on a tomb.

*Fig. R.* 1582, Recorded as from walling near Aldermaston, Berkshire. I have not been able to find this example.

*Fig. S.* 1592, Ashford, Kent. Cut on a beam in the Church.

*Fig. T. & U.* Two sets of 1 to zero from MS. sources. T. is from Henry Shaw: *Alphabets, Numerals and Designs of the Middle Ages*; and U. from Brit. Mus. Landsown MS. c. 1470.

I must express my thanks to our Editor, Mr. E. M. Jope, for his great help in giving me so much practical and important information, and for his valuable knowledge and research which he has kindly allowed me to use.—H. T. MORLEY.

1 2 3 4 5 6 7 8 9 0

T. From 15<sup>th</sup> Century M.S.

U. 1 2 3 4 5 6 7 8 9

Landsown MS. cir. 1470