

deserted and non-deserted villages are found side by side all over the English countryside and — local as the English climate is — it would be rather difficult to imagine the raindrops being so locally selective”.¹²¹

The case of Barton Blount is just one illustration of a much wider issue of considerable interest: the divergence between two schools of thought. Historians have for long been concerned to document changes in the social structure of the rural population and in the relationship between factors such as demography and the market, preferring an economic and social interpretation based solely on documentary evidence. Some archaeologists, faced with interpreting the evidence in the ground, have tended to concentrate on environmental factors, looking to the soil itself and the prevailing weather for a physical explanation. It is a pity that some archaeologists have dogmatically adhered to the theory of climatic deterioration as the only cause, where a combination of the archaeological and documentary evidence could provide a more satisfactory explanation.¹²²

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STRUCTURAL ASPECTS OF MEDIEVAL TIMBER BRIDGES: ADDENDA MAJOR BRIDGES

NEWARK-ON-TRENT. In *Medieval Archaeol.*, xix (1975), 52–4, a hypothesis was advanced that, until the use of heavy pile-drivers became widespread, not later than the early 16th century, the posts of major timber bridges commonly stood upon sole-plates, as in minor bridges; it was also suggested that the earlier structural form may have been repeated in bridges rebuilt in periods when the ‘projecting pile’ support had become usual. Thus, the bridge at Chepstow, as it survived until the early 19th century, although it may have been completely rebuilt in the 16th, was cited as a plausible model of the bridge as it had existed under Henry III.

Both suggestions are confirmed by an indenture, not noticed in the earlier discussion, but already printed by Salzman,¹²³ dated March, 1 Hen. VII (1486, new style), by which Edward Downes, carpenter of Wirksworth, undertakes to rebuild, with new oak, the bridge over the Trent, adjoining the bishop of Lincoln’s castle at Newark, Nottinghamshire,¹²⁴ which had lately been destroyed by floods. The constitutional and economic aspects may need further discussion: the bishop has provided 100 marks; the burgesses, under an alderman (but not fully corporate?), act as his agents and are to build the abutments and provide carriage; the carpenter is to do his work and provide timber at his own costs for £40, which, in view of the size of the bridge and the ruling prices for large timber, seems too little; a concealed subsidy from the king’s or bishop’s woods is possible.¹²⁵ The structural aspects, however, are quite clear. The bridge is to be between

¹²¹ M. Beresford in M. Beresford and J. G. Hurst (eds.), *Deserted Medieval Villages* (London, 1971), 20.

¹²² e.g. J. G. Hurst in *ibid.*, 121–2; D. G. and J. G. Hurst, ‘Excavations at the medieval village of Wythemail, Northamptonshire’, *Medieval Archaeol.*, xiii, 167, 181; cf. L. A. S. Butler, *Current Archaeol.*, II (1969), 146. A similar situation has arisen regarding moated sites, but the importance of, for example, cultural change is now becoming generally accepted: cf. D. G. and J. G. Hurst, ‘Excavation of two moated sites: Milton, Hampshire, and Ashwell, Hertfordshire’, *Jnl. British Archaeol. Assoc.*, 3rd ser., xxx (1967), with C. C. Taylor, ‘Medieval moats in Cambridgeshire’ in P. J. Fowler (ed.), *Archaeology and the Landscape* (London, 1972), esp. 246–8, and H. E. Jean Le Patourel, *The Moated Sites of Yorkshire* (Soc. for Medieval Archaeol., monograph series, v, London, 1973).

¹²³ L. F. Salzman, *Building in England* (1st ed., Oxford, 1952), 546–7.

¹²⁴ The Newark branch may be now reckoned as part of the Devon, but was formerly the main stream of the Trent: E. Jervoise, *Ancient Bridges of Mid and Eastern England* (London, 1932), 14, 53–4. The bridge was rebuilt in masonry in 1775.

¹²⁵ The carpenter came from the Sherwood district. Elizabeth I granted sixty trees from Sherwood for the repair of the bridge: *op. cit.* in note 124, 53–4.

stone abutments at either end, perhaps provided on this occasion for the first time (compare the examples cited at Caversham and Kingston-on-Thames). It is to have twelve trestles, described as "arches", but specified as entirely of timber from below water level, making thirteen bays if they stand away from the abutments or eleven if not. The length is not given but was at least 200 ft. or 60 m., making bays of over 4.6 m., and, though not in the gorge-like position of Chepstow, the height of the posts from below water level must have been considerable, probably in excess of 20 ft. or 6 m., since the sill of the watergate of the castle is clear of present mean water level and lies two stories below the floor of the hall, which in turn is only a little above the mean ground level of the E. bank. The only dimensions specified are the scantlings of the timbers.

The timberwork of the bridge was evidently to repeat that of its predecessor, perhaps that for which pontage was granted in 1346,¹²⁶ in all points except the lintels, which were to be 1 ft. longer. There is no mention of piles, stone piers or any other form of foundation, which had evidently not suffered in the flood. The number of posts in each trestle (two or three?) is not specified, but they are to be carefully trimmed to 14 in. in breadth and 12 in. in thickness, that is, slightly larger in the transverse plane, like most of the posts in the almost contemporaneous Kirby Muxloc bridge, but not exaggeratedly oblong, as in the 14th-century Caerlaverock bridge, Phase II. The posts are all to stand upon sill-trees ("*sele tre*") or sole-plates, below water, in section at least half a yard (0.45 m.) square, much as at Bodiam, and "in length according to the work", and to carry summer-trees ("*somer tre*") or lintels, half a yard broad. Over these are joist-trees ("*giste tre*") or runners, 12 in. (0.3 m.) square, with planks ("*plauncher*"), 4 in. thick. There is to be a rail with posts, on either side of the walkway. Thus far the description of a series of Type II trestles is complete and the late medieval terminology seems self-evident.

Bracing, however, is more conjectural. The length of bay and the fact that the trestles are called "arches" seem to imply longitudinal arch-bracing at walkway level, and in the context of the walkway are mentioned "*bandes*" (which in other contexts, as 'bands' or 'bends', mean some form of bracing) "according to the same timber". There is no hint of transverse bracing save that every "arch" is to have one "*fense tre*" before it, "as large as may be carried". Salzman interprets these as 'fenders' on the upstream side to protect the trestles from collision, but if they took the form of piles at some distance there is no mention of driving them. It is possible that they too stood on the sole-plates, forming single shores to the upstream posts or canted uprights rising to the lintels, and thus analogous to the oblique members in Eynsford bridge, Phase I, which seem to have been on the upstream side only. Whatever precisely the "fence trees" were, the interpretation of the rest of the document as describing a major bridge of Type II from the end of the 15th century seems inescapable.

MINOR BRIDGES

30. HEADSTONE MANOR, HARROW. Mr M. B. Thorne has kindly forwarded an account of the thorough 'watching brief' on work by the Pinner and Hatch End Historical and Archaeological Society. Though two pointed poles, or piles of cleft oak, about 26 cm. in circumference, were recovered, it may be said with confidence that nothing was found of the medieval bridge.

34. WEST COWICK MOAT, SNAITH, YORKS. (SE 652206). Timbers found in 1976 by P. Buckland belonged to a bridge with high stone piers, not an all-timber one.

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¹²⁶ *Cal. Patent Rolls, Edw. III, 1345-48*, 160, no doubt refers to this bridge but the grant is to the men of Kelham; a bridge was there by 1169: *Pipe Roll 15 Hen. II* (Pipe Roll Soc., xiii, 1890), 45.